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By

Prof. Yuh-Shan Ho

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[Title: Inorganica Chimica Acta 1225](#_Toc317161193)

[Title: Inorganica Chimica Acta-Bioinorganic Chemistry 1228](#_Toc317161194)

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[Title: Institue of Chemical Engineering Research Event-European Conference Young Research Chemical Engineering, 1st 1231](#_Toc317161196)

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[Title: Intellect 1235](#_Toc317161200)

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[Title: Intensive Care Medicine 1238](#_Toc317161203)

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[Title: Interfaces 1254](#_Toc317161207)

[Title: Interlending & Document Supply 1256](#_Toc317161208)

[Title: Internal Medicine 1260](#_Toc317161209)

[Title: Internal Medicine Journal 1264](#_Toc317161210)

[Title: International Applied Mechanics 1266](#_Toc317161211)

[Title: International Archives of Occupational and Environmental Health 1267](#_Toc317161212)

[Title: International Association of Marine Science Libraries and Information 1277](#_Toc317161213)

[Title: 2006 1st International Conference on Digital Information Management 1279](#_Toc317161214)

[Title: 2009 17th International Conference on Geoinformatics, Vols 1 and 2 1280](#_Toc317161215)

[Title: International Biodeterioration 1281](#_Toc317161216)

[Title: International Biodeterioration & Biodegradation 1282](#_Toc317161217)

[Title: International Biohydrometallurgy Symposium 1296](#_Toc317161218)

[Title: International Business Review 1297](#_Toc317161219)

[Title: International Chemical Engineering 1299](#_Toc317161220)

[Title: International Classification 1300](#_Toc317161221)

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[Title: 2nd International Conference on Bioinformatics and Biomedical Engineering 1302](#_Toc317161223)

[Title: IChEAP-9: 9th International Conference on Chemical and Process Engineering 1303](#_Toc317161224)

[Title: International Conference on Communication Technology Proceedings 1304](#_Toc317161225)

[Title: 2007 International Conference on Convergence Information Technology - ICCIT ‘07 1305](#_Toc317161226)

[Title: Preprints. 2nd International Conference on the Effective Use of CD-ROM Databases 1306](#_Toc317161227)

[Title: 6th International Conference & Exhibition on Chemistry in Industry (CHEMINDIX 2004) 1307](#_Toc317161228)

[Title: Ninth International Conference on Grey Literature, GL9 Conference Proceedings - Grey Foundations in Information Landscape 1308](#_Toc317161229)

[Title: 2007 IEEE International Conference on Industrial Engineering and Engineering Management 1310](#_Toc317161230)

[Title: IEEM: 2008 International Conference on Industrial Engineering and Engineering Management 1311](#_Toc317161231)

[Title: Seventh Conference of the International Society for Scientometrics and Informetrics, Proceedings - 1999 1313](#_Toc317161232)

[Title: International Conference on Innovations in Information Technology 1314](#_Toc317161233)

[Title: ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics 1315](#_Toc317161234)

[Title: Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics 1319](#_Toc317161235)

[Title: Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics 1324](#_Toc317161236)

[Title: 2008 IEEE International Conference on Management of Innovation and Technology 1351](#_Toc317161237)

[Title: 8th International Conference on Scientometrics and Informetrics 1352](#_Toc317161238)

[Title: 2007 International Conference on Wireless Communications, Networking and Mobile Computing 1353](#_Toc317161239)

[Title: 2008 4th International Conference on Wireless Communications, Networking and Mobile Computing 1354](#_Toc317161240)

[Title: IEEE Transactions on Engineering Management 1355](#_Toc317161241)

[Title: Information Visualization 1357](#_Toc317161242)

[Title: 2007 11th International Conference on Information Visualization 1358](#_Toc317161243)

[Title: 2007 International Conference on Management Science and Engineering 1360](#_Toc317161244)

[Title: 7th International Conference on Wetland Systems for Water Pollution Control 1362](#_Toc317161245)

[Title: International Congress on Advances in Nonimpact Printing Technologies ISandT’S Eleventh International Congress on Advances in Non-Impact Printing Technologies ISandT Final Program and Proceedings 1363](#_Toc317161246)

[Title: International Dairy Journal 1364](#_Toc317161247)

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[Title: International Endodontic Journal 1368](#_Toc317161249)

[Title: International Food Research Journal 1370](#_Toc317161250)

[Title: International Forestry Review 1371](#_Toc317161251)

[Title: International Forum on Information and Documentation 1372](#_Toc317161252)

[Title: International Geology Review 1377](#_Toc317161253)

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[Title: International Journal of Artificial Organs 1391](#_Toc317161260)

[Title: International Journal of Behavioral Development 1393](#_Toc317161261)

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[Title: International Journal of Behavioral Nutrition and Physical Activity 1395](#_Toc317161263)

[Title: International Journal of Bifurcation and Chaos 1400](#_Toc317161264)

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[Title: International Journal of Intelligent Systems 1645](#_Toc317161316)

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[Title: International Journal of Special Libraries 1780](#_Toc317161375)

[Title: International Journal of Sport Finance 1782](#_Toc317161376)

[Title: International Journal of Sport Nutrition and Exercise Metabolism 1783](#_Toc317161377)

[Title: International Journal of Sports Medicine 1785](#_Toc317161378)

[Title: International Journal of Surgery 1786](#_Toc317161379)

[Title: International Journal of Surgical Pathology 1788](#_Toc317161380)

[Title: International Journal of Technology Assessment in Health Care 1789](#_Toc317161381)

[Title: International Journal of Technology Management 1795](#_Toc317161382)

[Title: International Journal of Thermophysics 1798](#_Toc317161383)

[Title: International Journal of Toxicology 1799](#_Toc317161384)

[Title: International Journal of Tuberculosis and Lung Disease 1801](#_Toc317161385)

[Title: International Journal of Uncertainty Fuzziness and Knowledge-Based Systems 1803](#_Toc317161386)

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[Title: International Journal of Water 1805](#_Toc317161388)

[Title: International Library Review 1806](#_Toc317161389)

[Title: International Microbiology 1807](#_Toc317161390)

[Title: International Nursing Review 1809](#_Toc317161391)

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[Title: International Peat Journal 1817](#_Toc317161393)

[Title: International Psychogeriatrics 1818](#_Toc317161394)

[Title: International Review of Administrative Sciences 1824](#_Toc317161395)

[Title: International Review of Chemical Engineering 1825](#_Toc317161396)

[Title: International Review of Psychiatry 1826](#_Toc317161397)

[Title: International Society for Fluoride Research 1827](#_Toc317161398)

[Title: International Sportmed Journal 1828](#_Toc317161399)

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[Title: International Sugar Journal 1832](#_Toc317161402)

[Title: International Symposium on Extraction and Processing for the Treatment and Minimixation of Wastes 1833](#_Toc317161403)

[Title: International Symposium on Peat/Peatland 1834](#_Toc317161404)

[Title: Introduction to the Principles of Heterogeneous Catalysis 1835](#_Toc317161405)

[Title: International Urology and Nephrology 1836](#_Toc317161406)

[Title: International Urogynecology Journal 1837](#_Toc317161407)

[Title: Introduction to Wastewater Treatment Processes 1838](#_Toc317161408)

[Title: Investigational New Drugs 1839](#_Toc317161409)

[Title: In Vitro Cellular and Developmental Biology-Animal 1841](#_Toc317161410)

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[Title: Ion Exchange 1847](#_Toc317161413)

[Title: Ion Exchange and Adsorption 1848](#_Toc317161414)

[Title: Ion Exchange Developments and Applications 1849](#_Toc317161415)

[Title: Ion Exchange Technology: Advances in Pollution Control 1850](#_Toc317161416)

[Title: Iranian Journal of Biotechnology 1851](#_Toc317161417)

[Title: Iranian Journal of Chemistry & Chemical Engineering-International English Edition 1852](#_Toc317161418)

[Title: Iranica Journal of Energy & Environment 1856](#_Toc317161419)

[Title: Iranian Journal of Environmental Health Science & Engineering 1857](#_Toc317161420)

[Title: Iranian Polymer Journal 1871](#_Toc317161421)

[Title: Iranian Journal of Public Health 1874](#_Toc317161422)

[Title: Irish Journal of Food Science and Technology 1876](#_Toc317161423)

[Title: ISIJ International 1877](#_Toc317161424)

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[Title: Island Arc 1879](#_Toc317161426)

[Title: ISMOT’07: Proceedings of the Fifth International Symposium on Management of Technology, Vols 1 and 2 - Managing Total Innovation and Open Innovation in the 21st Century 1880](#_Toc317161427)

[Title: First International Workshop on Database Technology and Applications, Proceedings 1881](#_Toc317161428)

[Title: WKDD: 2009 Second International Workshop on Knowledge Discovery and Data Mining, Proceedings 1882](#_Toc317161429)

[Title: Ionics 1883](#_Toc317161430)

[Title: Isokinetics and Exercise Science 1885](#_Toc317161431)

[Title: Isotopenpraxis 1886](#_Toc317161432)

[Title: Isotopes in Environmental and Health Studies 1887](#_Toc317161433)

[Title: Israel Journal of Chemistry 1888](#_Toc317161434)

[Title: Israel Journal of Medical Sciences 1889](#_Toc317161435)

[Title: ISRN Chemical Engineering 1893](#_Toc317161436)

[Title: Issues & Studies 1894](#_Toc317161437)

[Title: Italian Journal of Animal Science 1895](#_Toc317161438)

[Title: Italian Journal of Neurological Sciences 1897](#_Toc317161439)

[Title: Italian Studies 1898](#_Toc317161440)

[Title: ITT Research Institute Report 1899](#_Toc317161441)

[Title: Izvestiya Akademii Nauk Fizika Atmosfery I Okeana 1900](#_Toc317161442)

[Title: Izvestiya Akademii Nauk SSSR 1901](#_Toc317161443)

[Title: Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya 1902](#_Toc317161444)

[Title: Izvestiya Vysshikh Uchebnykh Zavedenii Fizika 1904](#_Toc317161445)

[Title: Izvestiya Vysshikh Uchebnykh Zavedenii Khimiya I Khimicheskaya Tekhnologiya 1905](#_Toc317161446)

# Title: Family Business Review

Full Journal Title: [Family Business Review](http://www.blackwell-synergy.com/loi/fabr)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0894-4865

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Casillas, J. and Acedo, F. (2007), Evolution of the intellectual structure of family business literature: A bibliometric study of FBR. *Family Business Review*, **20** (2), 141-162.

Full Text: [2007\Fam Bus Rev20, 141.pdf](2007/Fam%20Bus%20Rev20,%20141.pdf)

Abstract: This article aims at identifying the characteristics of the family business as a differentiated field within management. For that aim, we use author co-citation analysis (ACA) to identify different research trends within the field, studying all the papers published in the Family Business Review from its foundation in 1988 through to the December 2005 issue. Results show that despite the literature being fragmented and showing a lack of consensus, we are facing, in Kuhn’s words, a development of the research frontier by enlarging the number of approaches used for understanding the family business.

Keywords: Analysis, Author Cocitation Analysis, Bibliometric, Bibliometric Study, Characteristics, Co-Citation, Co-Citation Analysis, Cocitation, Consensus, Development, Family, Firms, Intellectual Structure, Limitations, Management, Paradigms, Policy, Research, Research Trends, Science, Structure, Systems, Trends

# Title: Family Medicine

Full Journal Title: Family Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0742-3225

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Merenstein, J., Rao, G. and D’Amico, F. (2003), Clinical research in family medicine: Quantity and quality of published articles. *Family Medicine*, **35** (4), 284-288.

Abstract: Background and Objective: Publication of clinical research in peer-reviewed journals is an important measure of scholarly productivity. This study determined the quantity and quality of original clinical research published by family physicians. Methods: We surveyed clinical research papers published in the year 2000 in four leading family medicine research journals and research originating in a family practice institution but published in 16 non-family medicine journals. All were selected on the basis of relevance to family physicians and “impact factor.” The relevance and validity of papers was assessed using previously established criteria. Results: The survey of family medicine journals revealed a total of 170 original research articles. Ninety eight were from academic family practice programs, and the remaining 72 were from other medical specialities or health care institutions. Most of the papers were cross-sectional surveys. There were seven qualitative studies, six randomized controlled trials, and no systematic reviews from family practice programs in these journals. Eight of the articles were from practice-based research networks. A total of 79 articles were considered relevant or highly relevant, and 22 of these were also considered valid (Patient-oriented Evidence That Matters or POEMs). The survey of 16 non-family medicine journals revealed 37 clinical research papers: 16 surveys, nine prospective cohort studies, seven randomized controlled trials, three systematic reviews/meta-analysis, one qualitative study, and one case-control study. There were nine “highly relevant” papers-seven could be classified as POEMs. Conclusions: Most clinical family medicine research uses less-rigorous study designs, such as the cross-sectional survey. The majority of papers do not meet established criteria for relevance and validity. There are no standards or comparable studies to compare these results to prior years or to other disciplines.

Keywords: Institutions

# Title: Family Practice

Full Journal Title: Family Practice

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Daley, A., Jolly, K. and MacArthur, C. (2009), The effectiveness of exercise in the management of post-natal depression: Systematic review and meta-analysis. *Family Practice*, **26** (2), 154-162.

Abstract: Background. Post-natal depression (PND) is a serious mental health problem that may be reduced by exercise. National Institute for Health and Clinical Excellence in England have recommended that health professions should consider exercise as a treatment for PND. Objective. To evaluate the effectiveness of exercise in the management of PND. Methods. Systematic review and meta-analysis of randomized controlled trials (RCTs). Data sources involved in the study are Cochrane Library (CENTRAL), MEDLINE, EMBASE, PsycINFO, Science Citation Index and Social Science Citation Index, CINAHL and SPORTDiscus. Review methods. Selection criteria are RCTs and quasi-RCTs that compared any type of exercise intervention with other treatments or no treatment in women with PND. Database searches and abstracts were reviewed independently by two authors. The Delphi criteria were used to assess the quality of included studies. Data were abstracted by two reviewers. Data synthesis is meta-analysis. Main outcome measure is post-natal depression. Results. Five studies fulfilled our inclusion criteria. When compared with no exercise, exercise reduced symptoms of PND {SMD = -0.81 [95% confidence interval (CI): -1.53 to -0.10]}. The overall WMD in Edinburgh Post-natal Depression Scale score was -4.00 points (95% CI: -7.64 to -0.35). However, significant heterogeneity was found. The effect size was reduced considerably (non-significant) when the trial that included exercise as a co-intervention with social support was excluded [SMD = -0.42 (95% CI: -0.90 to 0.05)] and heterogeneity was no longer present. Conclusions. Due to heterogeneity, it is uncertain whether exercise reduces symptoms of PND. Caution is also required when interpreting findings from the main analysis as only five small trials were included and CIs were wide. Further research is evidently required.

Keywords: Behavioural Sciences, Citation, Depression, Exercise, Management, Medline, Mental Health, Meta-Analysis, Postpartum Depression, Pregnancy, Program, Quality, Research, Science, Systematic Review, Women

? van Weel, C. (2011), The impact of research in primary care and family medicine: The Thomson Reuters Web of Science subject category ‘primary health care’. *Family Practice*, **28** (3), 239-240.

Full Text: [2011\Fam Pra28, 239.pdf](2011/Fam%20Pra28,%20239.pdf)

Keywords: Care, Family, Family Medicine, General-Practice, Health, Impact, Medicine, Primary, Primary Care, Primary Health Care, Research, Science, Thomson Reuters, Web of Science

? van Weel, C. (2011), The Web of Science subject category ‘primary health care’. *Family Practice*, **28** (4), 351.

Full Text: [2011\Fam Pra28, 351.pdf](2011/Fam%20Pra28,%20351.pdf)

Keywords: Health Care, Primary, Primary Health Care, Science, Subject Category, Web of Science

? Tsang, C., Majeed, A. and Aylin, P. (2012), Routinely recorded patient safety events in primary care: A literature review. *Family Practice*, **29** (1), 8-15.

Full Text: [2012\Fam Pra29, 8.pdf](2012/Fam%20Pra29,%208.pdf)

Abstract: Background. Existing patient-level data can be used to measure and monitor patient safety. Data from sources including electronic patient records are routinely collected in primary care and may be suitable for adverse event screening, such as patient safety indicators. To inform the feasibility of developing primary care measures of patient harm, information about routinely collected data is needed. Objective. A literature review was conducted to determine the types of adverse events that are routinely recorded in primary care. Methods. We searched ASSIA, Cochrane Library, Embase, HMIC, ISI Web of Science, Medline and PsycInfo databases, grey literature and websites. We included only original research studies in English where routinely collected patient data were used to identify adverse events occurring in primary or ambulatory care settings. Adverse events were defined as unexpected and undesirable patient outcomes arising from health care contact. Results. Of 5029 citations identified, 15 were reviewed. Twelve studies used multiple data sources. Approximately 6.5% of adult emergency admissions were due to drug-related events (n = 1225). Between 0.7% and 2.3% of deaths following adverse events were attributed to treatment in primary care. A large proportion of adverse events resulting in the most severe harm may be preventable. For example, one study estimated that 42% of serious adverse drug events were avoidable. Conclusions. There is limited use of routinely collected data to measure adverse events in primary care despite large volumes of data generated. The potential for using readily available data recorded in primary care for active patient safety surveillance needs further exploration.

Keywords: Admission, Adult, Adverse Drug Events, Adverse Events, Ambulatory Care, Ambulatory-Care, Author, Care, Citations, Cochrane, Computerized, Countries, Databases, Drug, Emergency, England, English, Errors, Feasibility, General Practice, Health, Health Care, Iatrogenic Disease, Indicators, Information, isi, isi Web of Science, Literature, Literature Review, Medical Records Systems, Medline, Methods, Older Persons, Outcomes, Patient Outcomes, Primary, Primary Care, Quality, Research, Review, Safety, Science, Screening, Surveillance, Treatment, Visits, Web of Science, Web-of-Science, Websites

# Title: Faraday Discussions

Full Journal Title: [Faraday Discussions](http://xlink.rsc.org/jumptojournal.cfm?journal_code=FD)

ISO Abbreviated Title: Faraday Discuss.

JCR Abbreviated Title: Faraday Discuss

ISSN: 0301-7249

Issues/Year: 2

Journal Country/Territory: England

Language: English

Publisher: Royal Soc Chemistry

Publisher Address: Thomas Graham House, Science Park, Milton Rd, Cambridge CB4 0WF, Cambs, England

Subject Categories:

Chemistry, Physical: Impact Factor 3.861, / (2000)

? Gileadi, E. (1973), Combined adsorption-isotherm for intermediates formed in electrode-reactions. *Faraday Discussions*, **56**, 228-234.

? Lucassen, J. (1975), Adsorption-kinetics in micellar systems. *Faraday Discussions*, **59**, 76-87.

# Title: Faraday Society of London, Transactionsc

(Faraday Society, Transactions) (Trans. Faraday Soc.)

Full Journal Title: Faraday Society of London, Transactionsc

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Taylor, H.S. and Ogden, G. (1934), The adsorption of hydrogen and of carbon momoxide on a surface of zinc and molybdenum oxides. *Faraday Socidty of London*, *Transactions*, **30**, 1178-1190.

Lottermoser, A. (1935), The influence of atmospheric carbonic acid upon the surface tension of aqueous solutions of sodium salts of fatty acids. *Faraday Socidty of London*, *Transactions*, **31**, 200-208.

Adam, N.K. and Shute, H.L. (1938), Anomalies in the suraface tension of paraffin chain salts. *Faraday Socidty of London*, *Transactions*, **34**, 758-765.

? Kembal, C., Rideal, E.K. and Guggenheim, E.A. (1948), ??. *Faraday Socidty of London*, *Transactions*, **44**, 952-??.

# Title: Farmatsevtychnyĭ Zhurnal

Full Journal Title: Farmatsevtychnyĭ Zhurnal

ISO Abbreviated Title:

JCR Abbreviated Title: Farm Zh

ISSN: 0014-8342

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Shuraeva, T.K. and Galenko, D.N. (1978), Scientometric approach to studying trends in the development of pharmacy. I. *Farmatsevtychnyĭ Zhurnal*, (2), 72-78.

Keywords: Approach, Development, Pharmacy, Trends

# Title: FASEB Journal

Full Journal Title: [FASEB Journal](http://www.fasebj.org/contents-by-date.0.shtml)

ISO Abbreviated Title: FASEB J.

JCR Abbreviated Title: FASEB J

ISSN: 0892-6638

Issues/Year: 14

Journal Country/Territory: United States

Language: English

Publisher: Federation Amer Soc Exp Biol

Publisher Address: 9650 Rockville Pike, Bethesda, MD 20814-3998

Subject Categories:

Biochemistry & Molecular Biology: Impact Factor 9.249, 18/310 (2000)

Biology Cell Biology: Impact Factor 9.249, / (2000)

? Song, M.K., Heng, M.C.Y., Rolandelli, R., Ament, M.E. and Heng, M.K. (1993), High zinc intake may cause colon cancer incidence. *FASEB Journal*, **7** (4), A733-A733.

Biagioli, M. (1998), The instability of authorship: Credit and responsibility in contemporary biomedicine. *FASEB Journal*, **12** (1), 3-16.

Full Text: [1998\Fas J12, 3.pdf](1998/Fas%20J12,%203.pdf)

Keywords: Medical-Research, Copyright, Integrity, Rights

? Igic, R. (2004), Can an outstanding research be done under less than ideal conditions? FASEB Meeting on Experimental Biology: Translating the Genome, April 17-21, 2004, Washington, District of Columbia, USA, *FASEB Journal*, **18** (4-5). Abst. 708.2.

Abstract: Great scientific discoveries rarely originate from small and poor countries. However, some researchers have been successful in this environment. For example, we shall outline the lives and achievements of three Yugoslav scientists who were active in the biomedical sciences: Laza K. Lazarevic (1851-1891), Ivan Djaja (1884-1957) and Pavao Stern (1913-1976). (Two Nobel laureates of Yugoslav origin, Leopold Ruzicka (1887-1976) and Vladimir Prelog (1906-1998), are not included here because their scientific contributions were mainly performed in Switzerland.) These successful scientists overcame the obstacles of wars and civil unrests. What do these researchers have in common? Lazarevic, Djaja, and Stern were trained in foreign and developed countries. Upon return home, they received sufficient support and were given the freedom to initiate an independent research program. Unfortunately, each generation in the former Yugoslavia is disturbed by at least one war. War and economic sanctions destroy, like a cancer, the normal functions of a society, and significantly damage scientific output (Scientometrics 2002;53:447- 452). New biomedical technologies are often expensive. Therefore, countries need to select the most promising and productive scientists. These decisions are especially challenging in small and war-torn countries.

? Evangelou, E., Trikalinos, T.A. and Ioannidis, J.P.A. (2005), Unavailability of online supplementary scientific information from articles published in major journals. *FASEB Journal*, **19** (14), 1943-1944.

Full Text: [2005\Fas J19, 1943.pdf](2005/Fas%20J19,%201943.pdf)

Abstract: Printed articles increasingly rely on online supplements to store critical scientific information, but such data may eventually become unavailable. We checked the current availability of online supplementary scientific information published in six top-cited scientific journals (Science, Nature, Cell, New England Journal of Medicine, Lancet, Proceedings of the National Academy of Sciences USA). Here we show that in 4.7% and 9.6% of articles with online supplementary material, some of the supplements became unavailable within 2 and 5 years of their publication, respectively.

Keywords: Broken Links, Internet, Publication, Scientific Journals, Supplementary Information, Web Page

? Falagas, M.E. and Kavvadia, P. (2006), “Eigenlob”: Self-citation in biomedical journals. *FASEB Journal*, **20** (8), 1039-1042.

Full Text: [2006\Fas J20, 1039.pdf](2006/Fas%20J20,%201039.pdf)

Keywords: Bias, Impact, Journals, Self-Citation

? Falagas, M.E., Kouranos, V.D., Arencibia-Jorge, R. and Karageorgopoulos, D.E. (2008), Comparison of SCImago journal rank indicator with journal impact factor. *FASEB Journal*, **22** (8), 2623-2628.

Full Text: [2008\Fas J22, 2623.pdf](2008/Fas%20J22,%202623.pdf)

Abstract: The application of currently available sophisticated algorithms of citation analysis allows for the incorporation of the “quality” of citations in the evaluation of scientific journals. We sought to compare the newly introduced SCImago journal rank (SJR) indicator with the journal impact factor (IF). We retrieved relevant information from the official Web sites hosting the above indices and their source databases. The SJR indicator is an open-access resource, while the journal IF requires paid subscription. The SJR indicator (based on Scopus data) lists considerably more journal titles published in a wider variety of countries and languages, than the journal IF (based on Web of Science data). Both indices divide citations to a journal by articles of the journal, during a specific time period. However, contrary to the journal IF, the SJR indicator attributes different weight to citations depending on the “prestige” of the citing journal without the influence of journal self-citations; prestige is estimated with the application of the PageRank algorithm in the network of journals. In addition, the SJR indicator includes the total number of documents of a journal in the denominator of the relevant calculation, whereas the journal IF includes only “citable” articles (mainly original articles and reviews). A 3-yr period is analyzed in both indices but with the use of different approaches. Regarding the top 100 journals in the 2006 journal IF ranking order, the median absolute change in their ranking position with the use of the SJR indicator is 32 (1st quartile: 12; 3rd quartile: 75). Although further validation is warranted, the novel SJR indicator poses as a serious alternative to the well-established journal IF, mainly due to its openaccess nature, larger source database, and assessment of the quality of citations.

Keywords: Algorithm, Algorithms, Alternative, Analysis, Application, Assessment, Bias, Bibliographic Databases, Bibliometric Analysis, Calculation, Citation, Citation Analysis, Citations, Data, Database, Databases, Editors, English, Evaluation, Impact, Impact Factor, Indicator, Indices, Information, Journal, Journal Impact, Journals, Language, Languages, Mathematical Computing, Network, Open Access, Publication, Quality, Quality of, Quality of Publications, Rank, Ranking, Reviews, Science, Scientific Journals, Scientometrics, Scopus, Self-Citation, Self-Citations, Source, Trends, Validation, Web of Science

? Trikalinos, T.A. (2009), Does it mean anything if your own name is wrong in your published paper? *FASEB Journal*, **23** (8), 2345-2348.

Full Text: [2009\Fas J23, 2345.pdf](2009/Fas%20J23,%202345.pdf)

Abstract: Journals instruct authors to proofread their accepted manuscripts before signing them off for publication and expect them to submit errata to correct any mistakes identified thereafter. Herein, I examine papers with obvious errors in the author name list. I queried PubMed for papers under common Greek forenames looking for citations where author surnames and forenames are swapped. I identified 113 such papers from 101 journals. Author names are corrected with errata only in 20, after a median of 6.5 mo. Time to name correction is shorter for journals with impact factor above the median (P=0.015). To further explore this suggested association of apparent author sloppiness with journal impact, I use as controls all errata published between 1996 and 2008 in 5 top-cited general medical journals (New England Journal of Medicine, JAMA, The Lancet, Annals of Internal Medicine, and British Medical Journal); 3.4% of the latter contain name corrections (vs. 18.1% of all errata in the 101 journals during the same period, P<10(-6)). Egregious errors may be markers of cursory if any proofreading and, therefore, markers for additional unidentified inaccuracies. In addition, I wonder whether authors may be as reluctant to rectify other, nonobvious (yet potentially consequential) mistakes after a paper’s publication. -Trikalinos, T. A. Does it mean anything if your own name is wrong in your published paper? FASEB J. 23, 2345-2348 (2009).

Keywords: Citations, Errata, Errors, Galley Proofs, Impact Factor, Journal, Medical Journals, Proofs, Publication, Sloppiness

? Ioannidis, J.P.A. (2010), Is there a glass ceiling for highly cited scientists at the top of research universities? *Faseb Journal*, **24** (12), 4635-4638.

Full Text: [2010\Fas J24, 4635.pdf](2010/Fas%20J24,%204635.pdf)

Abstract: University leaders aim to protect, shape, and promote the missions of their institutions. I evaluated whether top highly cited scientists are likely to occupy these positions. Of the current leaders of 96 U. S. high research activity universities, only 6 presidents or chancellors were found among the 4009 U. S. scientists listed in the ISIHighlyCited.com database. Of the current leaders of 77 UK universities, only 2 vice-chancellors were found among the 483 UK scientists listed in the same database. In a sample of 100 top-cited clinical medicine scientists and 100 top-cited biology and biochemistry scientists, only 1 and 1, respectively, had served at any time as president of a university. Among the leaders of 25 U. S. universities with the highest citation volumes, only 12 had doctoral degrees in life, natural, physical or computer sciences, and 5 of these 12 had a Hirsch citation index m < 1.0. The participation of highly cited scientists in the top leadership of universities is limited. This could have consequences for the research and overall mission of universities.-Ioannidis, J. P. A. Is there a glass ceiling for highly cited scientists at the top of research universities? FASEB J. 24, 4635-4638 (2010). www.fasebj.org.

Keywords: 5 Futures, Academic Medicine, Biology, Citation, Citation Impact, Citation Index, Citations, h-Index, Leaders, Leaders, Research, University

? Davis, P.M. (2011), Open access, readership, citations: A randomized controlled trial of scientific journal publishing. *FASEB Journal*, **25** (7), 2129-2134.

Full Text: [2011\Fas J25, 2129.pdf](2011/Fas%20J25,%202129.pdf)

Abstract: Does free access to journal articles result in greater diffusion of scientific knowledge? Using a randomized controlled trial of open access publishing, involving 36 participating journals in the sciences, social sciences, and humanities, we report on the effects of free access on article downloads and citations. Articles placed in the open access condition (n = 712) received significantly more downloads and reached a broader audience within the first year, yet were cited no more frequently, nor earlier, than subscription-access control articles (n = 2533) within 3 yr. These results may be explained by social stratification, a process that concentrates scientific authors at a small number of elite research universities with excellent access to the scientific literature. The real beneficiaries of open access publishing may not be the research community but communities of practice that consume, but rarely contribute to, the corpus of literature.-Davis, P. M. Open access, readership, citations: a randomized controlled trial of scientific journal publishing. FASEB J. 25, 2129-2134 (2011). www.fasebj.org.

Keywords: Articles, Authors, Bibliometric Analysis, Citations, Downloads, Impact, Journal, Journal Publishing, Journals, Literature, Open Access, Publishing, Research, Science, Science Communication, Scientific Journal, Social Sciences, Usage Statistics, Web

# Title: FEBS Journal

Full Journal Title: [FEBS Journal](http://www3.interscience.wiley.com/journal/119877016/tocgroup)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kuzu, H., Altikatoglu, M., Celebi, M. and Ozlotan, O. (2008), Degradation of dyes with HRP and its dextran conjugate. *FEBS Journal*, **275** (S1), 410.

Full Text: [2008\FEB J275, 410.pdf](2008/FEB%20J275,%20410.pdf)

Abstract: Introduction: Dyes are hazardous aromatic compounds, which are normally used for coloration of various substrates like leather, textiles, papers, etc. Enzymatic treatment is very useful due to the action of enzymes on pollutants even when they are present in very dilute solutions and recalcitrant to the action of various microbes participating in the degradation of dyes. The potential of the peroxidase enzymes has been widely studied in the decolorization and degradation of dyes [1]. Methods: Dye removal by HRP-Dextran conjugate (nE/nD: 1/10) and purified HRP at different pHs (3, 4, 5, 6, 7, 8) and temperatures (25, 30, 35, 40, 50, 60, 70°C) were studied. After keeping them for 0, 1, 2, 3, 4, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60 minutes and recorded absorbtion values were evaluated. The degradation of dye molecules (naphthol blue black dye and Coomassie Brillant Blue R 250) with purified and conjugated HRP were monitored by recording absorption values at 620 nm and 550 nm respectively. Results: The decrease at 620 nm and 550 nm depending on time were different for enzyme and conjugate for various assay conditions. Conclusion: After 1 hour approximately 90% bleaching was observed.

# Title: FEBS Letters

Full Journal Title: FEBS Letters

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Korshunov, S.S., Skulachev, V.P. and Starkov, A.A. (1997), High protonic potential actuates a mechanism of production of reactive oxygen species in mitochondria. *FEBS Letters*, **416** (1), 15-18.

Full Text: [1997\FEBS Let416, 15.pdf](1997/FEBS%20Let416,%2015.pdf)

Abstract: Formation of H2O2 has been studied in rat heart mitochondria, pretreated,vith H2O2 and aminotriazole to lower their antioxidant capacity. It is shown that the rate of H2O2 formation by mitochondria oxidizing 6 mM succinate is inhibited by a protonophorous uncoupler, ADP and phosphate, malonate, rotenone and myxothiazol, and is stimulated by antimycin A. The effect of ADP is abolished by carboxyatractylate and oligomycin. Addition of uncoupler after rotenone induces further inhibition of H2O2 production. Inhibition of H2O2 formation by uncoupler, malonate and ADP+P-i is shown to be proportional to the Delta Psi decrease by these compounds. A threshold Delta Psi value is found, above which a very strong increase in H2O2 production takes place. This threshold slightly exceeds the state 3 Delta Psi level, The data obtained are in line with the concept [Skulachev, V.P., Q. Rev. Biophys. 29 (1996), 169-202] that a high proton motive force in state 4 is potentially dangerous for the cell due to an increase in the probability of superoxide formation. (C) 1997 Federation of European Biochemical Societies.

Keywords: Cells, Cytochrome-C, Hydrogen-Peroxide, Mitochondria, Probe, Protonic Potential, Rat, Reactive Oxygen Species, Safranine, Science, Systems, Uncoupling

# Title: Federal Probation

Full Journal Title: Federal Probation

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Corbett, R.P. and Harris, M.K. (1997), A review of research for practitioners: Our “Top Ten” list of books and articles in 1996. *Federal Probation*, **61** (3), 63-70.

Full Text: Fed Pro61, 63.pdf

Keywords: Articles, Books, Research, Review

# Title: Federation Proceedings

Full Journal Title: Federation Proceedings

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Boyle, A.J., Mosher, R.E., Clarke, N.E. and Mccann, D.S. (1961), Chelation therapy in circulatory and sclerosing diseases. *Federation Proceedings*, **20** (3), 243-252.

? Perry, H.M. (1961), Chelation therapy in circulatory and sclerosing diseases. *Federation Proceedings*, **20** (3), 254-257.

# Title: FEMS Microbiology Ecology

Full Journal Title: [FEMS Microbiology Ecology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=4928&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=1265e0c13fd5b3742a383d89103ff045)

ISO Abbreviated Title: FEMS Microbiol. Ecol.

JCR Abbreviated Title: FEMS Microbiol Ecol

ISSN: 0168-6496

Issues/Year: 12

Journal Country/Territory: Netherlands

Language: English

Publisher: Elsevier Science BV

Publisher Address: PO Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Microbiology: Impact Factor

Byrd, J.J. and Colwell, R.R. (1993), Long-term survival and plasmid maintenance of *Escherichia* *coli* in marine microcosms. *FEMS Microbiology Ecology*, **12** (1), 9-14.

Full Text: [F\FEM Mic Eco12, 9.pdf](F/FEM%20Mic%20Eco12,%209.pdf)

Abstract: The survival pattern and plasmid maintenance of *Escherichia coli* was examined in an artificial seawater microcosm. It was found that the three strains of *E. coli* (EK3C, H10407 and 34309) included in the study were able to maintain a portion of cells in the culturable phase for at least 3 years in artificial seawater. Along with retaining culturability, that portion of the cell population also maintained their indigenous plasmids over the 3-year period. It is concluded that cells of *E. coli* maintaining culturability in seawater are selectively adapted to the salinity of seawater, remaining in a culturable state. The results of the study are significant in that it has been assumed by many public health authorities that *E. coli* cannot survive, without nutrient addition, in seawater for long periods of time, i.e., years of exposure to seawater.

Keywords: Long-Term Survival, Plasmid Maintenance, Survival of *Escherichia Coli*

# Title: FEMS Microbiology Letters

Full Journal Title: [FEMS Microbiology Letters](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=4929&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=cfc39ccbc66ce70127b3f5b2414d4b5c)

ISO Abbreviated Title: FEMS Microbiol. Lett.

JCR Abbreviated Title: FEMS Microbiol Lett

ISSN: 0378-1097

Issues/Year: 24

Journal Country/Territory: Netherlands

Language: Multi-Language

Publisher: Elsevier Science BV

Publisher Address: Po Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Microbiology: Impact Factor 1.615, 39/83 (2000)

Savvaidis, I., Hughes, M.N. and Poole, R.K. (1992), Differential pulse polarography: A method of directly measuring uptake of metal ions by live bacteria without separation of biomass and medium. *FEMS Microbiology Letters*, **92** (2), 181-186.

Full Text: [F\FEMS Mic Let92, 181.pdf](F/FEMS%20Mic%20Let92,%20181.pdf)

Abstract: The technique of differential pulse polarography is shown here for the first time to be applicable to monitoring directly the uptake of metal ions from solution by live bacteria in the chamber of the polarograph. The potential at which the polarographic current peak is observed is characteristic of the metal, whereas peak height is proportional to metal concentration. Adding solutions of Cd(II) or Zn(II) to a suspension of *Pseudomonas cepacia* in 50 mM Hepes buffer (pH 7.4) in the chamber gave polarographic peaks of lower amplitude than those observed when these metal solutions were added to buffer alone, due to metal binding or uptake by cells. Langmuir plots gave binding capacities of 0.13 and 0.20 mmol metal (Dd or Zn, respectively) per g (dry weight) biomass. Ni(II) uptake was biphasic. Metal uptake increased with pH. The value of polarography for rapid assessment of metal removal by cells and the ability to measure uptake from multi-metal solutions is demonstrated.

Keywords: Biosorption, *Pseudomonas*, Copper, Cadmium, Zinc, Nickel

? Heiss, G.S., Gowan, B. and Dabbs, E.R. (1992), Cloning of DNA from a *Rhodococcus* strain conferring the ability to decolorize sulfonated azo dyes. *FEMS Microbiology Letters*, **99** (2-3), 221-226.

Full Text: [1992\FEMS Mic Let99, 221.pdf](1992/FEMS%20Mic%20Let99,%20221.pdf)

Abstract: Azo dyes are recalcitrant pollutants. Two sulfonated azo dyes, Orange II and Amido black, are effectively decolorized by certain nocardioform strains of the genus Rhodococcus. A mutant of one of these strains was isolated which had lost azo-dye decolorizing ability and the strain was used to clone DNA conferring this ability, by screening a BclI library constructed from DNA of a decolorizing strain. The relevant genetic information was located on a 6.3-kb fragment of DNA.

Keywords: Azo Dye Decolorization, Degradation of Xenobiotics, DNA Cloning, Rhodococcus, Nocardioforms, Microbial Reduction, Orange-II, Degradation

Garfield, E. and Welljamsdorof, A. (1992), The microbiology literature: Languages of publication and their relative citation impact. *FEMS Microbiology Letters*, **100** (1-3), 33-37.

Full Text: [F\FEMS Mic Let100, 33.pdf](F/FEMS%20Mic%20Let100,%2033.pdf)

Abstract: This study examined trends in the number of papers published annually in various languages in 78 microbiology journals indexed in the Science Citation Index(R) (SCI(R)), 1981-1991. Trends in the average number of citations per paper (impact) for each language were also tracked. In addition, interlingual citation patterns were examined. The results showed that English is the lingua franca of microbiology research, accounting for 90-95 percent of all SCI-indexed papers in this time period. Also, the impact of English-language papers was greater than that of other languages by factors ranging from 2.4 to 14.4. Lastly, the majority of citations to papers published in English, German, French, or Italian were from English-language papers. The exception were papers in Russian: more than 90 percent of citations they received were from Russian-language papers.

Keywords: Citation Analysis, Science Citation Index, Language Trends, Impact Trends, Scientometrics

Conneely, A., Smyth, W.F., and McMullan, G. (1999), Metabolism of the phthalocyanine textile dye remazol turquoise blue by *Phanerochaete chrysosporium*. *FEMS Microbiology Letters*, **179** (2), 333-337.

Full Text: [F\FEMS Mic Let179, 333.pdf](F/FEMS%20Mic%20Let179,%20333.pdf)

Abstract: The ability of a strain of Phanerochaete chrysosporium to decolourise the commercially important copper-phthalocyanine dye Remazol turquoise blue was investigated. The fungus was found to completely decolourise the dye at a concentration of 200 mg l−1 within 7 days. High performance liquid chromatography (HPLC) and polarographic analysis of culture supernatants indicated that degradation of the dye structure was occurring with the detection of one major organic breakdown product and the release of up to 50% dye-bound copper into culture supernatants during decolourisation. Biosorption of copper to the fungal biomass was found to occur during the initial stages of dye decolourisation.

Keywords: Textile Dye, Bioremediation, Phanerochaete Chrysosporium

? Kwon, H.K., Woo, S.H. and Park, J.M. (2002), Degradation of tetracyanonickelate(II) by *Cryptococcus humicolus* MCN2. *FEMS Microbiology Letters*, **214** (2), 211-216.

Full Text: [F\FEMS Mic Let214, 211.pdf](F/FEMS%20Mic%20Let214,%20211.pdf)

Abstract: A new yeast strain capable of degrading free and metallocyanides was isolated from coke-plant wastewater. The isolated strain designated MCN2 was identified as Cryptococcus humicolus by 26S rDNA sequencing and phylogenetic analysis. During growth of the isolate with KCN as a sole nitrogen source, formamide and formic acid were found as transient intermediates by [C-13]nuclear magnetic resonance analysis and ammonia accumulated as a final product in the culture medium. The strain MCN2 could degrade high concentrations of tetracyanonickelate (II) (K2Ni(CN)4, TCN) up to 65 mM CN within 60 h when a sufficient amount of glucose was supplied as a carbon source. The maximal degradation rate of TCN was 2.5 mM CN h-1 at the initial concentration of 51 mM CN. (C) 2002 Federation of European Microbiological Societies. Published by Elsevier Science B.V. All rights reserved.

Keywords: Biodegradation, Biodegradation, Coke Plant Wastewater, Coke-Plant Wastewater, Cryptococcus Humicolus, Cyanide, Cyano Complex Tetracyanonickelate(II), Degradation, Enzyme, Fusarium-Solani, Growth, Metabolism, Nitrogen, Pseudomonas-Fluorescens, Strain, Tetracyanonickelate, Wastewater

# Title: FEMS Microbiology Reviews

Full Journal Title: [FEMS Microbiology Reviews](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=4939&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=dfcba2fc2f95c61acc27a3de0220bacf); [FEMS Microbiology Reviews](http://www3.interscience.wiley.com/journal/118494448/home)

ISO Abbreviated Title: FEMS Microbiol. Rev.

JCR Abbreviated Title: FEMS Microbiol Rev

ISSN: 0168-6445

Issues/Year: 4

Journal Country/Territory: Netherlands

Language: Multi-Language

Publisher: Elsevier Science BV

Publisher Address: Po Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Microbiology: Impact Factor 6.367, / (2000)

? Alibhai, K.A.K., Dudeney, A.W.L., Leak, D.J., Agatzini, S. and Tzeferis, P. (1993), Bioleaching and bioprecipitation of nickel and iron from laterites. *FEMS Microbiology Reviews*, **11** (1-3), 87-96.

Full Text: [1993\FEMS Mic Rev11, 87.pdf](1993/FEMS%20Mic%20Rev11,%2087.pdf)

Abstract: Leaching of silicate ores, particularly nickel laterites, with the aid of heterotrophic organisms has been briefly reviewed. Samples of laterite ores from Greece were characterised mineralogically and a number of microorganisms isolated from them. One of these organisms (code F1) was successfully acclimatized to 6400 ppm nickel. Samples of the high-grade Greek Kastoria nickel laterite were leached with sulphuric acid and a number of organic acids. Sulphuric and citric acids extracted over 60 and 40% of the contained nickel, respectively, but the other acids employed were less efficient leachants. Oxalic acid precipitated nickel oxalate. Roughly the same extraction of iron was observed. The main leaching parameter was confirmed to be hydrogen ion concentration, although complexation with organic anions was a contributor. Organism F1 (a strain of Penicillium) was used in comparison with organisms from various culture collections to bioleach nickel from samples of the low-grade Greek Litharakia nickel laterite. The organisms were cultivated in a mixture of a sugar-based nutrient mineral medium and finely ground ore. Several penicillia and aspergilli leached 55-60% of the contained nickel and cobalt, and 25-35% of the iron when sucrose was the carbon source, but Fl was not efficient. However, in molasses medium, Fl extracted nearly 40% of the nickel. Biosorption and bioprecipitation reactions were observed. The mechanism of bioleaching or in situ leaching is discussed in terms of close physical and chemical association between the fungal hyphae and mineral phases in the ore. This accounted for the low overall hydrogen ion concentration observed during bioleaching.

Keywords: Acids, Bioacids, Bioleaching, Cobalt, Heterotrophic Fungi, In-Situ Leaching, Laterite, Nickel, Sulphuric Acid

Volesky, B. (1994), Advances in biosorption of metals: Selection of biomass types. *FEMS Microbiology Reviews*, **14** (4), 291-302.

Full Text: [F\FEMS Mic Rev14, 291.pdf](F/FEMS%20Mic%20Rev14,%20291.pdf)

Abstract: Within the past decade, the potential of metal biosorption has been well established. For economic reasons, of particular interest are abundant biomass types either generated as a waste by-product of large-scale industrial fermentations or certain metal-binding algae found in large quantities in the sea. Some of these high metal-sorbing biomass types serve as a basis for newly developed metal biosorption processes foreseen particularly as a very competitive means for detoxification of metal-bearing industrial effluents. Ions of lead and cadmium, for instance, have been found to be bound very efficiently from very dilute solutions by the dried biomass of some ubiquitous brown marine algae such as Ascophyllum and Sargassum which accumulate more than 30% of biomass dry weight in the metal. Mycelia of industrially steroid-transforming fungi Rhizopus and Absidia are excellent biosorbents lbr lead, cadmium, copper, zinc, and uranium, binding also other heavy metals up to 25% of the biomass dry weight. The common yeast *Saccharomyces cerevisiae* is a ‘mediocre’ metal biosorbent. Construction of biosorption isotherm curves serves as a basic technique assisting in evaluation of the metal uptake by different biosorbents. The methodology is based on batch equilibrium sorption experiments extensively used for screening and quantitative comparison of new biosorbent materials. Experimental methodologies used in the study of biosorption and selected recent research results demonstrate the route to novel biosorbent materials some of which can even be repeatedly regenerated for re-use.

Keywords: Biosorption, Microbial Biomass, Metal Binding, Heavy Metals, Sorption; Wastewater Detoxification, Metal Removal, Biomass Use

? Fourest, E., Canal, C. and Roux, J.C. (1994), Improvement of heavy metal biosorption by mycelial dead biomasses (*Rhizopus arrhizus*, *Mucor miehei* and *Penicillium chrysogenum*): pH control and cationic activation. *FEMS Microbiology Reviews*, **14** (4), 325-332.

Full Text: [1994\FEMS Mic Rev14, 325.pdf](1994/FEMS%20Mic%20Rev14,%20325.pdf)

Abstract: Fungal mycelial by-products from fermentation industries present a considerable affinity for soluble metal ions (e.g. Zn, Cd, Ni, Pb, Cr, Ag) and could be used in biosorption processes for purification of contaminated effluents. In this work the influence of pH on sorption parameters is characterized by measuring the isotherms of five heavy metals (Ni, Zn, Cd, Ag and Pb) with Rhizopus arrhizus biomass under pH-controlled conditions. The maximum sorption capacity for lead was observed at pH 7.0 (200 mg g-1), while silver uptake was weakly affected. The stability of metal-biosorbent complexes is regularly enhanced by pH neutralization, except for lead. A transition in sorption mechanism was observed above pH 6.0. In addition, comparison of various industrial fungal biomasses (R. arrhizus, Mucor miehei and Penicillium chrysogenum) indicated important variations in zinc-binding and buffering properties (0.24, 0.08 and 0.05 mmol g-1, respectively). Without control, the equilibrium pH (5.8, 3.9 and 4.0) is shown to be related to the initial calcium content of the biosorbent. pH neutralization during metal adsorption increases zinc sorption in all fungi (0.57, 0.52 and 0.33 mmol g-1) but an improvement was also obtained (0.34, 0.33 and 0.10 mmol g-1) by calcium saturation of the biomass before heavy metal accumulation. Breakthrough curves of fixed bed biosorbent columns demonstrated the capacity of the biosorbent process to purify zinc and lead solutions in continuous-flow systems, and confirmed the necessity for cationic activation of the biosorbent before contact with the heavy-metal solution.

Keywords: Rhizopus Arrhizus, Biosorption, Ion-Exchange, Heavy Metal Removal, Mucor Miehei, Penicillium Chrysogenum, Waste Water Purification, Fungal By-Products, Biosorbents, Recovery

Sánchez, A., Ballester, A., Blázquez, M.L., González, F., Muñoz, J. and Hammaini, A. (1999), Biosorption of copper and zinc by *Cymodocea* *nodosa*. *FEMS Microbiology Reviews*, **23** (5), 527-536.

Full Text: [F\FEMS Mic Rev23, 527.pdf](F/FEMS%20Mic%20Rev23,%20527.pdf)

Abstract: The adsorption of the two metal ions Cu and Zn in a single-component system by *Cymodocea nodosa*, a brown alga, under different pH conditions was investigated. The solution pH significantly affected the exhibited uptake, being maximum at a pH value of 3.5. Multi-component mixture biosorption in aqueous solutions is also reported. A comparison was made between the single-component saturation uptake and the multi-component uptakes. To evaluate the two-metal sorption system performance, simple isotherm curves had to be replaced by three-dimensional sorption isotherm surfaces. In order to describe the isotherm surfaces mathematically, three Langmuir-type models were evaluated. The isotherms indicate a competitive uptake with Cu being preferentially adsorbed. In addition, different tests were carried out to compare the process efficiency working continuously in small columns. (C) 1999 Federation of European Microbiological Societies. Published by Elsevier Science B.V. All rights reserved.

Keywords: Biosorption, *Cymodocea Nodosa*, Copper, Zinc, Wastewater Treatment, Biomass

Cervantes, C., Campos-García, J., Devars, S., Gutiérrez-Corona, F., Loza-Tavera, H., Torres-Guzmán, J.C. and Moreno-Sánchez, R. (2001), Interactions of chromium with microorganisms and plants. *FEMS Microbiology Reviews*, **25** (3), 335-347.

Full Text: [F\FEMS Mic Rev25, 335.pdf](F/FEMS%20Mic%20Rev25,%20335.pdf)

Abstract: Chromium is a highly toxic non-essential metal for microorganisms and plants. Due to its widespread industrial use, chromium (Cr) has become a serious pollutant in diverse environmental settings. The hexavalent form of the metal, Cr(VI), is considered a more toxic species than the relatively innocuous and less mobile Cr(III) form. The presence of Cr in the environment has selected microbial and plant variants able to tolerate high levels of Cr compounds. The diverse Cr-resistance mechanisms displayed by microorganisms, and probably by plants, include biosorption, diminished accumulation, precipitation, reduction of Cr(VI) to Cr(III), and chromate efflux. Some of these systems have been proposed as potential biotechnological tools for the bioremediation of Cr pollution. In this review we summarize the interactions of bacteria, algae, fungi and plants with Cr and its compounds.

Keywords: Chromium Transport, Chromium Toxicity, Chromate Reduction, Chromium Resistance, Bioremediation

# Title: FEMS Symposium 12

? Meyer, U. (1981), Biodegradation of synthetic organic colorants. In: Leisinger, T., Cook, A.M., Hutter, R., Nuesch, J. (eds) Microbial Degradation of Xenobiotic and Recalcitrant Compounds. FEMS Symposium 12, Academic Press, London, pp 371-385.

# Title: Fertility and Sterility

Full Journal Title: [[Fertility and Sterility](http://www.sciencedirect.com/science/journal/00150282)](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5033&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=75b5636261386c9def249a79872b7ed6)

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Publisher: Elsevier Science Inc

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Subject Categories:

Obstetrics & Gynecology Reproductive Biology: Impact Factor

? Bobick, J.E. (1981), Citation data for selected journals in reproductive-biology. *Fertility and Sterility*, **35** (2), 126-130.

? Barbieri, R.L. (1986), Citation analysis for the journal, *Fertility and Sterility*. *Fertility and Sterility*, **45** (6), 892-893.

? Key, J.D. and Kempers, R.D. (1987), Citation-classics - most-cited articles from *Fertility and Sterility*. *Fertility and Sterility*, **47** (6), 910-915.

? Andrews, F.M., Abbey, A. and Halman, L.J. (1992), Is fertility-problem stress different: The dynamics of stress in fertile and infertile couples. *Fertility and Sterility*, **57** (6), 1247-1253.

Abstract: Objective: To compare the dynamics of fertility-problem stress experienced by wives and husbands in infertile couples with the dynamics of stress from other sources experienced by members of couples presumed to be fertile. Design: Relationships of stress to four marriage factors and four aspects of life quality (subjective well-being) are examined within a causal modeling framework using data from structured interviews. Setting: Face-to-face interviews were conducted in study participants’ homes. Participants: Wives and husbands from 157 couples with primary infertility and from 82 presumed-fertile couples were studied. Main Outcome Measures: Final outcome measures were four multi-item scales assessing life quality with regard to the marriage, own self-efficacy, own health and appearance, and life as a whole. Intervening outcome scales measured four marriage factors: marital conflict, sexual self-esteem, sexual dissatisfaction, and frequency of intercourse. Results and Conclusions: Higher levels of stress, regardless of whether that stress was from attempting to solve a fertility problem or another problem, were related to reduced marital functioning and decreased life quality. For husbands, the strengths of the linkages did not depend on the source of the stress. For wives, however, the causal model suggested that fertility-problem stress had stronger negative impacts on sense of sexual identity and self-efficacy than did stress from other problems (P < 0.05). Stress from any source had more impact on the lives of wives than of husbands, more impact on satisfaction with self and general well-being than on satisfaction with the marriage or health, and affected life quality mostly indirectly through its impacts on the marriage factors.

Keywords: Stress, Infertility, Life Quality, Subjective Well-Being, Marriage Factors, Psychosocial Factors

Kempers, R.D. (2002), Ethical issues in biomedical publications. *Fertility and Sterility*, **77** (5), 883-888.

Full Text: [2002\Fer Ste77, 883.pdf](2002/Fer%20Ste77,%20883.pdf)

Abstract: Peer-reviewed biomedical journals are expected to publish accurate and important information. In the process, numerous ethical issues may arise from within both the editorial and research communities. This paper will focus on four general ethical issues—authorship, peer review, duplicate or repetitive publication, and conflict of interest. Issues of authorship include multiple authorship, misconduct among coauthors, guest and honorary authorship, order of authorship, and credit for those not qualifying for authorship. Peer review attempts to ensure that what is published is valid. Peer review ethical issues include confidentiality of the manuscript, potential editor and reviewer bias, and conflict of interest on the part of the reviewer. Duplicate or repetitive publication, in which the same information is reported two or more times, can damage a journal’s reputation for publishing new and important information and can waste its resources. Conflicts of interest, in which financial and personal considerations may affect the investigator’s personal judgment, can seriously damage the integrity of the author and of the journal. Increased awareness of these ethical issues should stimulate everyone to take an active role in promulgating and enforcing the highest ethical standards in biomedical publications.

Keywords: Biomedical Publishing, Peer Review, Duplicate Publishing, Publishing Ethics

? Yang, H. and Pan, B.C. (2006), Citation classics in *Fertility and Sterility*, 1975-2004. *Fertility and Sterility*, **86** (4), 795-797.

Full Text: [2006\Fer Ste86, 795.pdf](2006/Fer%20Ste86,%20795.pdf)

Abstract: The Science Citation Index of the Institute for Scientific Information was searched to identify the 102 most frequently cited articles in the Fertility and Sterility journal for the past 30 years. Identification of the citation classic articles provides resourceful perspectives on the evolution of Fertility and Sterility and reproductive medicine.

Keywords: Citation, Evolution, Institute for Scientific Information, Journal, Medicine, Science Citation Index

? González-Alcaide, G., Aleixandre-Benavent, R., Navarro-Molina, C. and Valderrama-Zurián, J.C. (2008), Coauthorship networks and institutional collaboration patterns in reproductive biology. *Fertility and Sterility*, **90** (4), 941-956.

Full Text: [2008\Fer Ste90, 941.pdf](2008/Fer%20Ste90,%20941.pdf)

Abstract: Objective: Reproductive biology is a highly productive area. By analyzing papers published in the major journals in the period 2003-2005, the collaborative patterns were characterized. Design: Original research papers published in 2004 in the journals included in the first quartile of the category “Reproductive Biology” of the Journal Citation Reports (2005) were selected. A bibliometric analysis was carried out with the information obtained, thus building up the networks of coauthorship and institutional collaboration. Result(s): A total of 4,702 papers were analyzed, 96.75% signed in collaboration by two or more authors, the authors per paper index being 5.24; 73.73% of the papers were collaborations between institutions. The U.S.A. and the U.K. headed the absolute productivity ranking in number of papers, and adapting the data with respect to the population, Israel, Australia, and other European countries, such as Finland, Belgium, Sweden, and The Netherlands, had notable contributions. Conclusion(s): We identified the networks of authors who publish in the journals with the greatest impact factor. Only some of the most productive institutions have consolidated collaborative relationships with other institutions. We identified the scientific “isolation” of some countries which, although their productivity is high, have a small number of international collaborations.

Keywords: Analysis, Analysis of Social Networks, Australia, Authors, Belgium, Bibliometric, Bibliometric Analysis, Biology, Building, Coauthorship, Collaboration, Collaborations, Data, Finland, First, Impact, Impact Factor, Index, Information, Institutions, International, Israel, Journal Citation Reports, Journals, Networks, Papers, Population, Productivity, Ranking, Reproductive Biology, Research, Scientific Collaboration, Scientific Publications, Small, Society, Sweden, The Netherlands

# Title: Fertilizer Research

Full Journal Title: Fertilizer Research

ISO Abbreviated Title:

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ISSN:

Issues/Year:

Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

Impact Factor

? Xiong, L.M. (1995), Influence of phosphate on cadmium adsorption by soils. *Fertilizer Research*, **40** (1), 31-40.

Full Text: [1995\Fer Res40, 31.pdf](1995/Fer%20Res40,%2031.pdf)

Abstract: In batch equilibrium experiments, it was found that orthophosphate increased Cd adsorption and decreased its desorption by three representative soils. Ion activity products in the equilibrium solution indicated that cadmium activity was under saturated with respect to Cd-3(PO4) (a) on the Red earth(Typic Hapludult) and the Yellow-brown earth(Typic Hapludalf). With the calcareous Yellow fluvo-aquic soil(Typic Haplaquent), phosphate enhanced Cd adsorption at lower Cd concentration but it decreased the adsorption at high Cd level. Ion activity products and solubility diagrams suggested that at high Cd level Cd-3(PO4)2 had formed and the activity of Cd in solution was controlled by this precipitate. This implies that the formation of Cd-3(PO4)2(s) is unable to decrease Cd activity so long as soil adsorption sites are unsaturated by Cd. It is suggested from these results that one could not expect decreasing soil Cd availability by phosphate fertilization unless a simultaneous rise in soil pH also occurs.

Keywords: Cadmium, Ion Activity Products, Isotherm, Phosphate, Soil Pollution, Solubility Diagram

# Title: Festschrift W. Nernst

Full Journal Title: Festschrift W. Nernst

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Arndt, K. and Schraube, G. (1912), Adsorption by heated charcoal. *Festschrift W. Nernst*, 46-52.

Abstract: Carbon dioxide and CO are shown to be both adsorbed by carefully purified wood charcoal, Co/sub 2/ being the more readily adsorbed, and the volume ratio of the adsorbed gas being, at the ordinary temperature, 3.4:1. If the gas adsorbed by charcoal from a mixture of CO/sub 2/ and CO is removed in successive fractions, the ratio of CO/sub 2/ to Co increases very considerably in the later fractions, a similar variation in the ratio being also found in the successive fractions obtained from charcoal placed in CO/sub 2/ for several hours at 750-800 degrees, indicating that the adsorbed gas is under considerable pressure, which tends to displace the equilibrium between C, CO, and CO/sub 2/ in favour of the CO/sub 2/. Similar results are obtained by placing the charcoal in a mixture of CO/sub 2/ and N at 200°, 800°, and 400°.

Keywords: Equilibrium, Temperature

# Title: Fette Seifen Anstrichmittel Verbunden Mit der Zeitschrift Die Ernahrungsindustrie

Full Journal Title: [Fette Seifen Anstrichmittel Verbunden Mit der Zeitschrift Die Ernahrungsindustrie](http://www3.interscience.wiley.com/journal/117945788/grouphome/home.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Schwuger, M.J. (1970), Überlegungen und Experimente zur Tensidadsorption mit Aktivkohle im Bereich geringer Tensidkonzentrationen. *Fette Seifen Anstrichmittel Verbunden Mit der Zeitschrift Die Ernahrungsindustrie*, **72** (1), 25-31.

Full Text: [1960-80\Fet Sei Ans Ver Mit Zei Ern72, 25.pdf](1960-80/Fet%20Sei%20Ans%20Ver%20Mit%20Zei%20Ern72,%2025.pdf)

? Schwuger, M.J. (1970), Considerations and experiments on adsorption of surfactants by activated carbon in range of low surfactant concentration. *Fette Seifen Anstrichmittel Verbunden Mit der Zeitschrift Die Ernahrungsindustrie*, **72** (1), 25-31.

Full Text: [1960-80\Fet Sei Ans Ver Mit Zei Ern72, 25.pdf](1960-80/Fet%20Sei%20Ans%20Ver%20Mit%20Zei%20Ern72,%2025.pdf)

Abstract: Considerations have been made on the equilibrium adsorption and adsorption kinetics of surfactants on activated carbon and means for studying the same are shown. The results of these measurements as function of surfactant concentrations, temperature and constitution are compared with known data and discussed. Furthermore, it is shown that the activated carbon adsorbs surfactants more rapidly than other compounds having the same molecular weight but containing condensed rings in molecule, which as well may occur in surface waters.

Keywords: Adsorption

# Title: Fibers and Polymers

Full Journal Title: Fibers and Polymers

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Journal Country/Territory:

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Publisher Address:

Subject Categories:

Impact Factor

? Septhum, C., Rattanaphani, S., Bremner, J.B. and Rattanaphani, V. (2009), An adsorption study of alum-morin dyeing onto silk yarn. *Fibers and Polymers*, **10** (4), 481-487.

Full Text: [2009\Fib Pol10, 481.pdf](2009/Fib%20Pol10,%20481.pdf)

Abstract: Silk yam was dyed with morin (2’,3,4’,5,7-pentahydroxyflavone) by using alum as mordant. In order to optimize the process, three methods of dyeing involving: pre-mordanting, Simultaneous mordanting, and post-mordanting were assessed and compared with a mordant-free process. The adsorption of alum-morin dye onto silk fibers indicated that the adsorption capacities were significantly affected by pH, the initial dye concentration, and temperature. The initial dye adsorption rates of alum-morin dye on silk before equilibrium was reached increased with higher dyeing temperatures. The pseudo second-order kinetic model was indicated for alum-morin dyeing (Simultaneous mordanting) of silk at pH 4.0 with an activation energy (E-a) of 45.26 KJ/mol. The value of the enthalpy or activation (Δ*H*) for alum-morin dyeing on silk at pH 4.0 was -31.29 kJ/mol. Also, the free energy (Delta G degrees) and entropy changes (Delta S degrees) for alum-morin dyeing on silk were -17.73 kJ/mol and -45.7 J/molK, respectively, consistent with a spontaneous and exothermic adsorption process.

Keywords: Activation, Activation Energy, Adsorption, Adsorption Capacities, Alum, Aqueous-Solution, Behavior, Changes, Complexes, Concentration, Cotton, Dye, Dye Adsorption, Energy, Enthalpy, Entropy, Equilibrium, Exothermic, Fibers, Kinetic, Kinetic Model, Kinetics, Linked Chitosan Beads, Methods, Model, Morin, pH, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Rates, Reactive Dyes, Removal, Second Order, Second-Order, Silk Dyeing, Sorption, Temperature, Thermodynamic, Value, Waters

? Lee, H.C., Jeong, Y.G., Min, B.G., Lyoo, W.S. and Lee, S.C. (2009), Preparation and acid dye adsorption behavior of polyurethane/chitosan composite foams. *Fibers and Polymers*, **10** (5), 636-642.

Full Text: [2009\Fib Pol10, 636.pdf](2009/Fib%20Pol10,%20636.pdf)

Abstract: We prepared a series of polyurethane(PU)/chitosan composite foams with different chitosan content of 5 similar to 20 wt% and investigated their adsorption performance of acid dye (Acid Violet 48) in aqueous solutions with various dye concentrations and pH values. It was observed that PU/chitosan composite foams exhibited well-developed open cell structures. Dye adsorption capacities of the composite foams increased with the increment of chitosan content in composite foams, because amine groups of chitosan serve as the binding sites for sulfonic ions of acid dyes in aqueous solutions. In addition, dye adsorption capacities of composite foams were found to increase with decreasing the pH value, which stems from the fact that the enhanced chemisorption between protonated amine groups of chitosan and sulfonic ions of acid dye is available in acidic solutions. The dye adsoption kinetics and equilibrium isotherm of the composite foams were well described with the pseudo-second order kinetic model and Langmuir isotherm model, respectively. The maximum adsorption capacity (*q*max) for the PU/chitosan composite foams with 20 wt% chitosan content is evaluated to be ca. 30 mg/g.

Keywords: Acid Dye, Acid Dyes, Adsoption, Adsorbents, Adsorption, Adsorption Behavior, Adsorption Capacities, Adsorption Capacity, Adsorption Performance, Aqueous Solutions, Aqueous-Solution, Behavior, Binding, Binding Sites, Biosorbents, Capacity, Chemisorption, Chitosan, Composite, Composite Foam, Copper, Cross-Linked Chitosan, Dye, Dye Adsorption, Dyes, Equilibrium, Equilibrium Isotherm, Ions, Isotherm, Isotherm Model, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Langmuir Model, Model, Open, Performance, pH, pH Value, Polyurethane, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Reactive Dye, Removal, Solutions, Sorption, Value

? Arslan, M. (2010), Use of 1,6-diaminohexane-functionalized glycidyl methacrylate-g-poly(ethylene terephthalate) fiber for removal of acidic dye from aqueous solution. *Fibers and Polymers*, **11** (2), 177-184.

Full Text: [2010\Fib Pol11, 177.pdf](2010/Fib%20Pol11,%20177.pdf)

Abstract: In this study, removal of Congo red (CR) from aqueous solution by 1,6-diaminohexane-functionalized glycidyl methacrylate-g-poly(ethylene terephthalate) (HMDA-GMA-g-PET) fiber was investigated. A new aminated fibrous adsorbent was prepared by a reaction between amine and epoxy group in GMA-g-PET fiber prepared by grafting GMA monomer onto poly (ethylene terephthalate) (PET) fiber. Effects of various parameters such as pH, treatment time, initial, dye concentration, and reaction temperature on the adsorption amount of dye onto reactive fiber were investigated. The adsorption rates of CR were much higher on the HMDA-GMA-g-PET fiber than on GMA-g-PET and ungrafled PET fiber. The effective pH was 2.0 for adsorption on grafted PET fiber. It was found that the sufficient time to attain equilibrium was 60 min. The maximum adsorption capacity oldie reactive fiber for CR is 16.6 mg/g fiber. The rates of adsorption were found to conform to the pseudo-second order kinetics with good correlation. It was found that the adsorption isotherm of CR fitted Freundlich type isotherm.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherm, Aqueous Solution, Azo Dyes, Capacity, Color Removal, Concentration, Congo Red, Congo-Red, Correlation, Cr, Decoloration, Decolourization, Dye, Effluent, Equilibrium, Fiber, Freundlich, Glycidyl Methacrylate,1,6-Diaminohexane, Graft Copolymerization, Grafted, Grafting, Isotherm, Kinetics, PET, pH, Poly(Ethylene Terephthalate) Fiber, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Rates, Reaction, Removal, Solution, Temperature, Textile Waste-Water, Time, Treatment

? Jiwalak, N., Rattanaphani, S., Bremner, J.B. and Rattanaphani, V. (2010), Equilibrium and kinetic modeling of the adsorption of indigo carmine onto silk. *Fibers and Polymers*, **11** (4), 572-579.

Full Text: Fib Pol11, 572.pdf

Abstract: Quantitative adsorption kinetic and equilibrium parameters for indigo carmine dyeing of silk were studied using UV-visible absorption spectroscopy. The effect of initial dye concentration, contact time, pH, material to liquor ratio (MLR), and temperature were determined to find the optimal conditions for adsorption. The mechanism of adsorption of indigo carmine dyeing onto silk was investigated using the pseudo first-order and pseudo second-order kinetic models. The adsorption kinetics was found to follow a pseudo-second-order kinetic model with an activation energy (E-a) of 51.06 kJ/mol. The equilibrium adsorption data of indigo carmine dye on silk were analyzed by the Langmuir and Freundlich models. The results indicate that the Langmuir model provides the best correlation. Adsorption isotherms were also used to obtain thermodynamic parameters such as free energy (ΔGº), enthalpy (ΔHº), and entropy (ΔSº) of adsorption. The negative values of ΔGº and ΔHº indicate the overall adsorption process is a spontaneous and exothermic one.

Keywords: Absorption, Acid Dye Adsorption, Activation, Activation Energy, Adsorption, Adsorption Isotherm, Adsorption Isotherms, Adsorption Kinetic, Adsorption Kinetics, Concentration, Correlation, Data, Decolorization, Dye, Energy, Enthalpy, Entropy, Equilibrium, Exothermic, First Order, Freundlich, Indigo Carmine, Isotherms, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Langmuir, Langmuir Model, Linked Chitosan Beads, Mechanism, Mechanism of Adsorption, Model, Modeling, Models, Palm Ash, pH, Pseudo First Order, Pseudo First-Order, Pseudo Second Order, Pseudo Second-Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Reactive Dye, Removal, Second Order, Second-Order, Silk Dyeing, Spectroscopy, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Waste-Water

# Title: Fibres & Textiles in Eastern Europe

Full Journal Title: [Fibres & Textiles in Eastern Europe](http://www.fibtex.lodz.pl/), [Fibres & Textiles in Eastern Europe](http://www.fibtex.lodz.pl/)

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ISSN: 1230-3666

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Subject Categories:

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? Kulak, Z., Niekraszewicz, A. and Struszczyk, H. (1999), Application of chitosan forms with increased sorption for water purification from heavy metals ions. *Fibres & Textiles in Eastern Europe*, **7** (4), 60-62.

Full Text: Fib Tex Eas Eur7, 60.pdf

Abstract: Thanks to its unique properties, chitosan can be applied in different branches. One of the main trends in chitosan application in practice is that of preserving the natural Environment by means of its utilisation for the purpose of purifying water from even trace quantities of toxic impurities. This applications is extremaly! important in the textile industry, especially in laundering process and in dye - works waste water purification. In this paper the authors present the influence of mean molecular weight, degree of deacetylation, as well as of secondary swelling rate on the sorption properties of chitosan and its functional forms in the shape of globules. Sorption of chitosan and its granules has been assessed using selected metal salts. It has been found that chitosan globules, in comparison with the initial chitosan, show 3 to 6 times higher sorption dynamics and slightly higher sorption capacity. The best sorption by chitosan, with respect to chosen solutions, was noted in the case of CuSO4 salt.

Keywords: Chitosan, Chitosan Globules, Sorption, Purification, Metal Ions

? Matyjas, E., Blus, K. and Rybicki, E. (2003), Sorption studies of reactive red dyes. *Fibres & Textiles in Eastern Europe*, **11** (2), 66-70.

Full Text: [F\Fib Tex Eas Eur11, 66.pdf](F/Fib%20Tex%20Eas%20Eur11,%2066.pdf)

Abstract: The sorption kinetics of reactive dyes, analogues of CL Reactive Red 120, on cellulose fibres has been studied. The kinetic studies were carried out in a neutral medium, pH = 7.0±0.1, at temperatures of 40±1°C and 60±1°C, with various concentrations of sodium chloride ranging from 0 to 40 g/dm3. It has been found that the sorption processes of the examined reactive dyes on cellulose fibres proceed in accordance with the reaction model proposed by Vickerstaff. This relationship can be described by the equation t/c(w) = a (.) t + b. The effect of the structure of dye on its sorption properties was determined. It has been found that the dye sorption is affected by, diamine - the coupling link of the two-chromophore system - as well as by the type of the active component used.

Keywords: Reactive Dyes, Sorption of Reactive Dyes, Kinetic of Sorption, Kinetic Model

# Title: Filtration & Separation

Full Journal Title: [Filtration & Separation](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6098&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=8e00e29b72e7042214d91aa7fb51f9af)

ISO Abbreviated Title: Filtr. Sep.

JCR Abbreviated Title: Filtr Separat

ISSN: 0015-1882

Issues/Year: 10

Journal Country/Territory: England

Language: English

Publisher: Elsevier Advanced Technology

Publisher Address: Oxford Fulfillment Centre The Boulevard, Langford Lane, Kidlington, Oxford

Subject Categories:

Engineering, Chemical: Impact Factor 0.125, 96/110

(1996), The continuing evolution and development of the dry scrubbing process for the treatment of incinerator flue gases. *Filtration & Separation*, **33** (5), 375-380.

Full Text: [F\Fil Sep33, 375.pdf](F/Fil%20Sep33,%20375.pdf)

? (1996), The continuing evolution and development of the dry scrubbing process for the treatment of incinerator flue gases (Reprinted from Filtration & Separation, May 1996). *Filtration & Separation*, **33** (7), A2-A7.

Roessler, N. (1998), Control of *Cryptosporidium* in bottled water using cartridge filtration systems. *Filtration & Separation*, **35** (1), 37-39.

Full Text: [F\Fil Sep35, 37.pdf](F/Fil%20Sep35,%2037.pdf)

Abstract: Recent outbreaks of disease associated with water contaminated by the parasite *Cryptosporidium* have heightened public awareness of the need for pure drinking water. Since most common methods of microorganism control show little effect against *Cryptosporidium*, bottled water companies are actively evaluating alternative systems to assure purity for the consumer. In this article, Dr Norbert Roessler, Cuno Inc., USA describes one such system which employs a graded-densify, polypropylene filter cartridge that acts as an effective final barrier against cyst contamination. The performance of this filter has been confirmed by the National Sanitation Foundation according to Standard 53 for cyst removal which uses a dust surrogate challenge. Comparable results were obtained when the filter was tested by a third party laboratory using an active, live cyst challenge.

# Title: Finance A Uver-Czech Journal of Economics and Finance

Full Journal Title: Finance A Uver-Czech Journal of Economics and Finance

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0015-1920

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Machacek, M. and Kolcunova, E. (2005), Publish or perish? On the importance of publishing on the economic sciences tenure-track in the CR. *Finance A Uver-Czech Journal of Economics and Finance*, **55** (11-12), 563-577.

Full Text: [2005\Fin Uve-Cze J Eco Fin55, 563.pdf](2005/Fin%20Uve-Cze%20J%20Eco%20Fin55,%20563.pdf)

Abstract: This paper scrutinizes the publishing histories of associate and tenured professors of economic sciences in the Czech Republic. According to domestic regulation, only certain universities may grant associate and tenured professorships. Such universities require that professorial candidates publish original work in internationally credible academic journals. To investigate whether such publishing requirement is indeed fulfilled, the authors studied the publishing histories of those who were granted tenured or associate professorships from January 1999 to June 2005 using the Social Sciences Citation Index developed by the Institute of Scientific Information. They found that, of the professors tenured in the respective period, almost 54 percent had not published any journal article before their appointment. At the same time, some 85 percent had not published an article in a foreign academic journal. Similar results held for those who were made associate professors in that period. It appears, then, that Czech universities in fact do not regard publishing as a principal factor on the academic tenure-track in the economic sciences.

Keywords: American, Authors, CR, Czech Republic, Economic, European Economists, Journal, Journal Article, Journals, Publishing, Regulation, Requirement, Sciences, United-States, Universities, Work

# Title: Financial Management

Full Journal Title: Financial Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Chung, K.H., Cox, R.A.K. and Mitchell, J.B. (1978), Citation patterns in the finance literature. *Financial Management*, **30** (3), 99-118.

Full Text: [1960-80\Fin Man30, 99.pdf](1960-80/Fin%20Man30,%2099.pdf)

Abstract: Out of a total of 12,637 individuals whose works were ever cited in the leading finance journals over the past 25 years, the top 1% (10%) account for more than one third (3/4) of the number of citations to articles published in these journals. In contrast, nearly one half of the authors have been cited only once. Similarly, the top 1% (10%) of articles/books received 22% (56%) of the total number of citations. These results indicate that afew prominent researchers dominate citation in the leading finance journals. More than half of the 100 most cited works were published in the Journal of Finance and Journal of Financial Economics.

? Borokhovich, K.A., Bricker, R.J. and Simkins, B.J. (1999), Financial Management’s success as an academic journal. *Financial Management*, **28** (3), 76-82.

Full Text: 1999\Fin Man28, 76.pdf

? Smith, S.D. (2004), Is an article in a top journal a top article? *Financial Management*, **33** (4), 133-149.

Full Text: [2004\Fin Man33, 133.pdf](2004/Fin%20Man33,%20133.pdf); [2004\Fin Man33, 133-1.pdf](2004/Fin%20Man33,%20133-1.pdf)

Abstract: This study ranks 15 leading finance journals by the average number of Social Sciences Citation Index cites per articles for articles published in 1996. It also defines a “top article,” compared to an “article in a top journal.” Using diffierent criteria for top articles, I examine the Type I error (a top article is rejected by a particular decision rule, e.g., in top three journals) and the Type II error (a “non-top” article is accepted as a top article) for each journal and combinations of the journals. Due to the high error rates, the results suggest that identifying top articles requires looking beyond the Top 3 journals, as well as examining each article more carefully for its intrinsic quality.

Keywords: Criteria, Decision, Error, Journal, Journals, Quality, Rates

# Title: Fizika Tverdogo Tela

Full Journal Title: Fizika Tverdogo Tela

ISO Abbreviated Title: Fiz. Tverd. Tela

JCR Abbreviated Title: Fiz Tverd Tela

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bokshtein, B.S., Gubchenko, L.I. and Shvindlerman, L.S. (1978), Isotherm of internal adsorption on dislocations. *Fizika Tverdogo Tela*, **20** (7), 2230-2232.

? Tovbin, Y.K. and Fedyanin, V.K. (1980), Kinetics of dissociating molecule adsorption with account of adatom coupling. *Fizika Tverdogo Tela*, **22** (6), 1599-1605.

? Aristov, V.Y., Kopetskii, C.V., Molodov, D.A. and Shvindlerman, L.S. (1980), Kinetic and adsorption properties of 36.5-degrees (111) tilt boundary in Al-Fe alloys. *Fizika Tverdogo Tela*, **22** (11), 3247-3253.

# Title: Fizika Zemli

Full Journal Title: Fizika Zemli

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0002-3337

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ivano, V.V. (1999), Instantaneous spectra of the July 12, 1993, tsunami in the Sea of Japan. *Fizika Zemli*, (1), 63-78.

Keywords: Earthquake

# Title: Fiziologicheskiĭ Zhurnal

Full Journal Title: Fiziologicheskiĭ Zhurnal

ISO Abbreviated Title:

JCR Abbreviated Title: Fiziol Zh

ISSN: 0201-8489

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Duplenko, I.K. and Burchinskii, S.G. (1991), Interdisciplinary research in gerontology: Citation analysis. *Fiziologicheskiĭ Zhurnal*, **37** (1), 114-117.

Abstract: The results of the citation analysis carried out to assess the interdisciplinary research level in gerontology and its separate research fields are presented. The data on the dynamics of the interdisciplinary index during 1975-1985 year period are analyzed. A conclusion is made on the possibility and expediency to the scientometric indicators and, in particular the interdisciplinary index, in the evaluation of the qualitative peculiarities of the research process.

Keywords: Analysis, Citation, Citation Analysis, Data, Dynamics, Evaluation, Expediency, Gerontology, Index, Indicators, Interdisciplinary, Interdisciplinary Research, Qualitative, Research, Scientometric

# Title: Fiziologicheskii Zhurnal

Full Journal Title: Fiziologicheskii Zhurnal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0201-8489

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Burchinsky, S.G. (1988), Scientometrical analysis of modern trends of the aging biology development. *Fiziologicheskii Zhurnal*, **34** (3), 93-100.

Keywords: Aging

? Zadorozhny, A.G., Khorevin, V.I. and Kienko, V.M. (1992), Some aspects of analysis of scientific publications from Bogomoletz, A.A institute of physiology Academy-of-Sciences-of-Ukraine. *Fiziologicheskii Zhurnal*, **38** (4), 79-85.

Abstract: Scientific publications from three sectors of the Institute have analyzed for the period since 1979 till 1988 inclusive. The analysis is based on data of annual reference books Science Citation Index (SCI) and lists of publications of each researcher of the Institute. It is shown that with almost equal numerical strength of researchers and similar number of publications the sector of molecular physiology contributed 43.6 % to cited works and 48.2 % of these works are included into database of SCI. Such indices for the sectors of neurophysiology and physiology of visceral systems accounted for 33 %, 33.4 % and 23.4, 18.4 % respectively. It is of interest that 475 % of references to the cited works of the molecular physiology sector were made by foreign scientists and self-citation constituted 17.4 %, while for the other sectors such indices had a reverse relationship. The problem on objectification of estimation of research is under discussion.

Keywords: Analysis, Calcium, Citation, Mollusk Neurons, Publications, References, Research, Researchers, Sci, Science Citation Index, Self-Citation, Somatic Membrane

# Title: Fleischwirtschaft

Full Journal Title: Fleischwirtschaft

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Islam, R. and Jockel, J. (2005), Reponse of the first authors. *Fleischwirtschaft*, **85** (11), 120.

# Title: Fluid Phase Equilibria

Full Journal Title: [Fluid Phase Equilibria](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5242&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=9e001fb3a46ce04f76486bb27e28f25e)

ISO Abbreviated Title: Fluid Phase Equilib.

JCR Abbreviated Title: Fluid Phase Equilibr

ISSN: 0378-3812

Issues/Year: 15

Journal Country/Territory: Netherlands

Language: Multi-Language

Publisher: Elsevier Science BV

Publisher Address: PO Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Thermodynamics: Impact Factor

Chemistry, Physical: Impact Factor 0.869, 59/91 (2000)

Engineering, Chemical: Impact Factor 0.929, 22/110 (1999); Impact Factor 0.869, 21/117 (2000)

Notes: highly cited

? Huron, M.J. and Vidal, J. (1979), New mixing rules in simple equations of state for representing vapor-liquid-equilibria of strongly non-ideal mixtures. *Fluid Phase Equilibria*, **3** (4), 255-271.

Full Text: [1960-80\Flu Pha Equ3, 255.pdf](1960-80/Flu%20Pha%20Equ3,%20255.pdf)

? Robinson, D.B., Peng, D.Y. and Chung, S.Y.K. (1985), The development of the Peng-Robinson equation and its application to phase-equilibrium in a system containing methanol. *Fluid Phase Equilibria*, **24** (1-2), 25-41.

Full Text: [1985\Flu Pha Equ24, 25.pdf](1985/Flu%20Pha%20Equ24,%2025.pdf)

Abstract: The motivation for developing a cubic equation of state model having improved capabilities in the vicinity of the critical region and in predicting liquid densities is reviewed. The reliability of the resulting Peng-Robinson equation for predicting volumetric and phase behavior is illustrated for complex hydrocarbon systems.

Modifications to improve the performance of the equation for two- and three-phase systems containing water are described. The reliability of the equation for system containing methanol is illustrated using new data on the methanol - carbon dioxide and methanol - propane systems. The agreement between experimental and calculated results is acceptable only over limited regions.

Donohue, M.D. and Aranovich, G.L. (1999), A new classification of isotherms for Gibbs adsorption of gases on solids. *Fluid Phase Equilibria*, **160**, 557-563.

Full Text: [F\Flu Pha Equ160, 557.pdf](F/Flu%20Pha%20Equ160,%20557.pdf)

Abstract: A systematic analysis of adsorption behavior has been performed. The results are presented here as a new classification of isotherms for fluid/solid equilibria.

# Title: Fluoride

Full Journal Title: Fluoride

ISO Abbreviated Title: Fluoride

JCR Abbreviated Title: Fluoride

ISSN: 0015-4725

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Int Soc Fluoride Research

Publisher Address: 81A Landscape Rd, Mt Eden, Auckland 4, New Zealand

Subject Categories:

Biology, Miscellaneous: Impact Factor 0.469,

Public, Environmental & Occupational Health: Impact Factor 0.469, 71/85

? Teotia, S.P.S. and Teotia, M. (1994), Dental-caries: A disorder of high fluoride and low dietary calcium interactions-30 years of personal research. *Fluoride*, **27** (2), 59-66.

Abstract: This comprehensive epidemiological study-performed during the period 1963-1993 on 0.4003 million children residing in non-endemic (F-less-than-or-equal-to 1.0 ppm) and endemic (F-> 1.0 ppm) fluorosis villages of India-was designed to investigate the essentiality or otherwise of fluoride and calcium nutrition in the prevention and control of dental caries. In non-endemic arras, of the children with adequate calcium nutrition, 7 percent showed dental fluorosis and 2 percent had dental canes, while of children with inadequate calcium nutrition 14.2 percent showed dental fluorosis and 31.4 percent had dental caries. In endemic areas, of the children with adequate calcium intakes, 59 percent had dental fluorosis and 10 percent had dental canes, while in the calcium-inadequate group, 100 percent exhibited dental fluorosis and 74 percent had dental caries. Our findings indicate that dental canes was caused by high fluoride and low dietary calcium intakes, separately and through their interactions. Dental canes was most severe and complex in calcium-deficient children exposed to high intakes of endemic fluoride in drinking water. The only practical and effective public health measure for the prevention and control of dental caries is the limitation of the fluoride content of drinking water to < 0.5 ppm, and adequate calcium nutrition (dietary calcium > 1 g/day). The World Health Organisation policy and recommendations on fluorides are not universally acceptable, especially for the environment of developing countries, with nutritional deficiencies, endemic fluorosis, and different caries prevalence trends. In the light of our scientific data, WHO recommendations require modifications to achieve dental health for all by the year AD 2000.

? Diesendorf, M., Colquhoun, J., Spittle, B.J., Everingham, D.N. and Clutterbuck, F.W. (1997), New evidence on fluoridation (Reprinted from the Australian and New Zealand Journal of Public Health, vol 21, 1997). *Fluoride*, **30** (3), 179-185.

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 US 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

# Title: Folia Biologica-Krakow

Full Journal Title: Folia Biologica

ISO Abbreviated Title: Folia Biol.-Prague

JCR Abbreviated Title: Folia Biol-Prague

ISSN: 0015-5500

Issues/Year: 6

Journal Country/Territory: Czech Republic

Language: English

Publisher: Inst Molecular Genetics

Publisher Address: Folia Biologica (Praha) Flemingovo N.2, Prague 6, Czech Republic 166 37

Subject Categories:

Biology: Impact Factor

? Glowacka, E. and Maryanska Nadachowska, A. (1998), Male reproductive system and karyotype of Mycopsylla fici (Tryon) (Homoptera, Psylloidea). *Folia Biologica-Krakow*, **46** (1-2), 17-21.

Abstract: Anatomical features of the male reproductive system. Karyotype (2n = 24 + X0) and C bands in Mycopsylla fici were described for the first time.

# Title: Folia Entomologica Mexicana

Full Journal Title: Folia Entomologica Mexicana

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor, /

? Galicia-Alcantara, M.A. (1990), Entomology in Latin America: A bibliometric essay. *Folia Entomologica Mexicana*, (80), 263-277.

Abstract: A bibliometric analysis of the entomological research in Latin America is made, through the production of published documents in the Latin American journals which are included in the data base named PERIODICA, during a five years period (1980-1984). The analysis includes countries, volume, institutions, disciplines treated, insect orders and the journals where such documents are published. Eleven countries published 1066 documents produced by 149 institutions in 148 journals treating 15 different subjects and 21 insect orders. The contribution of Brazil, Mexico, Argentina, Cuba and Chile (in decreasing order of importance) excessed 90% of the total.

# Title: Folia Phoniatrica et Logopaedica

Full Journal Title: [Folia Phoniatrica et Logopaedica](http://content.karger.com/ProdukteDB/produkte.asp?Aktion=JournalHome&ProduktNr=224177)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1021-7762

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schutte, H.K. and Švec, J.G. (2007), Reaction of *Folia Phoniatrica et Logopaedica* on the current trend of impact factor measures. *Folia Phoniatrica et Logopaedica*, **59**, 281-285.

Full Text: [2007\Fol Pho Log59, 281.pdf](2007/Fol%20Pho%20Log59,%20281.pdf)

Keywords: Impact, Impact Factor, Trend

# Title: The Foot

Full Journal Title: The Foot

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Menz, H.B. (2001), The first ten years of The Foot: A retrospective analysis of publication patterns, 1991-2000. *The Foot*, **11**, 113-118.

Full Text: [F\Foot11, 113.pdf](F/Foot11,%20113.pdf)

Abstract: Background: The Foot commenced publication in 1991 to provide an international forum for clinical foot and ankle research. As the journal has just reached the end of its first decade, it is timely to look back and review publication patterns over this time.

Methods: A retrospective analysis of every paper published in The Foot between 1991 and 2000 was undertaken. Articles were evaluated to determine the article type (i.e.: original research, literature review, case report, etc), the topic area, the country of origin of the primary author and the professional background of the primary author.

Results: The majority of papers published have been original research (44%), followed by case reports (32%) and literature reviews (18%). The topic area of papers has been diverse, covering 23 different categories, with most papers pertaining to foot surgery (27%). Authors from 27 different countries have published in the journal, with most papers submitted by authors from the UK (67%). The most frequent publishers in the journal were orthopaedic surgeons (63%), followed by podiatrists (25%). Between 1991 and 2000, there has been a steady increase in the number of papers published by podiatrists, and a small increase in the number of papers published by authors outside the UK.

Conclusions: These results confirm the status of The Foot as a truly international, multidisciplinary forum for the publication of clinical foot and ankle research. ß 2001 Harcourt Publishers Ltd

# Title: Food Additives and Contaminants

Title: Food Additives and Contaminants: Analysis, Surveillance, Evaluation, Control

Full Journal Title: Food Additives and Contaminants

ISO Abbreviated Title: Food Addit. Contam.

JCR Abbreviated Title: Food Addit Contam

ISSN: 0265-203X

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Taylor & Francis Ltd

Publisher Address: One Gunpowder Square, London EC4A 3DE, England

Subject Categories:

Chemistry, Applied: Impact Factor 1.368, 11/55 (2000)

Food Science & Technology: Impact Factor

Toxicology: Impact Factor

? Omija, B., Mitema, E.S. and Maitho, T.E. (1994), Oxytetracycline residue levels in chicken eggs after oral administration of medicated drinking water to laying chickens. *Food Additives and Contaminants*, **11** (6), 641-647.

Abstract: Twenty laying birds were divided into four groups (n = 5) and given drinking water containing 0, 400, 600, and 800 mg/l of oxytetracycline respectively for 7 days. Eggs were collected continuously for 17 days after drug administration and stored at +4 degrees C. The oxytetracycline residues in yolk and albumen were analysed using a microbiological method with Bacillus cereus var. mycoides ATCC 11778 as the test organism. The mean maximum concentration of oxytetracycline was observed 2 days earlier in the albumen than in the yolk. The mean values in yolk and albumen were 0.526 and 0.280 mg/kg respectively. The depletion period was shorter for albumen than for yolk and oxytetracycline was detected in the yolk and albumen up to days 13 and 10 respectively. Withdrawal periods depended on the concentration of the antibiotic administered. Oxytetracycline residues reached a peak faster in albumen than in yolk, although the residues persisted for longer periods in the yolk.

? Martínez, O.B. Díaz, C., Borges, T.M., Díaz, E. and Pérez, J.P. (1998), Concentrations of fluoride in wines from the Canary Islands. *Food Additives and Contaminants*, **15** (8), 893-897.

Abstract: Potentiometry using an ion-selective electrode has widely been used for determining fluoride because of its simplicity and rapidity. The concentration of fluoride was determined (Gran’s method) in 70 wines from the main wine-producing regions of the Canary Islands. The mean concentration of fluoride in wines from a region with a high concentration of fluoride in drinking waters was significantly (p < 0.05) higher than those mean concentrations obtained in the remaining wines. Non-important differences were found, Among the types of wine analysed. However, the fluoride concentrations of all the Canarian wines analysed here did not present a risk for the public health.

? Vaessen, H.A. and Schothorst, R.C. (1999), The oral nitrate and nitrite intake in The Netherlands: Evaluation of the results obtained by HPIC analysis of duplicate 24-hour diet samples collected in 1994. *Food Additives and Contaminants*, **16** (5), 181-188.

Abstract: In spring and autumn of 1994 duplicates of 24-h diets were collected from 123 respondents. One of the goals of this study was to determine the amount of nitrite and nitrate in the duplicates of 24-h diets to establish the oral daily intake of these analytes. For this purpose an HPIC/UV method for the determination of nitrate and nitrite in duplicate diets was developed and validated. The sample preparation procedure was derived from the in-house method used for the determination of nitrate and nitrite in human blood plasma. The sample is diluted with water, deproteinized with Carrez reagent, followed by chromatographic clean-up on an SPE C18-column. Both the nitrate and the nitrite results are quantitative. The recovery for nitrite was on average 104% (n = 21, spiking levels: 0.84-95 mg/kg) and for nitrate on average 103% (N = 21, spiking levels: 1.8-404 mg/kg). Samples of duplicates of 24-h diets were analysed according to the method developed. The median intake of nitrite calculated from the samples collected in spring 1994 was 0.6 mg/person day (range < 0.1-6.1 mg/person/day). For the samples collected in autumn 1994 these figures were < 0.2 mg/person/day (range < 0.1-16 mg/person/day). The mean intake of nitrate was 73 mg/person/day (range 7-322 mg/person/day) in spring 1994 and 87 mg/person/day (range 1-310 mg/person/day) in autumn 1994. The overall mean intake of nitrate in 1994 was 80 mg/person/day. The daily intake for nitrate was higher than that found in the duplicate diet study carried out in 1984/1985, when an average daily intake of 52 mg/person was measured. The intake of nitrite was also higher than found in the duplicate diets collected in 1984/1985. The findings of the study are discussed in the context of the ADI for nitrate and nitrite as well as the outcome of other recent European intake studies.

# Title: Food and Bioprocess Technology

Full Journal Title: Food and Bioprocess Technology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mussatto, S.I., Machado, E.M.S., Martins, S. and Teixeira, J.A. (2011), Production, composition, and application of coffee and its industrial residues. *Food and Bioprocess Technology*, **4** (5), 661-672.

Full Text: [2011\Foo Bio Tec4, 661.pdf](2011/Foo%20Bio%20Tec4,%20661.pdf)

Abstract: Coffee is one of the most consumed beverages in the world and is the second largest traded commodity after petroleum. Due to the great demand of this product, large amounts of residues are generated in the coffee industry, which are toxic and represent serious environmental problems. Coffee silverskin and spent coffee grounds are the main coffee industry residues, obtained during the beans roasting, and the process to prepare “instant coffee”, respectively. Recently, some attempts have been made to use these residues for energy or value-added compounds production, as strategies to reduce their toxicity levels, while adding value to them. The present article provides an overview regarding coffee and its main industrial residues. In a first part, the composition of beans and their processing, as well as data about the coffee world production and exportation, are presented. In the sequence, the characteristics, chemical composition, and application of the main coffee industry residues are reviewed. Based on these data, it was concluded that coffee may be considered as one of the most valuable primary products in world trade, crucial to the economies and politics of many developing countries since its cultivation, processing, trading, transportation, and marketing provide employment for millions of people. As a consequence of this big market, the reuse of the main coffee industry residues is of large importance from environmental and economical viewpoints.

Keywords: Coffee, Silverskin, Spent Grounds, Cellulose, Hemicellulose, Brewers Spent Grain, Espresso Coffee, Roasted Coffee, Final Quality, Green Coffee, Enzymatic-Hydrolysis, Chlorogenic Acid, Arabica Coffee, Fermentation, Cellulose

# Title: Food and Bioproducts Processing

Full Journal Title: Food and Bioproducts Processing

ISO Abbreviated Title: Food Bioprod. Process.

JCR Abbreviated Title: Food Bioprod Process

ISSN: 0960-3085

Issues/Year: 4

Journal Country/Territory: England

Language: English

Publisher: Inst Chemical Engineers

Publisher Address: 165-189 Railway Terrace, Davis Bldg, Rugby CV21 3BR, England

Subject Categories:

Biotechnology & Applied Microbiology: Impact Factor 0.339, / (2000)

Engineering, Chemical: Impact Factor 0.339, 76/117 (2000)

Food Science & Technology: Impact Factor 0.339, 69/95 (2000)

? Lee, V.K.C., Porter, J.F. and McKay, G. (2001), Modified design model for the adsorption of dye onto peat. *Food and Bioproducts Processing*, **79** (C1), 21-26.

Full Text: Foo Bio Pro79, 21

Abstract: For over 20 years, peat has been recognized as a potential biosorbent for the treatment of wastewaters. Several studies have been reported in the literature including its use in cleaning oil spills(1) the removal of heavy metals from wastewaters(2) the removal of herbicides(3), the treatment of slaughterhouse wastewaters, septic tank effluents and dairy wastes(4) The ability of peat to remove several dyes from aqueous effluent was reported some time ago(5). Further studies on single component adsorption of basic and acid dyes were carried out to study equilibrium isotherms(6) diffusion based mass transport processes for batch and fixed bed systems(7). Carbon has been used for acid dyes in fixed beds(8). However, in these previous studies, conventional simplified design methods-namely, bed depth service time (BDST) and empty bed residence time (EBRT) models-were applied to the experimental breakthrough curve data but failed to correlate these data due to the non-linearity of the BDST versus bed height data obtained. In the present paper new modifications have been developed based on an expression, N-t/N-0 = 1-exp(-a\*sqrt(t)), where N-t, N-0, a, t represent the bed capacity at service time t, the saturated bed capacity found in isotherm experiments, a rate constant and the service time of the bed respectively. The expression correlates the residence time in the adsorption bed with the time dependent fraction degree of saturation of the bed. It enables modified BDST and EBRT models to be applied and correlate the experimental data very accurately. This model is particularly suited to predicting the performance of fixed bed adsorbers, when the system requires a long time to reach equilibrium or when several fixed bed adsorbers are used in series.

Keywords: Acid Dyes, Activated-Carbon, Adsorption, Basic Dye, Biosorbent, Breakthrough Curve, Capacity, Cleaning, Design, Diffusion, Dye, Dyes, Effluents, Equilibrium, Fixed Bed, Heavy Metals, Isotherm, Isotherms, Mass Transport, Metals, Model, Models, Oil, Paper, Peat, Performance, Predicting, Rate Constant, Residence Time, Saturation, Septic Tank, Simplified Modelling, Systems, Transport, Treatment

# Title: Food and Chemical Toxicology

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Schlatter, J. and Lutz, W.K. (1990), The carcinogenic potential of ethyl carbamate (urethane): Risk assessment at human dietary exposure levels. *Food and Chemical Toxicology*, **28** (3), 205-211.

Full Text: [F\Foo Che Tox28, 205.pdf](F/Foo%20Che%20Tox28,%20205.pdf)

Abstract: Ethyl carbamate is found in fermented foods: bread contains 3-15 ng/g, stone-fruit brandies 200-20,000 ng/g, and about one-third of table-wine samples analysed contained more than 10 ng/g. In animals, ethyl carbamate is degraded to CO2, H2O and NH3, with intermediate formation of ethanol. This degradation has been shown to be inhibited (postponed) in the mouse by ethanol concentrations in the blood of about 0.15% and higher. A quantitatively minor pathway involves a two-step oxidation of the ethyl group to vinyl carbamate and epoxyethyl carbamate, the postulated electrophilic moiety that reacts with DNA. This reaction is probably the mode of the mutagenic action observed in many cellular and animal systems. The fact that only vinyl carbamate, but not ethyl carbamate, is mutagenic in a standard, A.M.es test is probably because there is insufficient production of the intermediate oxidation product in the standard test. Consistent with this metabolism is the carcinogenic activity of ethyl carbamate in various animal species and in different organs; this activity can be seen even after a single high dose in early life. Quantitative analysis of the total tumour incidences after chronic exposure of rats and mice to 0.1-12.5 mg ethyl carbamate/kg body weight/day in the drinking-water showed a dose-related increase. The main target organs were the mammary gland (female rats and mice having similar susceptibilities) and the lung (mice only). On the basis of sex-and organ-specific tumour data and with a linear extrapolation to a negligible increase of the lifetime tumour incidence by 0.0001% (one additional tumour in one million individuals exposed for life), a “virtually safe dose” of 20 to 80 ng/kg body weight/day was estimated. The daily burden reached under normal dietary habits without alcoholic beverages is in the range of about 20 ng/kg body weight/day. Regular table-wine consumption would increase the risk by a factor of up to five. Regular drinking of 20 to 40 ml stone-fruit brandy per day could raise the calculated lifetime tumour risk to near 0.01%.

Benfenati, E., Natangelo, M., Davoli, E. and Fanelli, R. (1991), Migration of vinyl-chloride into PVC-bottled drinking-water assessed by gas-chromatography mass-spectrometry. *Food and Chemical Toxicology*, **29** (2), 131-134.

Full Text: [F\Foo Che Tox29, 131.pdf](F/Foo%20Che%20Tox29,%20131.pdf)

Abstract: The migration of vinyl chloride (VC) into drinking-water bottled in polyvinyl chloride (PVC) was studied in relation to storage time, using a gas chromatographic-mass spectrometric method. Trideuterated vinyl chloride was used as internal standard. VC concentrations in the water rose progressively in direct (linear) relation to the time after bottling (about 1 ng/litre/day). The time of storage of PVC-packaged foodstuffs may affect the daily oral intake of this monomer, which in some cases may exceed 100 ng/person/day.

? Osborne, R. and Perkins, M.A. (1994), An approach for development of alternative test methods based on mechanisms of skin irritation. *Food and Chemical Toxicology*, **32** (2), 133-142.

Full Text: [1994\Foo Che Tox32, 133.pdf](1994/Foo%20Che%20Tox32,%20133.pdf)

Abstract: Recent advances in techniques for culture of human skin cells have led to their potential for use as in vitro models for skin irritation testing to augment or replace existing rabbit skin patch tests. Our work is directed towards the development of cultured human skin cells, together with endpoints that can be linked to in vivo mechanisms of skin irritation, as in vitro models for prediction of human skin irritation, and for study of mechanisms of contact irritant dermatitis. Three types of commercial human skin cell cultures have been evaluated, epidermal keratinocytes and partially or fully cornified keratinocyte-dermal fibroblast co-cultures. Human epidermal keratinocyte cultures (Clonetics) were treated with product ingredients and formulations, and the extent of cell damage was assessed by incorporation of the vital dye neutral red. Cell damage correlated with human skin patch data for ingredient chemicals with the exception of acids and alkalis, but did not correlate with skin irritation to surfactant-containing product formulations. Cultures of human skin equivalents were evaluated as potential models for measurement of responses to test materials that could not be measured in the keratinocyte/neutral red assay. We developed a battery of in vitro endpoints to measure responses to prototype ingredients and formulations in human epidermal keratinocyte-dermal fibroblast co-cultures grown on a nylon mesh (‘Skin2’ from Advanced Tissue Sciences) or on a collagen gel (‘Testskin’ from Organogenesis). The endpoints measure cytotoxicity (neutral red and MTT vital dye staining, lactate dehydrogenase and N-acetyl glucosaminidase release, glucose utilization) and inflammatory mediator (prostaglandin E2) release. Initial experiments indicate a promising correlation between responses of the Skin’ model to prototype surfactants and in vivo human skin irritation. The responses of Testskin cultures to acids and alkalis help to prove the concept that a topical application model can measure responses to these materials. These results suggest that human skin cell models can provide useful systems for preclinical skin irritation assessments, as alternatives to rabbits, for at least certain classes of test substances.

Keywords: Keratinocyte, Cytokines

Vaittinen, S.L., Komulainen, H., Kosma, V.M., Julkunen, A., Mäki Paakkanen, J., Jansson, K., Vartiainen, T. and Tuomisto, J. (1995), Subchronic toxicity of 3-chloro-4-(dichloromethyl)-5-hydroxy-2 (5H)-furanone (MX) in Wistar rats. *Food and Chemical Toxicology*, **33** (12), 1027-1037.

Full Text: [F\Foo Che Tox33, 1027.pdf](F/Foo%20Che%20Tox33,%201027.pdf)

Abstract: The subchronic (14-18 wk) toxicity of 3-chloro-4-(dichloromethyl)-5-hydroxy-2 (5H)-furanone (MX), a mutagenic by-product in chlorinated drinking water, was evaluated in Wistar rats. In a range-finding study, MX was administered daily for 14 days by gavage in deionized water to male rats (five animals per group) at doses of 12.5, 25, 50, 100 or 200 mg/kg body weight. The doses above 50 mg/kg were lethal and three out of five animals also died during treatment at 50 mg/kg. The range-finding study was repeated with doses of 5, 10 and 20 mg MX/kg, given on 5 days a week, to both males and females (10 animals per group). These doses were not overtly toxic but caused several changes in plasma clinical chemistry at 10 and 20 mg MX/kg in comparison with the controls. These included increased urea, creatinine and bilirubin and decreased inorganic phosphate and potassium in females and increased cholesterol in males. In the subchronic toxicity study, rats (15 per group, were given MX by gavage, on 5 days a week, at doses of 0 (controls) or 30 md/kg (low dose) for 18 wk, or, in the high-dose group, at doses increasing from 45 to 75 mg/kg over 14 wk. The high dose was finally lethal (two males and one female died) and caused hypersalivation, wheezing respiration, emaciation and tangled fur in animals. The body weights of the high-dose males decreased by 15%, and food consumption was decreased by 15 to 20%, but the water consumption increased by 15% to 60%. Plasma cholesterol and triglycerides were elevated and urine excretion was increased. Urine specific gravity was decreased and the relative weights of the liver and kidneys were increased in both sexes at both doses in comparison with the controls. At both doses, duodenal hyperplasia occurred in males and females, and slight focal epithelial hyperplasia in the forestomach was observed in males. Splenic atrophy and haemosiderosis were seen in two high-dose females, and epithelial cell atypia in the urinary bladder of one high-dose male and female. The frequency of bone marrow polychromatic erythrocytes with micronuclei was slightly increased in low-dose males. The results indicate that repeated administration of MX disturbs the fluid-electrolyte balance and induces diuresis, causes mucosal hyperplasia in the gastro-intestinal tract as a local effect, and affects lipid metabolism.

Vleeming, W., van de Kuil, A., te Biesebeek, J.D., Meulenbelt, J. and Boink, A.B. (1997), Effect of nitrite on blood pressure in anaesthetized and free-moving rats. *Food and Chemical Toxicology*, **35** (6), 615-619.

Full Text: [F\Foo Che Tox35, 615.pdf](F/Foo%20Che%20Tox35,%20615.pdf)

Abstract: The effect of nitrite on blood pressure and heart rate was studied in anaesthetized (non-telemetric method) and free-moving rats (biotelemetry system). In anaesthetized rats, NaNO2 (10-1000 µmol/kg), infused over 5 min, induced a dose-related decrease in blood pressure. The maximal decrease in mean arterial blood pressure (MAP), caused by 1000 µmol/kg NaNO2 and measured 15 min after infusion was 55.9±3.2% (n = 3). After NaNO2 infusion, in the plasma, rapid conversion of nitrite into nitrate was observed. However, sodium nitrate (NaNO3, 100 µmol/kg) did not decrease blood pressure and there was no conversion of nitrate into nitrite. Free-moving rats received KNO2 which was added to drinking water (36 mmol/litre) for a period of 3 days. KNO2 decreased the MAP and increased the heart rate during the rat’s activity phase at night but not during their resting phase in the day. An equal concentration of potassium (KCl, 36 mmol/litre added to drinking water) for 3 days did not decrease blood pressure. It is concluded that nitrite decreases blood pressure in rats, which probably induces, by renin-angiotensin system activation, hypertrophy of the adrenal zona glomerulosa.

Calderon, R.L. (2000), The epidemiology of chemical contaminants of drinking water. *Food and Chemical Toxicology*, **38** (1), S13-S20.

Full Text: [F\Foo Che Tox38, S13.pdf](F/Foo%20Che%20Tox38,%20S13.pdf)

Abstract: A number of chemical contaminants have been identified in drinking water. These contaminants reach drinking water supplies from various sources, including municipal and industrial discharges, urban and I ural run-off, natural geological formations, drinking water distribution materials and the drinking water treatment process. Chemical contaminants for which epidemiologic studies have reported associations include the following: aluminium, arsenic, disinfection by-products, fluoride, lead, pesticides and radon. Health effects reported have included various cancers, adverse reproductive outcomes, cardiovascular disease and neurological disease. In evaluating epidemiologic studies for risk assessment, considering whether the study design was qualitative (hypothesis generating) or quantitative (hypothesis testing) is important and whether sufficient epidemiologic data of a quantitative nature exists to determine the dose-response curve. Each of the chemical contaminants mentioned are summarized by study designs (qualitative and quantitative) and whether a dose-response curve based on epidemiologic data has been proposed. Environmental epidemiology studies are driven by environmental exposures of interest. For drinking water contaminants, the design of epidemiologic studies and their interpretation should consider the following exposure issues: the source of the contaminant: other sources of the contaminant; the route of exposure; the frequency, duration and magnitude of exposure; the ability to document an actual internal dose; and the ability to document the dose to the target organ. Health effects of concern have other risk factors that must be measured in the conduct of these studies. In evaluating epidemiologic studies, potential errors and biases that may occur must be considered given the very low magnitude of associations (less than 2.0 for either odds ratio or risk ratio). Given the issues. the next generation of drinking water epidemiologic studies should include a multidisciplinary team beyond traditional epidemiologists and statisticians. Study teams will require toxicologists, chemists, engineers and exposure assessors. Arsenic is briefly discussed as an example of the importance of susceptible populations. Disinfection by-products are discussed as an example of epidemiologic studies of mixtures. Published by Elsevier Science Ltd.

Keywords: Drinking Water, Chemicals, Epidemiology, Arsenic, Disinfection By-Products, Birth

Holt, M.S. (2000), Sources of chemical contaminants and routes into the freshwater environment. *Food and Chemical Toxicology*, **38** (1), S21-S27.

Full Text: [F\Foo Che Tox38, S21.pdf](F/Foo%20Che%20Tox38,%20S21.pdf)

Abstract: Drinking water is derived from either surface waters or groundwater. The latter is of enormous importance, with more than 65% of Europe’s drinking water needs being supplied in this way. However, water from either source is rarely, if ever, pure. Industrialization and urbanization together with intensified agricultural activity have led to increased demands for water on the one hand but to the potential for large scale release of contaminants on the other. The result is that surface water can be contaminated through direct or indirect emissions and groundwater can be contaminated by leaching from the soil. The diversity and number of existing and potential sources of chemical contamination are guile large. This paper reviews the major sources of chemical emissions and the routes by which contaminants can arise in surface waters and groundwaters intended for use as a supply of drinking water. It is estimated that there are between 90,000 and 100,000 chemicals in regular use but that as few as 3000 account for about 90% of the total mass used. Whether a substance may be found in the air, soil or aqueous environment depends on a number of factors, including how the chemical is released, the volume released, where the chemical is released, its release pattern and its physicochemical properties. of the major routes of contamination for the aquatic environment, the most significant are directly from treated and untreated waste waters, run-off and atmospheric deposition (including spray drift) and indirectly from leaching. The fate of emissions of contaminants in a particular water body will depend not only on the amount of the substance emitted but also on the transport, dispersion and transformation (biodegradation, hydrolysis, photolysis) processes in the receiving body. The preventative measures (biodegradation testing and sewage treatment) taken to minimize contamination are discussed. (C) 2000 Published by Elsevier Science Ltd. All rights reserved.

Keywords: Aquatic, Contamination, Emissions, Environmental Fate, Biodegradation

Bates, A.J. (2000), Water as consumed and its impact on the consumer: Do we understand the variables? *Food and Chemical Toxicology*, **38** (1), S29-S36.

Full Text: [F\Foo Che Tox38, S29.pdf](F/Foo%20Che%20Tox38,%20S29.pdf)

Abstract: Water is the most important natural resource in the world, without it life cannot exist. In 1854 a cholera outbreak in London caused 10,000 deaths and positively linked enteric disease with bacterial contamination of drinking water by sewage pollution. Since then, adequate water hygiene standards and sewage purification have played the most significant role in disease eradication and public health improvements everywhere. Standards for drinking water have become an extensive range of microbiological and chemical parametric values. Which has not increased consumer, if the media is to be believed. Customers rightly expect that the water they drink is safe and wholesome. Standard setting is perceived as a precise science and meaningful to health. Is this justified and do scientists and regulators who derive and set the standards understand the uncertainties in the system? Water is the universal solvent, therefore it will never be pure; it will contain impurities prior to and after treatment. Knowledge of its potential to become contaminated is necessary to understand the epidemiology associated with waterborne contaminants and their effects. Water use patterns vary considerably and affect assumptions based on toxicology derived from laboratory studies under tightly controlled conditions. Consideration must be given to the model systems used to assess toxicity and translate results from the laboratory to the real world, if sensible scientifically-based water quality standards are to be set and achieved cost effectively.

Van Dijk-Loijaard, A.M. and van Genderen, J. (2000), Level of exposure from drinking water. *Food and Chemical Toxicology*, **38** (1), S37-S42.

Full Text: [F\Foo Che Tox38, S37.pdf](F/Foo%20Che%20Tox38,%20S37.pdf)

Abstract: The relative exposure from drinking water is generally small, although there is a lack of information on total daily intake of individual organic micropollutants. There are, however, a few exceptions. Materials used in domestic distribution systems (lead, copper and plastics) may cause a deterioration of the water quality, especially in stagnant water. The relative exposure to the related compounds may increase considerably. Monitoring data from the tap (with defined sampling techniques) are needed. Also, disinfection/oxidation by-products (bromate, trihalomethanes) can be present in drinking water in considerable amounts and the relative exposure from drinking water may even approach 100%. Especially for volatile organic micropollutants, exposure routes from drinking water other than ingestion must be taken into account (inhalation, percutaneous uptake). When there is a need for detection of substances at very low levels it is important that the measurements are reliable. International interlaboratory comparisons for organic micropollutants are lacking at the moment. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Exposure, Drinking Water, Chemical Contaminants, Inhalation, Percutaneous Uptake

van Leeuwen, F.X. (2000), Safe drinking water: The toxicologist’s approach. *Food and Chemical Toxicology*, **38** (1), S51-S58.

Full Text: [F\Foo Che Tox38, S51.pdf](F/Foo%20Che%20Tox38,%20S51.pdf)

Abstract:The production of adequate and safe drinking water is a high priority issue for safeguarding the health and well-being of humans all over the world. Traditionally, microbiological quality of drinking water has been the main concern, but over the last decades the attention of the general public and health officials on the importance of chemical quality and the threat of chemical pollutants have increased with the increase of our knowledge on the hazards of chemical substances. There are many sources of contamination of drinking water. Broadly they can be divided into two categories: contaminants originating from surface and groundwater, and contaminants used or formed during the treatment and distribution of drinking water. Contaminants in surface and groundwater can range from natural substances such as arsenic and manganese leaching from soil, to contaminants introduced by human activities, such as run-off from agricultural activities, controlled discharge from sewage treatment works and industrial plants, and uncontrolled discharges or leakage from landfill sites and from chemical accidents. Disinfectants and disinfectant by-products are well known contaminants resulting from the processes used by the drinking water industry for the treatment and distribution of water. The basic question in the production of drinking water is how to rid drinking water of potentially dangerous microorganisms and chemicals without introducing new hazards that might pose new and different threats to human health. It is the responsibility of toxicologists to provide risk assessments for chemical pollutants and to derive guidelines or standards for drinking water quality below which no significant health risk is encountered, to assure consumers that drinking water is safe and can be consumed without any risk. This paper will focus on the toxicological procedures used by the World Health Organization to derive guideline values for chemical compounds in drinking water, and will touch upon some critical differences in the nature of guidelines and legally binding standards.

Groten, J.P. (2000), Mixtures and interactions. *Food and Chemical Toxicology*, **38** (1), S65-S71.

Full Text: [F\Foo Che Tox38, S65.pdf](F/Foo%20Che%20Tox38,%20S65.pdf)

Abstract: Drinking water can be considered as a complex mixture that consists of tens, hundreds or thousands of chemicals of which the composition is qualitatively and quantitatively not fully known. From a public health point of view it is most relevant to answer the question of whether chemicals in drinking water interact in a way that results in an increased overall response as compared to the sum of the responses to the individual chemicals in the mixture, or indeed in an effect that is simply a summation of the expected effects of the individual chemicals. Present methods for risk assessment of mixtures rely heavily on some form of additivity model, unless data are adequate for a direct risk assessment of the mixture of concern in its entirety. The “dose-addition” concept (“simple similar action”) is the most common approach to risk assessment of mixtures and it is applicable over the whole range of exposure levels from low non-toxic to toxic levels when all chemicals in the mixture act in a similar way. However, in toxicity studies at environmentally relevant exposure scenarios the mixtures that meet such conditions are the exception rather than the rule. In that case the “effect addition” model has to be followed assuming “independent joint action”. For these compounds now experimental data have indicated that the results at low exposure levels are probably difficult to predict based on response additivity found at higher dose levels. Thus, although the additivity models are mathematically simple, they require assumptions about the mechanisms of action and the high-to-low dose extrapolation. Therefore, theoretical considerations in risk assessment of chemical mixtures should be verified by simple case studies. Up till now, the number of environmentally relevant mixtures to which a direct risk assessment has been devoted is limited. Even if toxicity data on individual compounds are available, we are still facing the immense problem of extrapolation of findings obtained at relatively high exposure concentration in laboratory animals to man being exposed to (much) lower concentrations. Therefore the prioritization of compounds for further research and the extrapolation to low doses should be considered as key issues in the assessment of possible health risks from exposure to chemical mixtures such as drinking water.

Watt, G.C., Britton, A., Gilmour, H.G., Moore, M.R., Murray, G.D. and Robertson, S.J. (2000), Public health implications of new guidelines for lead in drinking water: A case study in an area with historically high water lead levels. *Food and Chemical Toxicology*, **38** (1), S73-S79.

Full Text: [F\Foo Che Tox38, S73.pdf](F/Foo%20Che%20Tox38,%20S73.pdf)

Abstract: Concern about the neurotoxicity of lead, particularly in infants and young children, has led to a revision of blood lead levels which are considered to involve an acceptable level of human exposure. Drinking water guidelines have also been reviewed in order to reduce this source of population exposure to lead. In the last 20 years, guidelines have been reduced from 100 to 50 to 10 microg/litre. Lead in tap water used to be a major public health problem in Glasgow because of the high prevalence of houses with lead service pipes, the low pH of the public water supply and the resulting high levels of lead in water used for public consumption. Following two separate programmes of water treatment, involving the addition of lime and, a decade later, lime supplemented with orthophosphate, it is considered that maximal measures have been taken to reduce lead exposure by chemical treatment of the water supply. Any residual problem of public exposure would require large scale replacement of lead service pipes. In anticipation of the more stringent limits for lead in drinking water, we set out to measure current lead exposure from tap water in the population of Glasgow served by the Loch Katrine water supply, to compare the current situation with 12 years previously and to assess the public health implications of different limits. The study was based on mothers of young children since maternal blood lead concentrations and the domestic water that mothers use to prepare bottle feeds are the principal sources of foetal and infant lead exposure. An estimated 17% of mothers lived in households with tap water lead concentrations of 10 microg/litre (the [WHO, ] guideline) or above in 1993 compared with 49% in 1981. Mean maternal blood lead concentrations fell by 69% in 12 years. For a given water lead concentration, maternal blood lead concentrations were 67% lower. The mean maternal blood lead concentration was 3.7 microg/litre in the population at large, compared with 3.3 microg/litre in households with negligible or absent tap water lead. Nevertheless, between 63% and 76% of cases of mothers with blood lead concentrations of 10 microg/dl or above were attributable to tap water lead. The study found that maternal blood lead concentrations were well within limits currently considered safe for human health. About 15% of infants may be exposed via bottle feeds to tap water lead concentrations that exceed the WHO guideline of 10 microg/litre. In the context of the health and social problems which affect the well-being and development of infants and children in Glasgow, however, current levels of lead exposure are considered to present a relatively minor health problem.

Buchet, J.P. and Lison, D. (2000), Clues and uncertainties in the risk assessment of arsenic in drinking water. *Food and Chemical Toxicology*, **38** (1), S81-S85.

Full Text: [F\Foo Che Tox38, S81.pdf](F/Foo%20Che%20Tox38,%20S81.pdf)

Abstract: On the basis of studies of the prevalence of skin cancer among users of As-rich well water in Taiwan, WHO experts recommended in 1984 a maximum As concentration of 50 µg/litre in drinking water. Since that time, a plethora of non-cancer as well as cancer effects has been observed in several other populations sustaining a chronic exposure to various As concentrations in drinking water. This prompted a revision of the standard and a provisional guideline of 10 µg/litre was recommended in 1993. While the uncertainty linked to the statistical inferences leading to the guideline are reduced by the fact that they are directly estimated from human data and result from extrapolations made relatively close to observed exposure levels, developed guideline depends strongly on the choice of the dose-response model (linear, quadratic, hockey-stick) and the accuracy of the exposure data. The potential exposure to As sources other than drinking water, dietary habits and genetic characteristics of the populations may also make more difficult the inference of a recommendation for As concentration in drinking water. Owing to the huge cost of strongly reducing the current As in water standard, many efforts are presently made to clarify the quantitative aspects of As-induced cancers, particularly at low dose levels. New data on the metabolism and carcinogenic mechanism of As in humans along with the results of epidemiological studies presently under way in several countries will help to reduce the uncertainty in the risk assessment of As. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Arsenic, Drinking Water, Risk Assessment

Younes, M. and Galal-Gorchev, H. (2000), Pesticides in drinking water: A case study. *Food and Chemical Toxicology*, **38** (1), S87-S90.

Full Text: [F\Foo Che Tox38, S87.pdf](F/Foo%20Che%20Tox38,%20S87.pdf)

Abstract: Pesticides occupy a unique position among chemicals found in drinking water, since they are deliberately used to control pests in agriculture and public health. They comprise a variety of compounds of various chemical properties (many of which being persistent in the environment), toxic potential, and mechanism of action. Safety assessment for drinking water is conducted by allocating health-based guidelines for exposure through this environmental medium. The tolerable daily intake (TDI) approach is used by WHO in the case of pesticides with assumed thresholds of effect, while low-dose extrapolation is used in the case of non-threshold carcinogens. Risk management, however, can also be based on the precautionary principle. Risk assessment evaluates the risk emanating from a given exposure on the basis of all available data.

Waisberg, M., Black, W.D., Waisberg, C.M. and Hale, B. (2004), The effect of pH, time and dietary source of cadmium on the bioaccessibility and adsorption of cadmium to/from lettuce (*Lactuca sativa* L. cv. Ostinata). *Food and Chemical Toxicology*, **42** (5), 835-842.

Full Text: [F\Foo Che Tox42, 835.pdf](F/Foo%20Che%20Tox42,%20835.pdf)

Abstract: This study evaluated the influence of three variables in the effectiveness of an in vitro digestion protocol used to determine bioaccessibility of cadmium from the diet. The percentage of solubilized metal was measured in relation to digestion time, pH of each digestion phase and the dietary source of the metal in the diet. Because it would be convenient to add the metal to the diet before digestion instead of growing contaminated vegetables, the importance of metal incorporation in the plant in comparison to amendment through foliar spraying was also studied. From our results we conclude that the dietary source of metal in the protocols tested doesn’t seem to be a significant factor when comparing the lettuce sprayed with cadmium with the lettuce that had cadmium incorporated in it, although the difference was barely significant (*P*=0.057). Time affects the digestion in different ways depending on the dietary source of cadmium. pH is a relevant factor in both intestinal and gastric phases and should be taken into consideration when analyzing the results from in vitro digestions. Since the intestinal phase in our experiments decreased the amount of cadmium solubilized during the digestion, we investigated the effect of pH on the adsorption of this metal to lettuce and found that there is an increased binding of cadmium at pH values above 3. Therefore we suggest that part of the reduction in bioaccessibility following intestinal digestion could be explained by an increase in adsorption of metal to the plant material at higher pH values.

Keywords: Cadmium, In Vitro Digestion, Bioaccessibility, Adsorption, Lettuce, Bioavailability, Binding

? Shokrolahi, A., Ghaedi, M., Shabani, R., Montazerozohori, M., Chehreh, F., Soylak, M. and Alipour, S. (2010), A preconcentration procedure for copper, nickel and chromium ions in some food and environmental samples on modified Diaion SP-850. *Food and Chemical Toxicology*, **48** (2), 482-489.

Full Text: [2010\Foo Che Tox48, 482.pdf](2010/Foo%20Che%20Tox48,%20482.pdf)

Abstract: A sensitive and simple method for the simultaneous preconcentration of trace amount of Cu2+, Ni2+ and Cr3+ ions in some real samples has been reported In this method these elements are adsorbed as respective complex with Bis(2-hydroxyacetophenone)-1,2-propanediimine (BHAPPDI) on Diaion SP-850 and the retained metal ions are eluted using 8 ml of 4 M nitric acid. The influences of the analytical parameters including pH, solid phase ingredients amount and condition of eluting solution and sample volume were investigated. The effects of matrix ions on retentions of the analytes were also examined. The recoveries of analytes were generally higher than 90% with a relatively low RSD. The method has been successfully applied for these metal ions contents evaluation in some food and environmental samples. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Activated Carbon, Amberlite XAD-2, Atomic-Absorption-Spectrometry, Biological Samples, Chelating Resin, Chromium, Chromium Ions, Copper, Cu2+, Diaion Sp-850, Environmental, Evaluation, Food, Food Samples, Heavy-Metals, Ions, Matrix, Metal, Metal Ions, Modified, Modified Silica-Gel, Ni2+, Nickel, Online Preconcentration, pH, Preconcentration, Procedure, Rights, Solid Phase Extraction, Solid-Phase Extraction, Solution, Trace-Metal Ions, Volume

# Title: Food Chemistry

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Chemistry, Applied: Impact Factor 0.921, / (2000)

Food Science & Technology: Impact Factor 0.921, / (2000)

Nutrition & Dietetics: Impact Factor 0.921, / (2000)

? Aworh, O.C. and Muller, H.G. (1987), Cheese-making properties of vegetable rennet from sodom apple (*Calotropis procera*). *Food Chemistry*, **26** (1), 71-79.

Full Text: [1987\Foo Che26, 71.pdf](1987/Foo%20Che26,%2071.pdf)

Abstract: Yield, chemical composition and texture profile of cheese made with vegetable rennet from sodom apple leaves were compared with those of a direct acid cheese made with calf rennet. Yield, moisture, fat and protein contents were 14·47%, 49·70%, 26·15% and 20·0%, respectively, for cheese made with vegetable rennet and 12·45%, 44·80%, 29·84% and 20·4%, respectively, for the direct acid cheese made with calf rennet. Cheese made with vegetable rennet had less soluble nitrogen than that made with calf rennet despite the fact that vegetable rennet was more proteolytic in casein solution than calf rennet. Relative to that made with calf rennet, cheese made with vegetable rennet was harder, less cohesive and more gummy, presumably because of differences in chemical composition and physical characteristics between the cheeses.

Saad, B., Pok, F.W., Sujari, A.N.A. and Saleh, M.I. (1998), Analysis of anions and cations in drinking water samples by capillary ion analysis. *Food Chemistry*, **61** (1-2), 249-254.

Full Text: [F\Foo Che61, 249.pdf](F/Foo%20Che61,%20249.pdf)

Abstract: The use of capillary ion electrophoresis (CIE, Waters’ tradename: Capillary Ion Analysis, CIA) for the analysis of four anions and four cations in drinking water samples available on the Malaysian market, such as natural mineral water, bottled drinking water and tap water, was investigated. In addition, zam-zam water (an underground water, much sought-after by Muslims and only available in Mekah, Saudi Arabia) was also analyzed. The anions analyzed were chloride, sulphate, nitrate and fluoride while the cations analyzed were potassium, calcium, sodium and magnesium. Results of this determination generally show a low content of anions and high content of calcium and magnesium in natural mineral water and non-detectable amounts of anions and cations in bottled drinking water. Out of the 15 mineral waters of different brands that were analyzed, four brands show anionic and cationic levels almost similar to that of tap water. With the exception of fluoride, an abnormally high level of both anions and cations were detected in all the zam-zam water samples analyzed, as compared to the other drinking waters. (C) 1998 Elsevier Science Ltd. All rights reserved.

Keywords: Alkaline-Earth Metals, Indirect Photometric Detection, Flow-Injection Analysis, Inorganic Anions, Mineral Waters, Chromatographic Determination, Liquid-Chromatography, Electrophoresis, Nitrate, Separation

Edris, A.E., Girgis, B.S. and Fadel, H.H.M. (2003), Recovery of volatile aroma components from aqueous waste streams using an activated carbon column. *Food Chemistry*, **82** (2), 195-202.

Full Text: [F\Foo Che82, 195.pdf](F/Foo%20Che82,%20195.pdf)

Abstract: The solid phase adsorption of aroma components depleted from essential oils and drained with the condensed water water during the distillation of aromatic plants onto granular activated carbon (GAC) is reported. A mini-column packed with laboratory-prepared activated carbon, derived from pistachio shells, which were previously treated with H3PO4 and pyrolysed at 500 degreesC, was used. Three aromatic waste waters (peppermint, lemongrass, and spearmint) discharged from a distillation plant, were chosen and allowed to pass through the column. GC and GC-MS techniques were employed to detect and quantify the selected key aroma components in the waste waters, and in the effluent waste water after passing through the carbon column. The high surface area GAC (approximate to1300 m2/g) proved highly efficient in retaining most of the selected aroma components of the waste waters up to 90 bed volumes of treatment without reaching exhaustion. The uptake of the aroma components by activated carbon was demonstrated to be dependent on their chemical structure and oxygen-functional groups. Hydrophilic aroma components were retained more selectively than hydrophobic ones, due to the acidic nature of the carbon surface, which had good affinity for water. Recovery of the aroma from the loaded carbon column, with diethyl ether, resulted in general quantitative recovery of the adsorped components and the degree of recovery (70-98%) depended on the chemical structure. Open chain components were partially entrapped within the internal porosity, which inhibited their complete recovery. The reported process of solid-phase separation appears useful for the recovery of water-soluble aroma components without affecting their physical or chemical characteristics and without need to raise the temperature. (C) 2003 Elsevier Science Ltd.. All rights reserved

Keywords: Activated Carbon, Recovery, Volatile Aroma, Essential Oils, Waste Water, Solid-Phase Extraction

? Liu, Y.F., Liu, J.X., Chen, X.F., Liu, Y.W. and Di, D.L. (2010), Preparative separation and purification of lycopene from tomato skins extracts by macroporous adsorption resins. *Food Chemistry*, **123** (4), 1027-1034.

Full Text: [2010\Foo Che123, 1027.pdf](2010/Foo%20Che123,%201027.pdf)

Abstract: In order to separate and purify lycopene from tomato skins extracts (lycopene oleoresin) with macroporous adsorption resins (MARS), the adsorption properties of twenty-four kinds of MARs were evaluated. The results showed that LX-68 had higher separation efficiency than other resins. Based on the static experiments with LX-68, it was found that the experimental data fitted best to the pseudo-second-order kinetics model and Langmuir isotherm model. The separation parameters of lycopene from tomato skins extracts were optimised through dynamic adsorption/desorption experiments with the column packed by LX-68. Through only one cycle treatment, the lycopene content in lycopene oleoresin increased 30.4-fold from 0.21% to 6.38%, with a recovery yield of 66.9%, which were determined by HPLC method. The results showed that MARs would provide useful help for the development of large-scale manufacture in the separation of lycopene from tomato skins extracts. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Properties, Adsorption, Desorption, Column, Counter-Current Chromatography, Data, Development, Dynamic, Efficiency, Experimental, Experiments, Fluid, HPLC, Isotherm, Isotherm Model, Kinetics, Kinetics Model, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Lycopene, Macroporous, Macroporous Adsorption Resins, Mar, Model, Optimization, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Purification, Recovery, Resins, Rhodiola-Rosea, Rights, Separation, Temperature, Tomato Skins Extracts, Trans-Lycopene, Treatment

? Lin, L.Z., Zhao, H.F., Dong, Y., Yang, B. and Zhao, M.M. (2012), Macroporous resin purification behavior of phenolics and rosmarinic acid from *Rabdosia serra* (MAXIM.) HARA leaf. *Food Chemistry*, **130** (2), 417-424.

Full Text: [2012\Foo Che130, 417.pdf](2012/Foo%20Che130,%20417.pdf)

Abstract: In the present study, the performance and separation characteristics of two macroporous resins for the purification of phenolics from *Rabdosia serra* were evaluated. Both HP-20 and XAD-7HP resins were effective for phenolics enrichment, with insignificant difference of adsorption/desorption behaviors, according to their chemical and physical properties. The pseudo-second-order kinetics model was the most favorable for illustrating the whole exothermic adsorption process, which was affected by the mutual effects of boundary layer diffusion and intraparticle diffusion kinetics. After treatment with gradient elution on resin columns, phenolics (from 16.66% to 67.87% by HP-20 and to 58.81% by XAD-7HP), antioxidants (3-4 times more than original) and rosmarinic acid (from 10.14% to 67.26% by HP-20 and to 63.16% by XAD-7HP) were enriched in 30% ethanol fractions. The production of highly concentrated phenolics and rosmarinic acid might expand the application of Rabdosia serra as a bioactive agent for both the food industry and pharmacy. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Antioxidant Activities, Antioxidants, Capacity, Components, Diterpenoids, Extracts, Kinetics, L., Macroporous Resin, Phenolics, *Rabdosia serra*, Rosmarinic Acid, System

? Li, C., Xue, F., Xu, Y.X., Ren, C.L. and Pan, S.Y. (2012), Influence of different gel complexes on flavour and colour change in Chongcai paste during storage. *Food Chemistry*, **130** (3), 632-637.

Full Text: [2011\Foo Che130, 632.pdf](2011/Foo%20Che130,%20632.pdf)

Abstract: Four types of Chongcai paste (pectin/xanthan/Chongcai, pectin/CMC-Na/Chongcai, CMC-Na/xanthan/Chongcai and pectin/CMC-Na/xanthan/Chongcai) were prepared, and the changes of flavour and colour of pastes were studied during fifteen days of storage. Nine pungent volatiles were detected in Chongcai paste; among the nine volatiles, ally! isothiocyanate (AITC) was the major component, and two volatiles (1-isothiocyanatobutane and n-pentylisothiocyanate) were detected in Cruciferae family plants for the first time. Pectin/xanthan complex applied in the paste proved to have the best capability in holding flavour, and CMC-Na/xanthan was the worst. A pseudo-second order kinetics model was applied to describe the colour change of pastes during storage for the first time, and the results suggested that the colour degradation could be well interpreted by the pseudo-second order kinetic model. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Arabidopsis-Thaliana, Cauliflower, Chongcai Paste, Colour Degradation, Degradation Kinetics, Gel Complexes, Guar Gum, Kinetic, Kinetic Model, Kinetics, Plants, Pseudo Second Order, Pungent Volatiles, Release, Removal, Systems, Volatile Components, Xanthan

# Title: Food Control

Full Journal Title: [Food Control](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5038&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=20407eef5e7335bca25de2f0a002fa06)

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Publisher: Elsevier Sci Ltd, Oxford

Publisher Address: The Boulevard, Langford Lane, Kidlington, Oxford Ox5 1gb, Oxon, England

Subject Categories:

Biotechnology & applied microbiology: Impact Factor 0.903, / (2000)

Food science & technology: Impact Factor 0.903, / (2000)

Ramalho, R., Afonso, A., Cunha, J., Teixeira, P. and Gibbs, P.A. (2001), Survival characteristics of pathogens inoculated into bottled mineral water. *Food Control*, **12** (5), 311-316.

Full Text: [F\Foo Con12, 311.pdf](F/Foo%20Con12,%20311.pdf)

Abstract: To assess the risk of contracting a waterborne disease from mineral water and to implement control systems in the mineral water industry, knowledge of the factors affecting the survival and multiplication of non-indigenous bacteria is needed. The survival of *Escherichia* coli, Salmonella typhimurium, Staphylococcus aureus and Yersinia enterocolitica inoculated into a Portuguese bottled mineral water was investigated under different conditions: light and dark, different recovery media, presence or absence of autochthonous flora and different ages of water, based on their culturability. For all the pathogenic bacteria higher survival was obtained under dark conditions of storage and when enumeration was performed on non-selective media. Survival of E. coli, Y. enterocolitica and S. typhimurium was longer in fresh water than in old water; results obtained with S. aureus were not conclusive. Survival of E. coli, Y. enterocolitica and S. typhimurium was lower in non-sterile mineral water while the survival of S. aureus was lower in sterilized mineral water. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Pathogens, Mineral Water, Hazard, *Escherichia*-Coli, Allochthonous Bacteria, *Campylobacter*-Jejuni, Drinking-Water, Visible-Light, Lake Water, Growth, Inactivation, Microbiology, Seawater

? Ilic, S., Rajic, A., Britton, C.J., Grasso, E., Wilkins, W., Totton, S., Wilhelm, B., Waddell, L. and LeJeune, J.T. (2012), A scoping study characterizing prevalence, risk factor and intervention research, published between 1990 and 2010, for microbial hazards in leafy green vegetables. *Food Control*, **23** (1), 7-19.

Full Text: [2012\Foo Con23, 7.pdf](2012/Foo%20Con23,%207.pdf)

Abstract: A scoping study was conducted to identify all published prevalence, risk factor, and intervention research investigating 16 microbial hazards in leafy green vegetables and to evaluate the volume, main characteristics, basic aspects of methodological soundness and/or reporting, and the main knowledge gaps and research needs. Our study included a comprehensive literature search, a replicable two-level relevance screening (abstract and article levels), and a two-phase quality assessment and data extraction (article level). All steps were conducted by two independent reviewers following general principles of systematic review methodology. From the initial 7961 citations, 657 articles were relevant, reporting one or more research themes: prevalence (314 studies), risk factor (472) and intervention research (269). These articles were published in 190 different scientific journals, 15% between 1990 and 2000, and the remaining 85% after year 2000. Sixty-five percent of studies was conducted in the USA, Canada, or Europe. Over 70% of all studies investigated lettuce. Collectively, four leafy greens (lettuce, cabbage, spinach, and fresh leafy herbs) and microorganism (Escherichia coil, Salmonella, Listeria and coliforms) combinations accounted for almost 80% of relevant studies. Forty-one percent of the research was conducted at the processing stage of production. Lack of reporting sufficient data and/or replicable laboratory protocols (first phase assessment) resulted in exclusion of 60% of relevant articles. In total, 231 papers were retained following second phase quality evaluation, and only 152 (20% of all relevant articles) met all ranking criteria. A lack of well designed, executed, and reported prevalence studies with sampled populations representative of the target populations and of experimental studies investigating the efficacy of intervention(s) under real-life conditions was observed. A limited number of articles investigating commonly accepted important risk factors, for example worker hygiene and health, equipment sanitation, and wildlife, was identified. We highlight research areas with the data potentially feasible for full systematic review-meta-analysis methodology and areas warranting additional investigation. The resulting information is necessary for the establishment of evidence-informed guidelines for food safety enhancement. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Assessment, Bibliometric Analysis, Canada, Citations, Efficacy, Enhancement, Escherichia-Coli O157-H7, Europe, Evaluation, Experimental, Extraction, Food Safety, Fruit, Guidelines, Health, Information, Intervention, Journals, Knowledge, Leafy Green Vegetables, Lettuce, Literature, Management, Metaanalysis, Methodological Assessment, Methodology, Microbial Hazards, Papers, Prevalence, Quality, Ranking, Research, Review, Risk, Risk Factor, Risk Factors, Safety, Scoping Study, Screening, Systematic, Systematic Review, USA, Vegetables

# Title: Food Microbiology

Full Journal Title: [Food Microbiology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6800&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=645764eb56a92f6d8a3701f644096152)

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Journal Country/Territory: England

Language: English

Publisher: Academic Press Ltd

Publisher Address: 24-28 Oval Rd, London NW1 7DX, England

Subject Categories:

Biotechnology & Applied Microbiology: Impact Factor

Food Science & Technology Microbiology: Impact Factor

Bhaskar, N., Setty, T.M.R., Mondal, S., Joseph, M.A., Raju, C.V., Raghunath, B.S. and Anantha, C.S. (1998), Prevalence of bacteria of public health significance in the cultured shrimp (*Penaeus monodon*). *Food Microbiology*, **15** (5), 511-519.

Full Text: [F\Foo Mic15, 511.pdf](F/Foo%20Mic15,%20511.pdf)

Abstract: The prevalence of some human pathogenic bacteria, namely Salmonella, Vibrio s and *Listeria* monocytogenes, in shrimps under different stages of farming operations was determined by using standard methods. Salmonella and Vibrio were present in ail samples analysed. *Listeria* s was absent from all the samples except clam meat analysed during the farming phase and sediment and shrimps at harvest. A poor correlation was observed between the level of indicator organisms (coliforms) and the incidence of these pathogens, indicating that these pathogens are a part of the natural microfauna of the shrimp culture environment. (C) 1998 Academic Press.

# Title: Food Research International

Full Journal Title: [Food Research International](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5040&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=a9f2353a3e5683582b2af26661ad545a)

ISO Abbreviated Title: Food Res. Int.

JCR Abbreviated Title: Food Res Int

ISSN: 0963-9969

Issues/Year: 9

Journal Country/Territory: United States

Language: English

Publisher: Elsevier Science BV, Amsterdam

Publisher Address: PO Box 211, 1000 Ae Amsterdam, Netherlands

Subject Categories:

Food Science & Technology: Impact Factor 0.707, / (2000)

Guillon, F. and Champ, M. (2000), Structural and physical properties of dietary fibres, and consequences of processing on human physiology. *Food Research International*, **33** (3-4), 233-245.

Full Text: [F\Foo Res Int33, 233.pdf](F/Foo%20Res%20Int33,%20233.pdf)

Abstract: Dietary fibre encompasses very diverse macromolecules exhibiting a large variety of physico-chemical properties. They might be naturally present in the food (in cell walls of vegetables and fruits, for instance) or introduced in the food to improve their nutritional properties (e.g. bran in bread products) or their physical characteristics (e.g, gelling agents or improved resistance to storage). The properties that are nutritionally relevant are mainly the particle size and bulk volume, the surface area characteristics, the hydration and rheological properties, and the adsorption or entrapment of minerals and organic molecules. Amongst these properties, the viscosity and ion exchange capacity are the main contributors to metabolic effects (glucose and lipid metabolisms) whereas fermentation pattern, bulking effect and particle size are strongly involved in effects on colonic function. Technological treatments can modify the physico-chemical properties of the fibre. This can be further exploited to optimise both their techno-functional and physiological properties. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Dietary Fibre, Physico-Chemical Properties, Glycaemic Index, Lipid Metabolism, Short Chain Fatty Acids, Fibre Rich Foods, Sugar-Beet Fiber, Physicochemical Properties, Extrusion-Cooking, Cell-Wall, Polysaccharides, Fermentation, Psyllium, Flora, Foods, Bran

Liceaga-Gesualdo, A., Li-Chan, E.C.Y. and Skura, B.J. (2000), Antimicrobial effect of lactoferrin digest on spores of a Penicillium sp isolated from bottled water. *Food Research International*, **34** (6), 501-506.

Full Text: [F\Foo Res Int34, 501.pdf](F/Foo%20Res%20Int34,%20501.pdf)

Abstract: Fungal growth in bottled water has caused the bottled water industry a series of recalls and rejected products. Microorganisms isolated from bottled water were cultured and identified as Penicillum sp. A spore stock suspension was prepared by washing spores after 7 days incubation at 25 degreesC on potato dextrose agar. Lactoferrin (5% w/v), isolated from cheese whey, was digested at 37 degreesC for 4 h using porcine pepsin (3% w/w). For the antimicrobial assay, a 96 well microplate containing peptone yeast glucose medium and known concentrations of pepsin digest containing lactoferricin, was inoculated with the spore suspension (ca. 7×104 ml-1 spores). Culture optical density was monitored at 595 nm. Lactoferricin at concentrations of 60 and 300 µg/ml inhibited spore germination and mycelial growth for up to 9 and 21 days at 30 degreesC, respectively, whereas a bovine serum albumin digest, used as a negative control, had no inhibitory effect on the spores. Lactoferricin may have potential as an antifungal agent in bottled water. (C) 2001 Published by Elsevier Science Ltd.

Keywords: Bottled Water, Lactoferrin Digest, Fungal Spores, Microbiological Quality, Bovine Lactoferrin, Canada, Sold

? Peng, F., Ren, J.L., Xu, F., Bian, J., Peng, P. and Sun, R.C. (2010), Comparative studies on the physico-chemical properties of hemicelluloses obtained by DEAE-cellulose-52 chromatography from sugarcane bagasse. *Food Research International*, **43** (3), 683-693.

Full Text: [2010\Foo Res Int43, 683.pdf](2010/Foo%20Res%20Int43,%20683.pdf)

Abstract: Water- and alkali-soluble hemicelluloses isolated from dewaxed sugarcane bagasse were sub-fractionated on DEAE-cellulose-52 chromatography and obtained six hemicellulosic sub-fractions by eluting with water, 0.1 M and 0.3 M NaG aqueous solution, respectively. Sugar composition and molecular weight analysis revealed that the lower molecular weight (14,180-43,590 g mol(-1)) and more branches of hemicelluloses could be extracted by the hot water, which are rich in glucose, galactose, and xylose, while the higher molecular weight (75,430-138,170 g mol(-1)) and more linear hemicelluloses were able to be dissolved into 1% NaCH aqueous solution, which are rich in xylose, principally resulting from L-arabino-(4-O-methyl-glucurono)-D-Xylans. In addition, it was found that with increasing the concentration of NaCl (aqueous), the hemicellulosic sub-fractions with both higher arabinose to xylose ratio and higher molecular weight were eluted. Based on the FT-IR, sugar composition and (1)H and (13)C NMR comparative studies, the alkali-soluble hemicellulosic sub-fractions had a classical structure, with a backbone of beta-(1 -> 4)-linked xylosyl residue substituted with arabinose at C-2 and/or C-3 of main chain, whereas the difference may occur in the distribution of branches along the xylan backbone. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Sugarcane Bagasse, Hemicelluloses, Deae-Cellulose-52 Chromatography, Water-Soluble Arabinoxylans, Wheat-Straw, Structural-Characterization, Alkali, Extraction, Lignin, Xylan, Bran, Cellulose, Polymers

? Erdogan-Orhan, I. and Kartal, M. (2011), Insights into research on phytochemistry and biological activities of *Prunus armeniaca* L. (apricot). *Food Research International*, **44** (5), 1238-1243.

Full Text: [2011\Foo Res Int44, 1238.pdf](2011/Foo%20Res%20Int44,%201238.pdf)

Abstract: Prunus armeniaca L (Rosaceae) is an important medicinal edible plant species commonly known as “apricot”. Apricot is one of the most delicious and commercially traded fruits in the world. The plant is rich in mono- and polysaccharides, polyphenols, fatty acids and sterol derivatives, carotenoids, cyanogenic glucosides, and volatile components due to its appealing smell. P. armeniaca has been also investigated for various biological activities such as antimicrobial, antimutagenic, inhibitory activity against several enzymes, cardioprotective, anti-inflammatory and antinociceptive as well as antioxidant activity. Among these activities, antioxidant activity of apricot has been studied extensively and the plant displayed a high antioxidant effect in both in vitro and in vivo test systems. In this review, the relevant literature summary is given on phytochemistry and biological activity reports published on apricot. The literature survey for this review was performed using the key words “Prunus armeniaca and apricot” through the search Scopus, ScienceDirect, Pubmed, and Web of Science data bases between 1950 and 2010. (C) 2010 Published by Elsevier Ltd.

Keywords: Activities, Antioxidant Capacity, Apricot, Aroma Compounds, Beta-Carotene, Biological Activity, Carotenoid Content, Carotenoids, Cyanogenic Glycosides, Fatty Acids, Fatty-Acid, Fruit Product Authenticity, Fruits, In Vivo, Kernel Oil, Literature, Nitric-Oxide Synthase, Phytochemistry, Plant, Polyphenols, Prunus Armeniaca, Research, Review, Rosaceae, Science, Scopus, Smell, Survey, Volatile Constituents, Web of Science

# Title: Food Science and Technology International

Full Journal Title: Food Science and Technology International

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Journal Country/Territory:

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Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ayala-Gascon, M., Aleixandre-Benavent, R. and Gandia-Balaguer, A. (2011), Eduardo Primo Yúfera, founder of *Revista de Agroquímica y Tecnología de Alimentos* and pioneer on Food Science and Technology research in Spain. *Food Science and Technology International*, **17** (6), 549-556.

Full Text: [2011\Foo Sci Tec Int17, 549.pdf](2011/Foo%20Sci%20Tec%20Int17,%20549.pdf)

Abstract: Eduardo Primo Yufera was the founder and director of the Instituto de Agroquimica y Tecnologia de Alimentos (IATA, 1957-1974) until he was appointed president of the Consejo Superior de Investigaciones Cientificas (CSIC). His aim to publicize food science led him to create the Revista de Agroquimica y Tecnologia de Alimentos in 1961, the forerunner of this journal, Food Science and Technology International, which he directed until 1977. Of his scientific output, 50% has been published in this journal. He is considered to be the promoter and exponent of Food Science and Technology and Chemical Ecology in Spain as well as the instigator of the country’s innovation model (R&D and innovation). In his work, he was able to combine basic research excellence and socially relevant applied research to move both science and society forward. He was an example and inspiration to many colleagues and followers. The aim of this study is to highlight the influence and importance of Primo Yufera in the formation, development and consolidation of the journal Revista de Agroquimica y Tecnologia de Alimentos, and to appraise his scientific contribution to this journal.

Keywords: Bibliometrics, Biography, Coauthorship Networks, Contribution, Csic, Development, Ecology, Eduardo Primo Yufera, Iata, Innovation, Institutional Collaboration, International, Journal, Model, Patterns, Research, Revista De Agroquimica Y Tecnologia De Alimentos, Science, Scientific Output, Spain, Technology

# Title: Food Technology

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Publisher: Inst Food Technologists

Publisher Address: 525 West Van Buren, Ste 1000, Chicago, IL 60607-3814

Subject Categories:

Food Science & Technology: Impact Factor 0.936 (2003)

? Schwartzberg, H.G. and Chao, R.Y. (1982), Solute diffusivities in leaching processes. *Food Technology*, **36** (2), 73-86.

# Title: Food Technology and Biotechnology

Full Journal Title: Food Technology and Biotechnology

ISO Abbreviated Title: Food Technol. Biotechnol.

JCR Abbreviated Title: Food Technol Biotech

ISSN: 1330-9862

Issues/Year: 4

Journal Country/Territory: Croatia

Language: English

Publisher: Faculty Food Technology Biotechnology

Publisher Address: Univ Zagreb, Kacieceva 23, 41000 Zagreb, Croatia

Subject Categories:

Biotechnology & Applied: Impact Factor

Microbiology: Impact Factor

Food Science & Technology: Impact Factor

? Filipovic-Kovacevic, Z., Sipos, L. and Briski, F. (2000), Biosorption of chromium, copper, nickel and zinc ions onto fungal pellets of *Aspergillus niger* 405 from aqueous solutions. *Food Technology and Biotechnology*, **38** (3), 211-216.

Abstract: Fungal mycelium pellets of *Aspergillus niger* 405 were used for adsorption of different metal ions. The biosorption of Cu2+, Zn2+, Ni2+ and CrO42-was studied over a range of metal ion concentrations, adsorption time, pH and co-anions, The process of uptake obeyed both the Langmuir and Freundlich isotherms. The results showed better biosorption for the first three metal ions at pH ranging from 4 to 6. On the contrary, pH values from 3 to 7 had no influence on sorption of chromium. Comparison of metal uptake in single and multi-component aqueous solutions of Cu-Zn-Ni-Cr was discussed. Fungus *Aspergillus niger* 405 showed a good affinity for binding of Cu2+, Zn2+ and Ni2+ ions in single, while in multi-component solution it occurred only for copper and zinc.

Keywords: Fungus *Aspergillus niger* 405, Heavy Metals, Biosorption, Single and Multi-Component Metal Aqueous Solutions, Heavy-Metal Biosorption, *Saccharomyces-Cerevisiae*, *Rhizopus-arrhizus*, *Pseudomonas-Aeruginosa*, Waste-Water, Removal, Cadmium, Biomass, Lead, Bioaccumulation

# Title: Forensic Science International

Full Journal Title: [Forensic Science International](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5041&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=ac82239fa9cbda5cc2ef1b4e015e45f3)

ISO Abbreviated Title: Forensic Sci.Int.

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Language: Multi-Language

Publisher: Elsevier Sci Ireland Ltd

Publisher Address: Customer Relations Manager, Bay 15, Shannon Industrial Estate Co, Clare, Ireland

Subject Categories:

Medicine, Legal: Impact Factor 1.052, / (2001)

Jones, A.W. (1993), The impact of Forensic Science Journals. *Forensic Science International*, **62** (3), 173-178.

Full Text: [F\For Sci Int62, 173.pdf](F/For%20Sci%20Int62,%20173.pdf)

Keywords: Bibliometrics, Peer-Review, Citations, Impact Factor, Citation Analysis, Policy

Jones, A.W. (2003), Impact Factors of forensic science and toxicology journals: What do the numbers really mean? *Forensic Science International*, **133** (1-2), 1-8.

Full Text: [F\For Sci Int133, 1.pdf](F/For%20Sci%20Int133,%201.pdf)

Abstract: This article presents review and opinion about the use and abuse of journal impact factors for judging the importance and prestige of scientific journals in the field of forensic science and toxicology. The application of impact factors for evaluating the published work of individual scientists is also discussed. The impact factor of a particular journal is calculated by dividing the number of current year citations to a journal’s articles that were published in the previous 2 years by the total number of citable items (articles and reviews) published in the same 2-year period. Journal impact factors differ from discipline to discipline and range from 0 for a journal whose articles are not cited in the previous 2 years to 46 for a journal where the average recent article is cited 46 times per year. The impact factor reflects the citation rate of the average article in a journal and not a specific article. Many parameters influence the citation rate of a particular journal’s articles and, therefore, its impact factor. These include the visibility and size of the circulation of the journal including availability of electronic formats and options for on-line search and retrieval. Other things to consider are editorial standards especially rapid and effective peer-reviewing and a short time lag between acceptance and appearance in print. The number of self-citations and citation density (the ratio of references to articles) and also the inclusion of many review articles containing hundreds of references to recently published articles will boost the impact factor. Judging the importance of a scientist’s work based on the average or median impact factor of the journals used to publish articles is not recommended. Instead an article-by-article citation count should be done, but this involves much more time and effort. Moreover, some weighting factor is necessary to allow for the number of co-authors on each article and the relative positioning of the individual names should also be considered. Authors should submit their research results and manuscripts to journals that are easily available and are read by their peers (the most interested audience) and pay less attention to journal impact factors. To assess the true usefulness of a person’s contributions to forensic science and toxicology one needs to look beyond impact factor and citation counts. For example, one might consider whether the articles contained new ideas or innovations that proved useful in routine forensic casework or are widely relied upon in courts of law as proof source.

Keywords: Authorship, Bibliometrics, Forensic Science, Impact Factor, Journals, Toxicology

Chaudhry, R. and Pant, S.K. (2004), Identification of authorship using lateral palm print: A new concept. *Forensic Science International*, **141** (1), 49-57.

Full Text: [F\For Sci Int141, 49.pdf](F/For%20Sci%20Int141,%2049.pdf)

Abstract: Identification of individual by signature examination could be improved by the lateral palm print examination. By the use of new technique discussed by the author in this paper, the forensic expert can find out very useful information about the writer of writings even without going into the depth of questioned document/signature examination and without the formal or informal handwriting exemplars. The document expert with little more knowledge of the palm print can identify whether the signature is done by hand/leg/anything else, whether the author is right handed or left handed, the approximate age of the author, whether the signature is genuine or forged. Such information of author would be very much useful in elimination of the list of suspects of anonymous letters. In order to fix the authorship, standard and disputed lateral palm prints can be examined either with photographic superimposition technique or with the statistical study of the outline of the lateral palm print or with the standard method as implied in fingerprint examination. The evidential value of such lateral palm print can be placed at par with the finger prints in the court of law and could be placed right on the top of all other scientific evidences.

Keywords: Lateral Palm Print, Handwriting Examination, Line of Writing, Forged Signatures, Identification of Author

? Jones, A.W. (2007), The distribution of forensic journals, reflections on authorship practices, peer-review and role of the impact factor. *Forensic Science International*, **165** (2-3), 115-128.

Full Text: [2007\For Sci Int165, 115.pdf](2007/For%20Sci%20Int165,%20115.pdf)

Abstract: This article presents information about journals specializing in the forensic sciences and legal medicine, their development and distribution and their current status as reflected in the journal impact factor. The first scientific journal devoted to spreading information and reporting new developments in social and legal medicine seemingly originated in Germany about 150 years ago. The official journal of the American Academy of Forensic Sciences (*Journal of Forensic Sciences*, JFS) was founded in 1956 and has enjoyed 50 years of scholarly publishing. The two leading European journals specializing in forensics are *Forensic Science International* (FSI) and *International Journal of Legal Medicine* (IJLM). Besides the size of the circulation, the readership numbers, the quality of the editorial staff and the peer-reviewers, the number of submitted and accepted manuscripts, considerable interest has focused on the journal’s impact factor as a measure of prestige. The 2006 impact factor of a certain journal is derived by counting the number of citations in 2006 to all material published in the journal in the previous 2 years (2004 and 2005) and dividing this total by the number of citable items (articles and reviews) published in the same 2 years. Impact factors for several thousand scientific journals are compiled and published by a company called Thomson Institute for Scientific Information (Thomson ISI) and are available on-line via the database Journal Citation Reports. Forensic journals are grouped within the subject category Medicine, Legal, which currently comprises nine journals a few of which are seemingly unrelated to mainstream forensics. The top-ranked forensic journal in terms of its impact factor was IJLM with a score of just over 2.0 in 2004. This means that the average article published in 2003 and 2002 was cited twice per year in the 2-year window after publication. Impact factors of forensic journals are fairly low in comparison with many other disciplines, probably because of the small size of the field, fewer active researchers and less pressure to publish. The relatively low impact factors of forensic journals should be less of a concern than ensuring that manuscripts receive a rigorous and preferably an open peer-review prior to acceptance for publication. The information, conclusions and opinions published in forensic science journals might one day be proffered as evidence in criminal or civil litigation.

Keywords: Association, Authorship, Bibliometrics, Biomedical-Research, Citations, Comparison, Current, Development, Distribution, Forensic, Forensic Science, Forensic Science Journals, Gatekeepers, Germany, Impact, Impact Factor, Impact Factors, Information, Institute For Scientific Information, Isi, Journal, Journal Citation Reports, Journals, Legal-Medicine, Low, Medicine, Misconduct, Peer Review, Peer-Review, Pressure, Publication, Publishing, Quality, Reporting, Research Assessment Exercise, Reviews, Role, Science, Sciences, Scientific Journals, Size, Social, Spreading

# Title: Foresight

Full Journal Title: Foresight

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Daim, T., Monalisa, M., Dash, P. and Brown, N. (2007), Time lag assessment between research funding and output in emerging technologies. *Foresight*, **9** (4), 33-44.

Full Text: [2007\Foresight9, 33.pdf](2007/Foresight9,%2033.pdf)

Abstract: Purpose - In this paper, an analysis is presented of the research funding towards nanotechnology at the National Nanotechnology Initiative (NNI) and its relationship to the research output in Nanoscope, an application area of nanotechnology. Design/methodology/approach - The paper analyzes the data collected from 1997 till 2006 and derives a definitive time lag between the allocation of research funds and issued patents and published journals. This assessment is achieved by identifying growth trends in patents, funds and publications and doing a curve-fit analysis using the Fisher-Pry model. Linear regression analysis is used to show the correlation between the funding and research outputs. Alongside, non-linear programming objective function optimization technique is used to derive the time lag in years for each of the research outputs from the year of funds granted. Findings - This paper demonstrated that there is a strong correlation between research funding and different research outputs. The time lag between funding and patents issued is evident from the patent trend analysis and Bibliometric analysis. In the case of Nanoscope, the patent time lag was found to be approximately five to six years, for journal article it was approximately two to three years and conference presentations happened right after the funding. The research outputs showed similar trends and were found to be interdependent as evident from our mathematical analysis. Research limitations/implications - While this study has shown that lag times exist within the chosen example of Nanoscope, and furthermore can be calculated to a precise degree, further data points in terms of additional emerging technologies would support the hypothesis in a more general term. A future study can look at developing technology roadmaps of the future based on the funding happening today. Originality/value - The work takes bibliometric analysis to a further intelligence and establishes key linkages between these indicators.

Keywords: Allocation, Analysis, Application, Assessment, Bibliometric, Bibliometric Analysis, Correlation, Data, Developing, Emerging Technologies, Function, Funding, General, Growth, Indicators, Journal, Journal Article, Journals, Linear Regression, Model, Nanotechnology, Optimization, Patent, Patents, Programming, Publications, Regression, Regression Analysis, Research, Research Funding, Right, Roadmaps, Support, Technologies, Technology, Term, Till, Trend, Trend Analysis, Trends, Work

# Title: Forest Ecology and Management

Full Journal Title: [Forest Ecology and Management](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5042&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=26b6783ee9d340da41c7bc5c54a08b7f)

ISO Abbreviated Title: For. Ecol. Manage.

JCR Abbreviated Title: Forest Ecol Manag

ISSN: 0378-1127

Issues/Year: 21

Journal Country/Territory: Netherlands

Language: English

Publisher: Elsevier Science BV

Publisher Address: PO Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Forestry: Impact Factor 0.982, 6/29 (2000)

Freer-Smith, P.H. and Read, D.B. (1995), The relationship between crown condition and soil solution chemistry in oak and sitka spruce in England and Wales. *Forest Ecology and Management*, **79** (3), 185-196.

Full Text: [F\For Eco Man79, 185.pdf](F/For%20Eco%20Man79,%20185.pdf)

Abstract: In recent years the critical loads concept has become the primary approach for formulating research on pollutant impacts and setting targets for pollution abatements. For forest soils critical loads have been set on the assumption that base cation uptake and tree growth an decreased when ratios of Ca + Mg to Al in soil solution fall below 1.0. Forests have been monitored in the UK since 1984 under EU Air Pollution Regulations and the UN-ECE Convention on Long Range Transboundary Air Pollution (LRTAP) in order to identify any pollutant-related decline in forest condition. The soil solution chemistry of six oak and six Sitka spruce plots from these surveys were analysed in the work reported here. (Ca + Mg)/Al was found to be above 1.0 at all sites in the organic and mineral soil horizons. Large ratios resulted from both large base cation concentrations and generally low Al values. Surprisingly, poorest tree condition (crown density) was associated with large Ca + Mg concentrations and large (Ca + Mg)/Al for spruce. This correlation contrasts in direction with the relationships between (Ca + Mg)/Al and tree growth which have been used to calculate forest soil critical loads. However, UK values of this ratio lay entirely above the threshold for damage.

Keywords: Quercus Petraea, Quercus Robur, Picea Sitchensis, Crown Density, Soil Critical Load

# Title: Forest Policy and Economics

Full Journal Title: [Forest Policy and Economics](http://www.sciencedirect.com/science/journal/13899341)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Wang, S., Liu, C. and Wilson, B. (2007), Is China in a later stage of a U-shaped forest resource curve? A re-examination of empirical evidence. *Forest Policy and Economics*, **10** (1-2), 1-6.

Full Text: [2007\For Pol Eco10, 1.pdf](2007/For%20Pol%20Eco10,%201.pdf)

Abstract: Amidst surging interest in the policy implications of a hypothetical environmental Kuznets curve, a claim has emerged recently arguing that China has entered a later stage of a U-shaped forest resource curve. Using published data for the past two decades, we show that there is a lack of empirical evidence supporting that claim. At the level of provinces in China, forest cover and per capita GDP appear to have a nonlinear, positive relationship, but regression results do not lend support to the existence of a nicely-behaved U-shaped curve. The findings suggest that policy makers need to be cautious about the statement that a particular jurisdiction is in an advanced stage of forest resources management.

# Title: Forest Products Journal

Full Journal Title: [Forest Products Journal](http://www.scopus.com/scopus/source/sourceInfo.url?sourceId=24976)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Han, J.S., Min, S.H. and Kim, Y.K. (2005), Removal of phosphorus using AMD-treated lignocellulosic material. *Forest Products Journal*, **55** (11), 48-53.

Abstract: Excess nutrients, including phosphorus, can cause eutrophication in surface water and reservoirs. We tested the phosphate removal capacity of juniper fiber through isotherm, kinetic, column, and field tests. Heavy metals from an acid mine drainage (AMD) site were precipitated on the surface of jumper fiber. The modified fiber was tested in laboratory-scaled batch and column tests. Elemental analysis showed that soluble iron species deposited on the modified fiber acted as an inorganic adsorbent for anions; sorption capacity of this juniper fiber was higher than that of other conventional adsorbents. A pseudo second-order kinetic model fitted well for sorption of phosphorus onto the modified medium. The modified lignocellulosic material was used to remove phosphorus from wastewater from two dairy farms in the Catskill/Delaware watershed. The fiber was installed inside a filter box, forming a nonwoven mat. Phosphorus removal efficiency of the material was about 41 percent at 59 mg/L of influent phosphorus concentration.

Keywords: Waste-Water, Phosphate, Adsorption, Iron, Exchangers, Kinetics, Sorbent, Binding, Ni(II), Ions

# Title: Forestry Chronicle

Full Journal Title: Forestry Chronicle

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0015-7546

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chancey, H.W.R. (1968), Use of peatlands in forestry and agriculture. *Forestry Chronicle*, **44** (6), 40-??.

Full Text: For Chr44, 40.pdf

? Cheveau, M., Imbeau, L., Drapeau, P. and Belanger, L. (2008), Current status and future directions of traditional ecological knowledge in forest management: A review. *Forestry Chronicle*, **84** (2), 231-243.

Full Text: [2008\For Chr84, 231.pdf](2008/For%20Chr84,%20231.pdf)

Abstract: In the last 25 years, the number of published studies that refer to traditional ecological knowledge (TEK) has constantly increased, with now more than 200 papers published each year. The objective of this review was to determine how this knowledge is used in current forest management around the world, and how local communities are involved in forest management planning. Published papers from 1983 to 2005 relating to TEK were found using the ISI Web of Science database. Despite the growing amount of literature published on TEK, we found only 21 studies that specifically address forest management per se. In these studies, TEK integration took different paths: using traditional management rules as a framework (five studies), using value maps to adapt practices in time and space (three studies), or by a zoning process that divides the land into areas in which different land uses are emphasized (six studies). Some community involvements are “active” with co-management committees composed of stakeholders (including community members), each having a voice; some are “passive” with external managers using criteria and indicators previously developed from community values and objectives. Although important changes in mentality and firm political decisions are still required before more efficient partnership between TEK and western science is reached in forest management planning, our review showed that Canadian initiatives proposed promising processes that could ensure better TEK incorporation and improved community participation.

Keywords: Araucaria-Araucana Forest, Challenges, Community Participation, Ethnobotany, Expert Knowledge, First Nations, Forest Management Planning, Indicators, Indigenous Knowledge, ISI, Knowledge, Land-Use, Literature, Management, Midzichenda Tribes, Papers, Plant Uses, Resource-Management, Review, Science, Sustainable Forest Management, Tek, Traditional, Traditional Ecological Knowledge, Web of Science

# Title: Forpride Digest

Full Journal Title: Forpride Digest

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Laxamana, N.B. (1981), Evaluation of experimental activated Philippine wood and non-wood charcoals employing iodine adsorption. *Forpride Digest*, **10** (3/4), 7-12.

Full Text: 1981\For Dig10, 7.pdf

Abstract: Charcoal from 8 timber species and from coconut trunk sawdust was activated by (a) the ZnCl2 and (b) the high-temp. heat method, and activated samples evaluated by the iodine adsorption test. Carbons activated by (a) gave higher iodine values than those activated by (b). Carbons from manicnic (Palaquim teninpetiolatum [Palaquium tenuipetiolatum]), dita (Alstonia scholaris) and amugis (Koorder[s]iodendron pinnatum) charcoals had iodine values higher than commercial active carbon when activated by either (a) or (b). Use of these 3 species for active carbon production should increase their economic value.

# Title: Forschende Komplementarmedizin

Full Journal Title: Forschende Komplementarmedizin

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Agdal, R., Hjelmborg, J.V. and Johannessen, H. (2011), Energy healing for cancer: A critical review. *Forschende Komplementarmedizin*, **18** (3), 146-154.

Full Text: 2011\For Kom18, 146.pdf

Abstract: Background: This article explores the evidence base of efficacy and effectiveness of ‘energy healing’ for cancer patients. The term ‘energy healing’ refers to a wide variety of therapies which are based on the premise that the healer transfers energy to the patient. Among the most researched forms of energy healing are reiki, therapeutic touch and healing touch. Material and Methods: PubMed, AMED, JStor, Social Science Citation Index and PsycInfo databases were searched, and articles were rated according to the SIGN (Scottish Intercollegiate Guidelines Network) quality scale. Six quantitative and two qualitative studies on the efficacy and effectiveness of energy healing for cancer patients met the inclusion criteria. Results: None of the studies are of a size or quality that allows to draw reliable conclusions. The results of the studies are, however, interesting and should be considered when developing new studies and hypotheses on working mechanisms. Conclusion: The existing research does not allow conclusions regarding the efficacy or effectiveness of energy healing. Future studies should adhere to existing standards of research on the efficacy and effectiveness of a treatment, and given the complex character of potential outcomes, cross-disciplinary methodologies may be relevant. To extend the scope of clinical trials, psychosocial processes should be taken into account and explored, rather than dismissed as placebo.

Keywords: Alternative Medicine, Cancer, Citation, Clinical Trials, Complementary, Databases, Effectiveness, Efficacy, Energy, Energy Healing, Healing Touch, Outcomes, Pain, Perceptions, Pubmed, Reiki, Research, Review, Science Citation Index, Standards, Therapeutic Touch, Therapeutic Touch, Trial, Tumor-Cell Proliferation, Women

# Title: Fractals-Complex Geometry Patterns and Scaling in Nature and Society

Full Journal Title: [Fractals-Complex Geometry Patterns and Scaling in Nature and Society](http://www.worldscinet.com/fractals/17/1704/S0218348X091704.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kostoff, R.N., Shlesinger, M.F. and Malpohl, G. (2004), Fractals text mining using bibliometrics and database tomography. *Fractals-Complex Geometry Patterns and Scaling in Nature and Society*, **12** (1), 1-16.

Full Text: [2004\Fra-Com Geo Pat Sca Nat Soc12, 1.pdf](2004/Fra-Com%20Geo%20Pat%20Sca%20Nat%20Soc12,%201.pdf)

Abstract: Database Tomography (DT) is a textual database analysis system consisting of two major components: (1) algorithms for extracting multi-word phrase frequencies and phrase proximities (physical closeness of the multi-word technical phrases) from any type of large textual database, to augment (2) interpretative capabilities of the expert human analyst. DT was used to obtain technical intelligence from a Fractals database derived from the Science Citation Index/Social Science Citation Index (SCI). Phrase frequency analysis by the technical domain experts provided the pervasive technical themes of the Fractals database, and the phrase proximity analysis provided the relationships among the pervasive technical themes. Bibliometric analysis of the Fractals literature supplemented the DT results with author/journal/institution publication and citation data.

Keywords: Bibliometric, Bibliometric Analysis, Bibliometrics, Citation, Citation Index, Computational Linguistics, Database, Fractals, Intelligence, Literature, Multi-Fractal, Roadmaps, SCI, Science, Science Citation Index, Self-Organized Criticality, Self-Similarity, System, Technical Intelligence, Text Mining, Text-Mining

# Title: Free Radical Biology and Medicine

Full Journal Title: [Free Radical Biology and Medicine](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=4940&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=2f29861bd144c796ae910a5106070e28)

ISO Abbreviated Title: Free Radic. Biol. Med.

JCR Abbreviated Title: Free Radical Bio Med

ISSN: 0891-5849

Issues/Year: 16

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:

Biochemistry & Molecular Biology: Impact Factor 4.116, 62/310 (2000)

Endocrinology & Metabolism: Impact Factor 4.116, / (2000)

? Sugiyama, M. (1992), Role of physiological antioxidants in chromium(VI)-induced cellular injury. *Free Radical Biology and Medicine*, **12** (5), 397-407.

Full Text: [1992\Fre Rad Bio Med12, 397.pdf](1992/Fre%20Rad%20Bio%20Med12,%20397.pdf)

Abstract: Chromium(VI) compounds are well known to be potent toxic and carcinogenic agents. Because chromium(VI) is easily taken up by cells and is subsequently reduced to the trivalent form, the formation of chromium(III) or other intermediate oxidation states such as chromium(V) and (IV) is believed to play a role in the adverse biological effects of chromium(VI) compounds. Recent in vitro studies have shown that this reduction process generates free radical species such as active oxygen radicals. Furthermore, physiological antioxidants are reported to modify the genotoxic and toxic effects of chromate. This article reviewed the recent in vitro and in vivo studies of the effects of antioxidants including active oxygen scavengers: glutathione: vitamins B2, E, and C, on chromate-induced injury such as DNA lesions; lipid peroxidation; enzyme inhibition: cytotoxicity; mutation: and so on. In addition, the mechanism of action of these antioxidants was discussed with respect to the formation of active oxygen radicals and paramagnetic chromium such as chromium(V) and (III). Such studies may help elucidate the mechanism of chromium(VI) toxicity as well as the mechanism of protection.

Keywords: Chromium, Free Radicals, Antioxidant, Glutathione, Vitamin-B2, Vitamin-E, Vitamin-C, Single-Strand Breaks, Hexavalent Chromium Compounds, Sister-Chromatid Exchanges, Electron-Paramagnetic-Res, Cultured Mammalian-Cells, Chinese-Hamster Cells, Vitamin-E Protects, Ascorbic-Acid, Dna Lesions, Chromosomal-Aberrations

Risby, T.H. and Sehnert, S.S. (1999), Clinical application of breath biomarkers of oxidative stress status. *Free Radical Biology and Medicine*, **27** (11-12), 1182-1192.

Full Text: [F\Fre Rad Bio Med27, 1182.pdf](F/Fre%20Rad%20Bio%20Med27,%201182.pdf)

Abstract: Isolation and quantification of volatile breath biomarkers indicative of relevant alterations in clinical status has required development of new techniques and applications of existing analytical chemical methods. The most significant obstacles to successful application of this type of sample have been reduction in required sample volume permitting replicate analysis (an absolute requirement for all clinical studies), separation of the analyte (s) of interest from background molecules, water vapor and other molecules with similar physical properties, introduction of automation in analysis and the use of selective detection systems (electron impact mass spectrometry, flame photometric, thermionic detectors), and automated sample collection from the human subject. Advances in adsorption technology and trace gas analysis have permitted rapid progress in this area of clinical chemistry. (C) 1999 Elsevier Science Inc.

Keywords: Mediated Lipid-Peroxidation, Vitamin-E, Reperfusion, Ethane, Liver, Generation, Smoking, Infants, Free Radical, Reactive Oxygen Species, Antioxidant Vitamins, Smoking, Ionizing Radiation, Reperfusion Injury, Breach Ethane

? Gurer, H. and Ercal, N. (2000), Can antioxidants be beneficial in the treatment of lead poisoning? *Free Radical Biology and Medicine*, **29** (10), 927-945.

Full Text: [2000\Fre Rad Bio Med29, 927.pdf](2000/Fre%20Rad%20Bio%20Med29,%20927.pdf)

Abstract: Recent studies have shown that lead causes oxidative stress by inducing the generation of reactive oxygen species, reducing the antioxidant defense system of cells via depleting glutathione, inhibiting sulfhydryl-dependent enzymes, interfering with some essential metals needed for antioxidant enzyme activities, and/or increasing susceptibility of cells to oxidative attack by altering the membrane integrity and fatty acid composition. Consequently, it is plausible that impaired oxidant/antioxidant balance can be partially responsible for the toxic effects of lead. Where enhanced oxidative stress contributes to lead-induced toxicity, restoration of a cell’s antioxidant capacity appears to provide a partial remedy. Several studies are underway to determine the effect of antioxidant supplementation following lead exposure. Data suggest that antioxidants may play an important role in abating some hazards of lead. To explain the importance of using antioxidants in treating lead poisoning the following topics are addressed: (i) Oxidative damage caused by lead poisoning; (ii) conventional treatment of lead poisoning and its side effects; and (iii) possible protective effects of antioxidants in lead toxicity. (C) 2000 Elsevier Science Inc.

Keywords: Free Radicals, Lead Poisoning, Antioxidants, Oxidative Stress, Treatment, Delta-Aminolevulinic-Acid, Alpha-Lipoic Acid, Superoxide-Dismutase Activity, Acute Intermittent Porphyria, Red-Blood-Cells, N-Acetylcysteine, Lipid-Peroxidation, Chelation-Therapy, Induced Hypertension, Fatty-Acid

# Title: Free Radical Research Communications

Full Journal Title: Free Radical Research Communications

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Stclair, D.K. and Oberley, L.W. (1991), Manganese superoxide-dismutase expression in human cancer-cells-a possible role of messenger-RNA processing. *Free Radical Research Communications*, **12-3** (P2), 771-778.

Keywords: Tumor Necrosis Factor, Induction, Fibroblasts, Acid, Mnsod, Human Cancer, Messenger RNA Processing, Western Blot, Northern Blot

# Title: French Review

Full Journal Title: French Review

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Porter, L.M. (2010), Plagiarism and creativity (thirteen inquiries about the author and other). *French Review*, **83** (5), 1068-1069.

Keywords: Creativity, Plagiarism

# Title: Fresenius Environmental Bulletin

Full Journal Title: [Fresenius Environmental Bulletin](http://www.psp-parlar.de/)

ISO Abbreviated Title: Fresenius Environ. Bull.

JCR Abbreviated Title: Fresen Environ Bull

ISSN: 1018-4619

Issues/Year: 6

Journal Country/Territory: Germany

Language: English

Publisher: Inst Lebensmitteltechnologie Analytische Chemie

Publisher Address: Technische Universitat Munchen, D-85350 Freising-Weihenstephan, Germany

Subject Categories:

Environmental Sciences: Impact Factor 0.225, 115/126 (1999); Impact Factor 0.277, 112/127 (2000); Impact Factor 0.325, 123/131 (2003); Impact Factor 0.480, 118/134 (2004); Impact Factor 0.509, 124/140 (2005); Impact Factor 0.429, 148/160 (2007); Impact Factor 0.463, 154/163 (2008); Impact Factor 0.531, 168/181 (2009)

Viraraghavan, T. and Mihial, D.J. (1995), Color removal using peat. *Fresenius Environmental Bulletin*, **4** (6), 346-351.

Abstract: Peat is a highly organic material found in damp, marshy areas around the world. Laboratory batch studies were conducted to assess the potential of Saskatchewan horticultural peat for treating dye coloured effluent similar to those produced in textile dyehouses. Two dyes, one basic and the other acidic, were used to determine the difference in adsorption between the two. Batch studies showed that the basic dye was adsorbed better (99%) compared with the acidic dye (48%). The equilibrium time for adsorption was 30 minutes and 100 minutes for the basic and acidic dyes respectively. The adsorption of both dyes by peat followed both the Langmuir and Freundlich isotherms.

Keywords: Peat, Color, Adsorption, Isotherms, Textile Dyes

? Bayer, E., Maurer, A., Deyle, C.J. and Kutubuddin, M. (1995), Recovery of activated carbons from wastes via low-temperature conversion. 2. Analysis and evaluation of applicability. *Fresenius Environmental Bulletin*, **4** (9), 539-544.

Abstract: Activated carbons produced from Low Temperature Conversion chars of various wastes were subjected to a number of adsorption tests (methylene blue, iodine, COD- and humic acid adsorption, hexane and tetrachloromethane adsorption) in order to compare their adsorption properties with commercial samples. Together with the characterization of the inorganic components and water-solubles, these data permit an approximate estimation of their ecological impact and possible fields of application.

Keywords: Activated Carbon, Activated Carbons, Adsorption, Adsorption Properties, Adsorption,Water Purification, COD, Evaluation, Feedstock Recycling, Humic Acid, Impact, Ion, Low Temperature Conversion, Methylene Blue, Recovery, Temperature, Wastes

? Pires, M.A.F., Dantas, E.S.K. and Munita, C.S. (1995), An attempt to identify commercial drinking-water through means of some ionic species. *Fresenius Environmental Bulletin*, **4** (11), 673-678.

Abstract: Ion chromatography technique was used to determine the concentrations of F, Cl-, NO3-, SO42-, Mg2+, Ca2+ and pH in five different brands of bottled drinking water sold in Sao Paulo supermarkets. To choose from the samples, the consumption criteria was used. Results were compared to the recommended standards of the World Health Organization (WHO) and the standards applied to the member states of the European Community (EC). A statistical method was used to determine which of the ionic species differentiated from the different brands.

Keywords: Drinking Water, Ion Chromatography, Ionic Species, Anions, Cations

? Dahab, O.A. (1996), Phenolic compounds in two different coastal environments. *Fresenius Environmental Bulletin*, **5** (5-6), 264-269.

Abstract: The total phenolic compounds in sea water and fish from Alexandria and Doha coastal environments were determined spectrophotometrically by the 4-aminoantipyrine method. Phenolic compounds are omnipresent in the investigated environments. The impact of human activities in raising the phenolic concentrations found in sea water of the two environments was considerable especially in Abu Kir Bay of Alexandria and the landfill site of Doha. Phenols found in fish caught from Alexandria wafers were undoubtedly higher than those found in Doha samples. It was difficult to compare the obtained results with those from other areas in the Mediterranean Sea and the Arabian Gulf due to scarcity of the published data about phenol pollution in these areas.

Keywords: Alexandria Coast, Doha Coast, Phenolic Compounds, Phenols in Fish Muscle, Phenols in Sea Water

? Payman, M.A. and Mahnaz, M.A. (1998), Decolourization of textile effluent by *Aspergillus niger* (marine and terrestrial). *Fresenius Environmental Bulletin*, **7** (1-2), 1-7.

Abstract: Two types of *Aspergillus niger* [one was Isolated from soil (A) and the other is a marine fungus (B) which was isolated from Gorgan bay], both the fungi showed a high capacity for rapid decolourization of textile wastewater. About 90-95% of dyes (Azo-reactive-sulfuric, pigmentous) were absorbed from solutions by using the above mentioned fungi. The potential of both the soil and marine fungi were compared.

Keywords: Absorption, *Aspergillus niger*, Decolourization, Textile Effluent, *Phanerochaete-Chrysosporium*, Plant Effluent, Azo Dyes, Decolorization, Fungi

? Schuhmacher, M., Meneses, M., Granero, S., Llobet, J.M. and Domingo, J.L. (1998), Trace metals in vegetation grown near to an old municipal solid waste incinerator from Catalonia, Spain. *Fresenius Environmental Bulletin*, **7** (1-2), 42-50.

? Mohan, S.V., Mamatha, V.V.S. and Karthikeyan, J. (1998), Removal of color from acid and direct dyes by adsorption onto silica fumes. *Fresenius Environmental Bulletin*, **7** (1-2), 51-58.

Abstract: Silica fumes, a solid waste generated From the production of iron alloys, is used in this investigation to remove the color of persistent and microtoxic acid and direct azo dyes. The results indicate the ability of silica fumes to remove color of acid and direct dyes. Silica fumes exhibited good percentage of color removal (90 to 99%) and the adsorption of the dyes were found to be independent of system pH. Adsorption data fit well into the Langmuir adsorption isotherm model. Regeneration studies indicate the nature of adsorption to be of the type chemisorption.

Keywords: Silica Fumes, Low-Cost Adsorbent, Adsorption, Dyes, Color Removal

? Namasivayam, C. and Thamaraiselvi, K. (1998), Adsorption of 2-chlorophenol by “waste” red mud. *Fresenius Environmental Bulletin*, **7** (5-6), 314-319.

Abstract: The ability of “waste” red mud to adsorb 2-chlorophenol was investigated. Effects of contact time, initial concentration, pH. adsorbant dose and agitation speed on adsorption capacity and desorption were studied. The adsorption kinetics followed the first order rate expression. Adsorption followed Freundlich isotherm. A maximum removal of 83% was observed at pH 8.00. Desorption of phenol from the spent adsorbent with water at pH 11.0 was only 41%, indicating that both physisorption and chemisorption occur in the adsorption process.

Keywords: 2-Chlorophenol, Adsorption, Waste Red Mud, pH Effect, Desorption, Fe(III)/Cr(III) Hydroxide, Substituted Phenols, Chlorophenols, Oxidation, Removal

Thirunavukkarasu, O.S., Viraraghavan, T. and Selvapathy, P. (2000), A comparative account of phosphorus release from sediments of a lake and a reservoir: Laboratory experiments. *Fresenius Environmental Bulletin*, **9** (7-8), 461-467.

Abstract: Phosphorus is one of the most critical nutrients, which is released from bottom sediments. Release rate of phosphorus is an important part of lake management and restoration programs. This paper reports about batch experiments that were conducted to determine the phosphorus release from bottom sediments of Chengalpattu Lake and Poondi reservoir, located near Chennai (Madras), India. The effects of acetate, nitrate, and acetate + nitrate on sediment phosphorus release were studied. Several extraction procedures were performed to characterize the sediment phosphorus. The sediments from Poondi reservoir had a higher adsorption capacity (54.96%) than the sediments from Chengalpattu Lake. The sediment fractions for phosphorus (H2O-P), HCl-P, and CDB-P) of Chengalpattu Lake were higher (15.4 mg P2O5/100 g of sediment) than those of the Poondi reservoir (9.1 ms P2O5/100 g of sediment). Laboratory extracts showed that also the phosphate release from the sediments of Chengalpattu Lake was higher than from the sediments of Poondi reservoir.

Keywords: Lakes, Sediments, Phosphorus Release, Batch Experiments, Characterization, Phosphate Release, Aerobic Sediments, Shallow Lake, Nitrate, Water

? Capar, G., Demirer, G.N., Dilek, F.B. and Yetis, U. (2001), Removal of trihalomethane precursors by granular activated carbon treatment. *Fresenius Environmental Bulletin*, **10** (2), 197-202.

Full Text: [2001\Fre Env Bul10, 197.pdf](2001/Fre%20Env%20Bul10,%20197.pdf)

Abstract: This research covers the determination of the existing situation of trihalomethane (THM) levels in the distribution system of Ankara City and also focuses on the investigation of effectiveness of granular activated carbon (GAC) adsorption for the removal of natural organic matter (NOM) that are THM precursors and also THMs. For this purpose, a survey was carried out at 14 selected points in the city and the THMs were observed to be present in the Ivedik Water Treatment Plant (IWTP) filter effluent and in the distribution system (DS). THM concentrations increased within the DS, however, total THM (TTHM) levels did not exceed the EPA Stage I Limit of 80 µg/L.

Keywords: Activated Carbon, Adsorption, Natural Organic Matter, Trihalomethanes

? Panayotova, M. (2001), Kinetics and thermodynamics of removal of nickel ions from wastewater by use of natural and modified zeolite. *Fresenius Environmental Bulletin*, **10** (3), 267-272.

Full Text: [2001\Fre Env Bul10, 267.pdf](2001/Fre%20Env%20Bul10,%20267.pdf)

Abstract: Natural and modified (by means of heating, and/or treating with NaOH, NaCl, HCl, CH3COONa) zeolite has been tested in a batch process for its ability to remove Ni2+ from wastewater. The role of some of process parameters on removal effectiveness has been investigated for unmodified zeolite. Wastewater to zeolite ratio of 100:1 has been found as the optimum. Use of zeolite with finer particles increases its uptake ability. Best results have been obtained at pH=5-6 of water to be treated. Presence of Ca2+ and Me in the wastewater (in relatively high concentrations) decreases the uptake of Ni2+. The uptake process obeys the kinetic equation for the first order irreversible reactions. Initially the process of Ni2+ uptake is relatively fast - overall rate constants k=3.81×10-3 and k=4.16×10-3 min-1 have been determined for the first 30 min for solutions containing 10 and 50 mg/dm3 of Ni2+, respectively. Concentrations of 1-2 mg/dm3 can be reached for less than half an hour, at an initial Ni2+ concentration of 10-15 mg/dm3. The uptake equilibrium is best described by the Langmuir adsorption isotherm. The apparent equilibrium constant found, as well as the values of Langmuir constants show moderate to low affinity of natural zeolite to Ni2+. Zeolite modification with CH3COONa and NaCl increases (by 25-30 %) its ability to remove Ni2+ from wastewater and decreases mobilization of Ni2+ caused by contact of loaded zeolite with acidified water (pH=2.5). Contacting with 2 mol/dm(3) of NaCl solution can easily regenerate loaded natural and modified zeolite. Investigations made have shown that natural and modified zeolites can be used for treating wastewater released by mines, metallurgical enterprises processing Ni-bearing material or resulting from Ni-plating process, as well as for additional conditioning of liquid wastes from Ni-Cd batteries recycling.

Keywords: Nickel, Wastewater, Zeolite, Metal

? Danis,Ü., Kaya, Y. and Algur, Ö.F. (2000), Biosorption of copper(II) by pollens of *Typha latifolia L*. *Fresenius Environmental Bulletin*, **10** (4), 363-367.

Full Text: [2001\Fre Env Bul10, 363.pdf](2001/Fre%20Env%20Bul10,%20363.pdf)

Abstract: The removal of Cu(II) ions from aqueous solution by adsorption on nonliving dried pollens of *Typha latifolia L*. was studied in batch system. Concentrations ranging from 10 to 150 mg l-1 Cu(II) were tested and metal removal achieved nearly 96 %. The biosorption of Cu(II) ions by pollen was strongly affected by pH. Within the pH range of 4 to 6, the saturated uptake capacity for Cu(II) sorption was 6.23 mg g-1. In general, higher adsorptive uptake was observed at 20 degreesC. The adsorption of Cu(II) on pollen appeared to follow the Langmuir adsorption isotherms. Results indicated that nonliving pollen have a high adsorptive capacity for copper.

Keywords: Biosorption, Copper Removal, Copper Biosorption, Pollen, *Typha Latifolia*, Heavy-Metal Biosorption, Marine-Algae, *Rhizopus-arrhizus*, Aqueous-Solutions, Removal, Biomass, Recovery, Radiata, Cadmium, Water

? Mitrakas, M. (2001), A survey of arsenic levels in tap, underground and thermal mineral waters of Greece. *Fresenius Environmental Bulletin*, **10** (9), 717-721.

Full Text: [2001\Fre Env Bul10, 717.pdf](2001/Fre%20Env%20Bul10,%20717.pdf)

Abstract: Arsenic analyses in various kinds of waters of Greece revealed that its concentration in tap water of 24 big Greek cities did not exceed the new Maximum Contaminant Level (MCL) of 10 µg/L. Moreover, analysis of 125 tap water samples of smaller cities and communities, mainly from Northern Greece, showed that the highest percentage of them (86.4%) complied with the new MCL of 10 µg/L. This percentage was lower (73.6%) in the underground waters used for irrigation. Bottled waters were the least polluted, containing arsenic less than 5 µg/L in general. On the contrary, most of the thermal mineral waters analyzed contained more than 10 µg/L arsenic.

Keywords: Arsenic, Water, Tap, Underground, Thermal, Drinking-Water, Groundwater, Removal

? Kannan, N. and Sundaram, M.M. (2001), Studies on the removal of Rhodamine B by adsorption using various carbons: A comparative study. *Fresenius Environmental Bulletin*, **10** (11), 814-822.

Full Text: [2001\Fre Env Bul10, 814.pdf](2001/Fre%20Env%20Bul10,%20814.pdf)

Abstract: Studies on the removal of rhodamine B base (RB) by adsorption on various carbons (commercial activated carbon-CAC and indigenously prepared activated carbons (IACs) from raw materials like bamboo dust, coconut shell, groundnut shell, rice husk, and straw) have been carried out with an aim to obtain information on treating effluents from dye industries. The effect of various experimental parameters such as (i) initial concentration of dye, (ii) contact time, (iii) dose of adsorbent, (iv) initial pH of the solution, with CAC and IACs and (v) particle size of the IACs only at 200 rpm speed of agitation has been investigated by following batch adsorption technique at 30°C. The percentage removal of dye (RB) increased with the decrease in initial concentration of dye and particle size of the adsorbent and increased with the increase in contact time, dose of adsorbent and initial pH of the solution. Adsorption data were modelled with the Freundlich and Langmuir adsorption isotherms and first order kinetic equations, such as Natarajan and Khalaf, Lagergren and Bhattacharya and Venkobachar and intra-particle diffusion model. The kinetics of adsorption is found to be first order with intra-particle diffusion as one of the rate determining steps. The results conclude that IACs could be considered as low-cost adsorbents alternative to CAC in wastewater treatment for the removal of colour and dyes, in general, and rhodamine B, in particular.

Keywords: Adsorption, Removal of Rhodamine B, Various Carbons, Freundlich and Langmuir Adsorption Isotherms, Kinetics of Adsorption, Intra-Particle Diffusion, Adsorption Capacity, Comparison, Water and Wastewater Treatment, Low-Cost Adsorbents, Aqueous-Solutions, Waste-Water, Equilibrium

? Yavuz, Ö., Ziyadanogullari, B., Aydin, I. and Bingol, H. (2002), Removal of cadmium from aqueous solution by natural and thermally activated dolomite. *Fresenius Environmental Bulletin*, **11** (3), 123-126.

Full Text: [2002\Fre Env Bul11, 123.pdf](2002/Fre%20Env%20Bul11,%20123.pdf)

Abstract: Removal of Cd(II) from aqueous solution by natural and thermally activated dolomite was investigated. Maximum activation temperature and maximum adsorption capacities were determined as 700°C for 2 hours and 1.02 mg g-1 for natural dolomite, but 64.93 mg g-1 for thermally activated dolomite at 25°C, respectively. Equilibrium contact time of cadmium was determined as 1 hour. Adsorption of Cd(II) on dolomite conforms to Langmuir’s isotherm.

Keywords: Cadmium, Dolomite, Removal, Sorption, Adsorption, Desorption, Soils, Lead, Zinc

? Yavuz, Ö. and Aslan, H. (2002), Removal of cadmium from aqueous solution by natural and thermally activated kaolinite. *Fresenius Environmental Bulletin*, **11** (4), 194-197.

Full Text: [2002\Fre Env Bul11, 194.pdf](2002/Fre%20Env%20Bul11,%20194.pdf)

Abstract: Removal of Cd(II) from aqueous solution and effect of activation temperature on the adsorption by kaolinite was investigated. Maximum activation temperature was determined as 600°C for 1 hour and maximum adsorption capacities for natural kaolinite as 0.835 mg g-1 at 5°C and 1.117 mg g-1 at 40°C, for thermally activated kaolinite as 6.75 mg g-1 at 25°C and 7.518 mg g-1 at 40°C, respectively. Equilibrium contact time of cadmium was determined to be I hour. Adsorption of Cd(H) on kaolinite conforms to Langmuir’s isotherm.

Keywords: Cadmium, Removal, Sorption, Kaolinite Adsorption, Desorption, Goethite, Sorption, Soils, Lead, Zinc

? Asyhar, R., Wichmann, H., Bahadir, M. and Cammenga, H.K. (2002), Equilibrium adsorption studies of activated coke towards phenol and 4-nitrophenol. *Fresenius Environmental Bulletin*, **11** (6), 270-277.

Full Text: [2002\Fre Env Bul11, 270.pdf](2002/Fre%20Env%20Bul11,%20270.pdf)

Abstract: Equilibrium adsorption of activated coke towards phenol and 4- nitrophenol has been studied. The activated coke was produced by impregnating ground green coke with pulverized KOH (2:3) and then washing the activation product with 15% HCl solution after thermal treatment. The experimental variables investigated in these studies were contact time, initial concentration, temperature and pH of solution, and sorbent dosage. Adsorption dynamics parameters, namely the rate constants for film diffusion (K-ad), intraparticle diffusion (K-p) and the diffusion coefficient (D-i) were determined. Isotherm modeling was carried out using both Langmuir and Freundlich equations. From the experimental data thermodynamic parameters including free energy (ΔG°), enthalpy (ΔH°) and entropy (ΔS°) were also calculated.

Keywords: 4-Nitrophenol, Adsorbents, Adsorption, Aqueous-Solutions, Carbon, Dynamic Parameters, Fly-Ash, Langmuir and Freundlich Isotherms, Petroleum Coke, Petroleum Coke, Phenol, Phosphoric-Acid, Rate Constants, Removal, Sorbent, Thermodynamic, Thermodynamic Parameters, Waste-Water

? Yavuz, Ö. and Aydin, A.H. (2002), The removal of acid dye from aqueous solution by different adsorbents. *Fresenius Environmental Bulletin*, **11** (7), 377-383.

Full Text: [2002\Fre Env Bul11, 377.pdf](2002/Fre%20Env%20Bul11,%20377.pdf)

Abstract: Colour removal is an important task in textile wastewater treatment. Removal of dyestuff from aqueous solutions by different adsorbents, such as activated carbon, kaolinite and montmorillonite was investigated. Equilibrium isotherms have been determined and analysed using the Langmuir equations. The monolayer saturation adsorption capacities for acid dye are 967.0, 50.5, 43.7 and 31.3 mg/g adsorbent for RAC (a commercial activated carbon), HAC (activated carbon obtained from hazelnut), KC (raw kaolinite) and MC (montmorillonite) at 25 degreesC, respectively.

Keywords: Dyestuff Adsorption, Wastewater Treatment, Kaolinite, Montmoronilite, Activated Carbon, Removal, Adsorption

? Aydogan, M.N., Algur, O.F. and Danis, U. (2002), Batch zinc(II) biosorption by a non-living Phanerochaete chrysosporium biomass. *Fresenius Environmental Bulletin*, **11** (11), 985-988.

Full Text: [2002\Fre Env Bul11, 985.pdf](2002/Fre%20Env%20Bul11,%20985.pdf)

Abstract: The zinc(II) biosorption capacity of non-living biomass of Phanerochaete chrysosporium was studied in the batch system. Concentrations ranging from 10 to 150 mg/l Zn(II) were tested. The biosorption of metals was strongly affected by pH and the concentrations of zinc adsorbed increased from pH 2.0 to maximum levels at pH 6.0. A biosorption equilibrium was established after about 15 min and the adsorbed Zn(II) ions did not significantly change further with time. Reduction in biomass concentration in the suspension at a given metal concentration enhanced the metal/biosorbent ratio, and thus increased metal uptake per gram of biosorbent. The equilibrium data could be fitted by a Langmuir isotherm equation. Under optimal conditions, up to 79.24 mg Zn(II) g biomass was adsorbed.

Keywords: Biosorption, Metal Removal, Phanerochaete Chrysosporium, Zinc, Biomass, Aqueous-Solutions, Waste Biomass, Removal, Lead, Copper(II), Adsorption, Recovery, Mycelium, Radiata, Cu(II)

? Beyazit, N., Sarioğlu, M. and Peker, İ. (2002), Removal of copper ions from wastewaters using amasya zeolites, Turkey. *Fresenius Environmental Bulletin*, **11** (12A), 1066-1070.

Full Text: [2002\Fre Env Bul11, 1066.pdf](2002/Fre%20Env%20Bul11,%201066.pdf)

Abstract: In this study, removal of copper ions from wastewaters in a copper production plant (K.B.I.) located in Samsun by using zeolitic tuffs containing 45% clinoptilolite and 35% mordenite, were investigated. Total adsorption/ion exchange capacity was found to be 0.11 mg Cu2+/g zeolite. t was determined that sodium was the most effective exchangeable ion for ion exchange of copper ions. Calcium, potassium and magnesium contents of wastewater interfaced with the removal of copper ions and greatly increased the amount of zeolite needed to treat a given volume of wastewater.

Keywords: Zeolites, Copper, Industrial Wastewater, Removal, Cadmium Removal, Metal, Exchange, Water, Lead

? Kizilcikli, I. and Mahramanlioglu, M. (2002), 2,4 D adsorption by the adsorbents produced from contaminated soil. *Fresenius Environmental Bulletin*, **11** (12B), 1098-1104.

Full Text: Fre Env Bul11, 1098

Abstract: The waste material from a gaswork site was converted into low cost adsorbents by physical and chemical methods and utilized for the adsorption of 2,4 - D (2,4-dichlorophenoxy acetic acid). Chemical activation method was found to be more effective than physical method, as confirmed by surface area and porosity data. In the batch experiments, some parameters such as contact time, adsorbent concentration, and temperature were studied. Kinetic studies were made using the first order equation. The equilibrium data fit well to the Langmuir and Freundlich models. Thermodynamic parameters were calculated and these values showed that adsorption process was exothermic and favoured at low temperatures.

Keywords: Adsorption, Contaminated Soil, Activation Method, 2,4-dichlorophenoxy Acetic Acid (2,4-D), Pesticides, Granular Activated Carbon, Zinc-Chloride Activation, Spent Bleaching Earth, Fly-Ash, Aqueous-Solution, Removal, Conversion, Bentonite, Water, Dyes

? Alkan, M. and Dogan, M. (2003), Adsorption kinetics of victoria blue onto perlite. *Fresenius Environmental Bulletin*, **12** (5), 418-425.

Abstract: The effects of various experimental parameters such as initial dye concentration, temperature and pH on adsorption capacity of victoria blue on perlite have been investigated. The extent of dye removal increased, with the increase in initial concentration, pH and temperature of the dye and contact time. Adsorption measurements show that the process is fast and the adsorption data were modeled using the first order kinetic equation. The results indicate that perlite could be employed as a low cost alternative to commercial adsorbents in wastewater treatment for the removal of colour and dyes. The activation energy was calculated as 2.4 kJ/mol.

Keywords: Activation, Activation Energy, Adsorption, Adsorption Capacity, Adsorption Kinetics, Ash, Capacity, Carbons, Dye, Dye Removal, Dyes, First Order, Kinetic, Kinetics, Kinetics of Adsorption, Mechanism, Methylene-Blue, Model, Perlite, pH, Removal, Temperature, Treatment, Victoria Blue, Wastewater, Wastewater Treatment

? Doner, G. and Akman, S. (2003), The removal of copper, cadmium and lead by rice husk ash. *Fresenius Environmental Bulletin*, **12** (7), 736-739.

Full Text: [2003\Fre Env Bul12, 736.pdf](2003/Fre%20Env%20Bul12,%20736.pdf)

Abstract: In this study, a major agricultural waste, rice husk ash, was used for the removal of copper, cadmium and lead and their preconcentration and separation prior to analysis by graphite furnace atomic absorption spectrometry was observed. For this purpose, rice husk was thermally treated at 300°C, 500°C and 800°C for 8 hrs in a muffle furnace. The effects of thermal treatment and various experimental conditions on retention and elution efficiencies of the elements studied were investigated by applying batch and column methods. All elements were nearly quantitatively (>90%) retained at pH greater than or equal to 6 with a shaking time of 10 min. Maximum lead adsorption capacity of rice husk ash heated at 300°C, 500°C and 800°C were 12.3, 9.7, 8.6 mg Pb/g adsorbent. The results showed that rice husk ash, especially heated at 300°C, could be used as an efficient and inexpensive adsorbent for the removal of some toxic heavy metals from polluted wastewaters.

Keywords: Adsorption, Heavy Metals, Rice Husk Ash, Atomic Absorption Spectrometry, Heavy-Metals, Ion-Exchange, Preconcentration, Adsorption, Nickel, Silica, Hulls

? Şener, Ş., Sayilkan, F., Erdemoglu, S.B., Akarsu, M. and Sayilkan, H. (2003), The synthesis and application of new adsorbents for removal of heavy metal ions and phenols from aqueous solution. *Fresenius Environmental Bulletin*, **12** (7), 797-800.

Full Text: [2003\Fre Env Bul12, 797.pdf](2003/Fre%20Env%20Bul12,%20797.pdf)

Abstract: In this study, a TiO2 adsorbent powder was synthesized from Titan (IV)-n-propoxyallyl acetoacetate by the sol-gel process. This powder and its coated forms (SH-and NH2- functional silanes) were investigated for their phenol, p-chlorophenol, Cu2+, Ph2+ and Zn2+ adsorption. It was found that Pb2+ and Zn2+ adsorption on the adsorbent coated with NH2-functional silane and Cu2+, Pb2+ adsorption on the adsorbent coated with SH- functional silane were nearly complete

Keywords: Acid, Activated Carbons, Adsorbent, Adsorption, Adsorption, Color Removal, Copper, Decolorization, Dye, Fly-Ash, Kinetics, Lead, Phenols, Sawdust, Sol-Gel Process, Waste-Water, Zinc

? Özer, A. and Tümen, F. (2003), Cd(II) adsorption from aqueous solution by activated carbon from sugar beet pulp impregnated with phosphoric acid. *Fresenius Environmental Bulletin*, **12** (9), 1050-1058.

Full Text: [2003\Fre Env Bul12, 1050.pdf](2003/Fre%20Env%20Bul12,%201050.pdf)

Abstract: The adsorption of Cd(II) ions from aqueous solutions onto activated carbon obtained by carbonising sugar beet pulp impregnated with 30% phosphoric acid was studied. By increasing the temperature of carbonisation, the removal efficiency of Cd(H) ions increased. The maximum removal (95.8%) was attained by activated carbon samples obtained by carbonising acid-impregnated sugar beet pulp at 500 degreesC for 90 min. The removal efficiency of Cd(II) ions is, to a large extent, dependent on pH of medium. The results of experiments carried out at various temperatures were applied to Langmuir and Freundlich isotherm equations. The values of Langmuir constant (qmax) at 20°C were calculated as 68.03, 71.99 and 72.99 mg/g for activated carbons obtained at 300, 400 and 500°C, respectively. The adsorption process was found to be exothermic and Langmuir isotherm data were evaluated to determine the thermodynamic parameters for the adsorption process. It was found that the values of qmax and K-f decreased with increasing temperature. The data are better fitted by the second-order kinetic model as compared to first-order kinetic model.

Keywords: Sugar Beet Pulp, Activated Carbon, Cd(II) Ions Removal, Phosphoric Acid, Heavy-Metals, Pretreated Biomass, Removal, Cadmium, Sorption, Ions, Isotherms, Water, Shell, Waste

Viraraghavan, T. and Moazed, H. (2003), Removal of oil from water by bentonite. *Fresenius Environmental Bulletin*, **12** (9), 1092-1097.

Full Text: [2003\Fre Env Bul12, 1092.pdf](2003/Fre%20Env%20Bul12,%201092.pdf)

Abstract: Na-bentonite was used in this study. The oil-in-water emulsions used were as follows: standard mineral oil (SMO); Kutwell45 (KUT45) and Valcool (VAL), two cutting oils; refinery effluent (RE); and produced water (PW) from production wells at Estevan, Saskatchewan. The concentrations of oil in oily waters varied from 5 to 500 mg/L. Batch kinetic studies showed that the equilibrium time was one hour for oils tested. The results showed that both pseudo first order (Lagergren) and pseudo second order (Ho et al.) models provided realistic descriptions of the kinetics of sorption of oil by bentonite. Batch adsorption experiments showed that the oil removal efficiencies obtained at equilibrium time were 85-96% for VAL; 87-96% for KUT45; 84-86% for PW; and 54-87% for RE in the range of the amount of bentonite used. Batch adsorption studies also indicated that the most applicable model for the sorption of SMO, KUT45, VAL and PW was the Freundlich isotherm. In the case of RE, the BET model was the most valid isotherm.

Keywords: Bentonite, Oil-in-Water Emulsion, Oily Wastewater, Emulsion, Oil Removal, Adsorption, Waste-Water, Peat

? Özer, A. (2003), Application of pseudo second order kinetic model to lead(II) biosorption on *Schizomeris leibleinii*. *Fresenius Environmental Bulletin*, **12** (10), 1239-1245.

Full Text: [2003\Fre Env Bul12, 1239.pdf](2003/Fre%20Env%20Bul12,%201239.pdf)

Abstract: The biosorption of lead(II) ions on Schizomeris leibleinii was studied in a batch system with respect to initial pH, temperature, initial lead(II) ion and biomass concentration. The algal biomass exhibited the highest lead(II) uptake capacity at the initial pH of 4.5 and 30°C. The pseudo second-order kinetic model was applied to the kinetic data and the rate constants were evaluated in the concentration range of lead(II) ions examined, but also biomass at all the temperatures and pH values 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 lead(II) biosorption.

Keywords: Adsorption, Equilibrium, Pseudo Second Order Kinetics, Activation Energy, Batch System, Equilibrium, Vulgaris, Temperature, Adsorption, Sorption, Uranium, Biomass, Removal, Metals

? Ozyurt, M. and Ataçag, H. (2003), Biodegradation of azo dyes: A review. *Fresenius Environmental Bulletin*, **12** (11), 1294-1302.

Full Text: [2003\Fre Env Bul12, 1294.pdf](2003/Fre%20Env%20Bul12,%201294.pdf)

Abstract: Commercially available dyes include several structural varieties of dyes, such as acidic, basic, disperse, azo, diazo, anthroquinone-based and metal complex dyes. Colour is the first contaminant to be recognised in waste-water and has to be removed before discharging into waterways or land. Recent fundamental works have shown the existence of many microorganisms capable of decolorizing wide range of dyes. In this text, articles related to the biodegradation of azo dyes are reviewed after giving representative studies about different characteristics of azo dyes such as isolation of bacteria reducing azo dyes, metabolism, mutagenicity, analysis of azo dyes, kinetics of bacterial decolorization, bacterial and fungal biodegradation of azo dyes.

Keywords: Adsorption, Azo Dyes, Biodegradation, Degradation, Dye Decolourizing, Microbial Decolorization, Microorganisms, Phanerochaete- Chrysosporium, Redox Mediators, Reduction, Simulated Textile Effluent, SP Strain BN6, Textile Wastewater, Waste-Water, Wastewater, Water Pollution

? Zhou, P.J., Lin, J., Shen, H., Li, T., Song, L.R., Shen, Y.W. and Liu, Y.D. (2003), Kinetic studies on the effects of rare earth elements (REES) on the growth of Microcystis and their accumulation by Microcystis. *Fresenius Environmental Bulletin*, **12** (11), 1328-1333.

Full Text: [2003\Fre Env Bul12, 1328.pdf](2003/Fre%20Env%20Bul12,%201328.pdf)

Abstract: In the paper the kinetic effects of La3+ and Ce4+ on the growth of Microcystis and the accumulation kinetics of Microcystis in the single and combined systems of La3+ and Ce4+ were studied. The mechanism of the effects of La3+ and Ce4+ on the growth of Microcystis and their accumulation kinetics were also discussed. In the single system, La3+ stimulated the growth of Microcystis at initial concentrations below 2 mg / 1, but inhibited it above 2 mg / 1. Ce4+ accelerated the growth of Microcystis at initial concentrations below 0.2 mg / 1 and inhibited at above 0.2 mg /l. Furthermore, the stimulation weakened with the increase of initial concentrations of La3+ and Ce4+. In the combined system, the growth of Microcystis was accelerated in the over all cases. In the single system, the amount of La3+ and Ce4+ uptake was more at higher initial concentrations than at lower ones. At the same initial concentrations, La3+ and Ce4+ uptake in the combined system was less than that in the single system. The kinetic process of La3+ and Ce4+ adsorpted by Microcystis can be explained with the second order kinetics adsorption model.

Keywords: Rare Earth Elements (REEs), Microcystis, Effects, Accumulation, Adsorption, Second Order Kinetics Adsorption Model, Bioavailability

? Wu, X., Wang, H.P., Deng, N.S. and Wu, F. (2003), Feasibility study on heavy metal removal from mine water by using geological material. *Fresenius Environmental Bulletin*, **12** (11), 1400-1406.

Full Text: [2003\Fre Env Bul12, 1400.pdf](2003/Fre%20Env%20Bul12,%201400.pdf)

Abstract: The removal of Cu, Cd, Zn and Ni from dilute mine water by using several geological materials including pure limestone, carbonaceous limestone, brecciated limestone and sand, were performed on a laboratory scale. The results showed that the adding of geological material combined with sodium carbonate injection notably enhanced the efficiency of heavy metal removal in varying degrees. Pure limestone was found to be the best geological material for removing heavy metals. The effects of material amount on metal removal efficiency were remarkable, but also influences of material size and temperature were apparent. However, the effects Of [CO32-], [metals], the reaction manner, on heavy metal removal efficiencies seemed to be ambiguous. The mechanisms of higher effective removal seem to be primarily due to coprecipitation controlled by the calcite-related pH value. According to this research, a practical method for heavy metal removal might be established, using local limestone material, which means lower maintenance costs and no production of sludge.

Keywords: Drainage, Heavy Metal Removal, Heavy Metals, Limestone, Mine Water, Sorption

? Öztürk, N. and Kavak, D. (2003), Boron removal from aqueous solutions by adsorption using full factorial design. *Fresenius Environmental Bulletin*, **12** (12), 1450-1456.

Full Text: [2003\Fre Env Bul12, 1450.pdf](2003/Fre%20Env%20Bul12,%201450.pdf)

Abstract: In this study, boron removal from aqueous solutions by adsorption was investigated by applying an experimental design. Alumina and activated carbon were used as adsorbents. The experimental test was carried out using a 2 3 full factorial design. The statistical test showed that adsorbent type, pH of solution and temperature affect boron removal by adsorption. Regression equation formulated for boron adsorption was represented as a function of response variables. The accuracy of the equation has been verified by Fisher’s adequacy test. It was observed that the coefficient of adsorbent type had the highest value, followed by temperature, and the lowest value was the pH of the solution. The results obtained from the study on parameters showed that as pH increased and temperature decreased boron removal by adsorption increased. Maximum boron removal was obtained at pH 10 and 20 degreesC. Adsorption of boron on alumina and activated carbon conforms to Langmuir’s isotherm. It has been reported that the adsorption capacities of alumina and activated carbon are 86.21, 166.67 mgg-1, respectively.

Keywords: Acid, Activated Carbon, Adsorption, Agricultural Solid-Waste, Alumina, Boron Removal, Coir Pith, Dyes, Experimental Design, Ion-Exchange, Variables, Water

Bulut, Y. and Tez, Z. (2003), Removal of heavy metal ions by modified sawdust of walnut. *Fresenius Environmental Bulletin*, **12** (12), 1499-1504.

Full Text: [2003\Fre Env Bul12, 1499.pdf](2003/Fre%20Env%20Bul12,%201499.pdf)

Abstract: Modified walnut sawdust was found to be effective in removing Ni(II), Cd(II) and Pb(II) from aqueous solution. The extent of removal depends on the contact time, concentration and temperature of the solution. The equilibrium time was found to be about 60 min. The adsorption rate constants were calculated by kinetics which fit a pseudo first-order and second-order laws.

Experiments were carried out at three different temperatures, expressed as both Freundlich and Langmuir isotherms, and Freundlich and Langmuir constants as well as the thermodynamic parameters ΔG, ΔH and ΔS were calculated. A possible explanation for the adsorption of metal ions by the sawdust may be attributed to the exchange between metal ions and acidic protons in sawdust matter.

Keywords: Adsorption, Heavy Metals, Removal, Sawdust, Kinetics, Thermodynamics, Aqueous-Solutions, Adsorption Thermodynamics, Modified Barks, Kinetics, Copper, Carbofuran

? Veli, S. and Pekey, B. (2004), Removal of copper from aqueous solution by ion exchange resins. *Fresenius Environmental Bulletin*, **13** (3B), 244-250.

Full Text: [2004\Fre Env Bul13, 244.pdf](2004/Fre%20Env%20Bul13,%20244.pdf)

Abstract: In this study the usability of ion exchanging resins is handled for the purpose of copper removal from aqueous solutions. The chosen resins were Dowex HCR S/S (strong cationic) and Dowex. Marathon C (strong cationic). During the removal process using the batch technique the effects of pH, dosage of the resin, concentration of copper and contact time were studied. The results showed that Freundlich and Langmuir isotherms are linear. From the Freundlich adsorption isotherm the capacity/intensity of copper adsorption on Dowex HCR S/S and Dowex Marathon C were calculated as 26.27 ing g-1 / 2.14 and 46.55 mg g-1 / 2.56, respectively. Derived from the Langmuir adsorption isotherm, the copper equilibrium constant was calculated as 1.81 for Dowex HCR S/S and 4.71 for Dowex Marathon C. The separation factors and distribution coefficients of copper for Dowex HCR S/S and Dowex Marathon C were presented. It was observed that copper removal by ion exchange resins can be described by the first-order reversible kinetics. In this study it was clearly shown that ion exchange resins can be used for removal of copper from aqueous solutions.

Keywords: Ion Exchange Resins, Copper Removal, Adsorption Isotherms, Separation Factors, Equilibrium Distribution Coefficients, Adsorption Kinetics, Waste-Water, Activated Carbon, Heavy-Metals, Adsorption, Equilibrium, Kinetics, Recovery, Cations, Shell, Acid

? Dogan, M. and Alkan, M. (2004), Some physicochemical properties of perlite as an adsorbent. *Fresenius Environmental Bulletin*, **13** (3B), 251-257.

Full Text: [2004\Fre Env Bul13, 251.pdf](2004/Fre%20Env%20Bul13,%20251.pdf)

Abstract: Perlite is a glassy volcanic rock, which will, upon rapid controlled heating, expand into a frothy material of bulk density. Considering the fact that the uses of perlite are based primarily upon its physical and chemical properties, it is aimed to investigate some physical and chemical properties of unexpanded and expanded perlite. Structural changes occurring during the expansion of perlite are discussed.

During the expansion a transition from amorphous structure to a crystalline form has been found to occur, and also some part of water has been removed, but there has still been some water in crystal lattice. Acid activation has caused a little increase in cation exchange capacity of perlite, while the density has remained almost unchanged.

Keywords: Perlite, Acid Activation, Surface Area, Cation Exchange Capacity, Adsorption-Kinetics, Aqueous-Solution, Methyl Violet, Blue

Bektaş, N. and Soysal, D. (2004), Kinetics of phosphate removal using surfactant modified clinoptilolite. *Fresenius Environmental Bulletin*, **13** (4), 366-369.

Full Text: [2004\Fre Env Bul13, 366.pdf](2004/Fre%20Env%20Bul13,%20366.pdf)

Abstract: In this work, the preliminary results on the removal pathways for phosphate ions from aqueous solution using surfactant-modified clinoptilolite (SMC) were investigated. The chemical kinetic describes the time course of reaction pathways to reach the equilibrium, whereas chemical equilibrium gives no information about pathways and reaction rates. Langmuir and Freundlich isotherm constants and correlation coefficients for the present system were calculated and compared. The equilibrium process of phosphate removal was described well by the Langmuir isotherm. The sorption kinetic was tested for Elovich, pseudo-first order and pseudo-second order reaction models. The rate constants of sorption for all these kinetic models were calculated. The pseudo-second order kinetic reaction model was found to be the best for correlation of the data for phosphate removal from aqueous solution using modified clinoptilolite.

Keywords: Langmuir, Phosphate Removal, Sorption Kinetics and Isotherms, Surfactant-Modified Clinoptilolite, Natural Clinoptilolite, Sorption, Chromate

Ho, Y.S. (2004), Comment on “Removal of heavy metal ions by modified sawdust of walnut” by Bulut, Y. and Tez, Z. *Fresenius Environmental Bulletin*, **13** (4), 370-373.

Full Text: [2004\Fre Env Bul13, 307.pdf](2004/Fre%20Env%20Bul13,%20307.pdf)

Keywords: Fungus Aspergillus-Niger, Sugarcane Bagasse Pith, Activated Date Pits, Sphagnum Moss Peat, Aqueous-Solutions, Kinetic-Models, Adsorption-Kinetics, Sorption Kinetics, Dye Sorption, Cadmium Ion

? Özdemir, M., Şahin, Ö. and Güler, E. (2004), Removal of Pb(II) ions from water by sunflower seed peel. *Fresenius Environmental Bulletin*, **13** (6), 524-531.

Full Text: [2004\Fre Env Bul13, 524.pdf](2004/Fre%20Env%20Bul13,%20524.pdf)

Abstract: The removal of lead from water by sunflower seed peel was investigated. It was found to depend on the solution pH, temperature, adsorbent dose and initial concentration. The maximum adsorption efficiency observed was 99% at the equilibrium state. The most successful adsorption was performed at pH 6, 60°C and initial concentration of 30 ppm. It was also found that the temperature changes have no big effect on the adsorption capacity. In summary, it can be concluded that metal ions such as Pb2+ can be removed efficiently from aqueous solutions using sunflower seed peel, which is a low-cost sorbent and abundantly available. It could be an alternative for the more costly processes.

Keywords: Adsorption of Pb2+ Ions, Sunflower Seed Peel, Surface Activity, Adsorption Efficiency, Aqueous-Solutions, Heavy-Metals, Lead, Copper(II), Adsorption, Kinetics

? Mysore, D., Viraraghavan, T. and Jin, Y.C. (2004), Removal of oil by vermiculite. *Fresenius Environmental Bulletin*, **13** (6), 560-567.

Full Text: [2004\Fre Env Bul13, 560.pdf](2004/Fre%20Env%20Bul13,%20560.pdf)

Abstract: Studies were carried out to evaluate the sorption capacities of expanded and hydrophobizied vermiculite. Sorption capacity is the weight of oil picked up by unit weight of a sorbent Vermiculite was made hydrophobic by adding carnauba (cerifera) wax. Initial oil pick-up by the sorbents; on pure oil and oil on aqueous medium was evaluated. Batch kinetic studies were conducted to evaluate the saturation speed of expanded and hydrophobized vermiculite on sorption of oil. Expanded vermiculite showed sorption capacities of 2.53g/g, 2.56g/g and 2.62g/g for synthetic mineral oil (SMO), vegetable oil and Kutwell oil, respectively, whereas hydrophobized vermiculite showed 2.46g/g, 2.49g/g and 2.53g/g. In the case of oil on an aqueous medium, hydrophobized vermiculite showed higher sorption capacity than expanded vermiculite. In this case, the sorption capacities of expanded vermiculite were 1.8g/g, 1.91g/g and 2.89g/g for SMO, vegetable oil and Kutwell oil, respectively, whereas those of hydrophobized vermiculite were 3.45g/g, 3.87g/g and 4.08g/g. It was found that oil can be recovered from vermiculite by applying pressure. These studies also showed that vermiculite can be used as a sorbent for oil removal and hydrophobized vermiculite is a better adsorbent for oil floating on water.

Keywords: Expanded Vermiculite, Hydrophobized Vermiculite, Pure Oil, Oil in Aqueous Medium, Sorption Capacity, Oil Removal, Water, Sorbents, Cleanup, Fibers

? Türkman, A.E. and Aslan, Ş. and Ege, İ. (2004), Treatment of metal containing wastewaters by natural zeolites. *Fresenius Environmental Bulletin*, **13** (6), 574-580.

Full Text: [2004\Fre Env Bul13, 574.pdf](2004/Fre%20Env%20Bul13,%20574.pdf)

Abstract: In this study, removal of heavy metals in synthetic and wastewaters was studied by using natural zeolite, clinoptilolite. The activated and non-activated zeolites used were crushed and grinded to sizes between 1.0-2.0 mm. Ion exchange studies were conducted as batch experiments for various mixing time, speed and different concentrations of Pb2+, Cd2+, Ni2+, and Zn2+. Gordes and Bigadic zeolites were used for Cd2+ and Ni2+ removal and their efficiencies were compared with that of natural zeolites from different areas. Although Cd2+ was not removed effectively by Bigadic zeolite, in applying Gordes zeolite 46% removal efficiency was achieved for 90 min of contact time in batch tests. Column studies were performed for the removal of Pb2+, Cd2+, and Zn2+ from a lead-zinc mining process raw wastewater. The clinoptilolite exhibited about 100%, 98%, and 96% removal efficiency for Pb, Zn2+, and Cd2+, respectively. The overall adsorption capacity for Bigadic clinoptilolite was around 23 mg Pb2+/g, 24 mg Zn2+/g, and 0.6 mg Cd2+/g.

Keywords: Clinoptilolite, Heavy Metals, Industrial Wastewater, Heavy-Metals, Aqueous-Solution, Waste-Water, Removal, Clinoptilolite, Exchangers, Ni2+

? Acemioglu, B. and Alma, M.H. (2004), Removal of Cu(II) from aqueous solutions by Calabrian pine bark wastes. *Fresenius Environmental Bulletin*, **13** (7), 585-590.

Full Text: [2004\Fre Env Bul13, 585.pdf](2004/Fre%20Env%20Bul13,%20585.pdf)

Abstract: In this study the sorption capacity of the Calabrian pine bark wastes (Pinus brutia Ten) to remove Cu(II) ions from aqueous solutions was tested as function of experimental parameters, such as contact time, initial solution concentration, solution pH and solution temperature. Adsorption of copper ions on the bark wastes was so brisk that within 10 min approximately 60- 71% of Cu(II) ions could be removed. The amount of Cu(II) adsorbed increased with increasing initial solution concentration and pH, however, it varied partially with temperature. Experimental data showed that adsorption isotherm followed the Freundlich model, and isotherm parameters were calculated at different temperatures. Kinetic studies revealed that adsorption process followed the intra-particle diffusion kinetic. From the rate constants of intra-particle diffusion kinetics at various temperatures, it could be deduced that boundary layer thickness decreased with increasing, temperature. The activation energy of adsorption was -10.43 k J mol-1. Moreover, the thermodynamic parameters, standard free energy (ΔG), standard enthalpy (ΔH) and standard entropy ΔS), of the adsorption process were calculated. The results from experimental data indicated that adsorption process was of exothermic nature.

Keywords: Adsorption, Adsorption Isotherm, Cadmium, Calabrian Pine Bark Wastes, Copper, Cu(II) Removal, Equilibrium, Intra-Particle Transport Rate Constant, Kinetics, Lead(II), Lignin, Phenolysis, Thermodynamic Parameters, Water, Wollastonite

? Alkan, M., Demirbaş, Ö. and Doğan, M. (2004), Removal of acid yellow 49 from aqueous solution by adsorption. *Fresenius Environmental Bulletin*, **13** (11A), 1112-1121.

Full Text: [2004\Fre Env Bul13, 1112.pdf](2004/Fre%20Env%20Bul13,%201112.pdf)

Abstract: In this study, the removal of an acid dye, acid yellow 49, used in the textile industry with sepiolite was investigated as a function of ionic strength, pH and temperature. Adsorption process was attained to the equilibrium within 1 h. The adsorbed amount of acid yellow 49 increased with increasing ionic strength and temperature, but decreased with increasing pH. The experimental data were analysed by Langmuir and Freundlich isotherms, and it was found that the isotherm data were reasonably correlated by Freundlich isotherm. Furthermore, for the removal of acid yellow 49, a batch reactor was designed. The results indicated that sepiolite could be employed as an alternative to commercial adsorbents in wastewater treatment for the removal of colour and dyes.

Keywords: Adsorption, Sepiolite, Adsorption Isotherm, Batch Design, Dye, Reactive Dyes, Methyl Violet, Basic-Dyes, Equilibrium, Sepiolite, Perlite, Surfactants, Adsorbents, Kinetics, Green

? Veli, S. and Öztürk, T. (2005), Kinetic modeling of adsorption of reactive azo dye on powdered activated carbon and pumice. *Fresenius Environmental Bulletin*, **14** (3), 212-218.

Full Text: [2005\Fre Env Bul14, 212.pdf](2005/Fre%20Env%20Bul14,%20212.pdf)

Abstract: The reactive adsorption of azo dye from aqueous solutions by powdered activated carbon (PAC) and pumice was investigated. The impacts of several parameters, such as adsorbent quantity, pH, initial dye concentration, and stirring velocity on adsorption, were examined. The pseudo first- and second-order kinetic models were applied to describe the kinetic data, and to evaluate the rate constants. For both adsorbents, i.e. PAC and pumice, the experimental data fitted well with the second-order kinetic model, indicating that chemical sorption was the rate-limiting step of mass transfer.

Keywords: Reactive Azo Dye, Powdered Activated Carbon, Pumice, Kinetic Models, Aqueous-Solutions, Fly-Ash, Removal, Adsorbents, Dyestuffs, Sorption

? Kannan, N. and Rengasamy, G. (2005), Studies on the removal of nickel(II) ions by adsorption using various carbons: A comparative study. *Fresenius Environmental Bulletin*, **14** (6), 435-443.

Full Text: [2005\Fre Env Bul14, 435.pdf](2005/Fre%20Env%20Bul14,%20435.pdf)

Abstract: Studies on the removal of nickel(II) ions by adsorption on various carbons (commercial activated carbon (CAC) and chemically prepared ACs (CPACs) from raw materials like straw, saw dust and dates nut) have been carried out under batch mode of adsorption at 30°C with an aim to obtain information on treating effluents containing Ni(II) ions. The effect of various experimental parameters such as (i) initial concentration (ii) contact time, (iii) dose of adsorbent, (iv) initial pH of the solution, with CAC and CPACs, (v) particle size of CPACs (except CAC) and (vi) ionic strength (with CAC and CPACs) at 200 rpm speed of agitation has been investigated. The percentage removal of Ni2+ ions increased with the decrease in initial concentration and particle size of the adsorbent and increased with the increase in contact time, dose of adsorbent and initial pH (6) of the slurry. Ionic strength decreased the extent of adsorption. The adsorption data were modelled with the Freundlich, Langmuir, Dubinin-Radushkevich and Redlich and Paterson adsorption isotherms and first-order kinetic equations such as of Natarajan and Khalaf, Lagergren, Bhattacharya and Venkobachar and modified Elovich equations and intraparticle diffusion model. The kinetics of adsorption is found to be of first order with intra-particle diffusion as one of the rate determining steps. Thermodynamic parameters were evaluated from the equilibrium studies carried out at 30°, 35° and 40°C. Investigations on the desorption of Ni(II) ions from metal loaded ACs with various eluents and the possibility of reuse of regenerated ACs have also been carried out at 30 degrees C. The results on the removal of Ni(H) ions by CPACs are compared with CAC and cationic resin, Tulsion CXO-9(H). The results conclude that these carbons could be employed as low-cost alternative adsorbents to CAC in wastewater treatment for the removal of metal ions, in general, and nickel(R) ions, in particular.

Keywords: Adsorption, Removal of Nickel(II) Ions, Various Carbons, Adsorption Isotherms, Kinetics of Adsorption, Intra-Particle Diffusion, Adsorption Capacity, Comparison, Thermodynamic Parameters, Desorption, Reuse, Water and Wastewater Treatment, Low-Cost Adsorbents, Aqueous-Solutions, Metal-Ions, Isotherm

? Malkoc, E. and Acar, F.N. (2005), A comparision of adsorption kinetics: Cr(VI) removal from aqueous solutions. *Fresenius Environmental Bulletin*, **14** (6), 509-513.

Full Text: [2005\Fre Env Bul14, 509.pdf](2005/Fre%20Env%20Bul14,%20509.pdf)

Abstract: Batch sorption studies have been carried out to determine the effects of initial pH and metal concentration on the adsorption of Cr(VI) on Fagus orientalis L. The process was found to be dependent of pH and initial metal concentration. The most effective initial pH was determined to be 1.0 for Cr(VI) ions. The experimental data were analysed using the pseudo-first and pseudo-second order adsorption kinetic models, and kinetic constants were calculated depending on initial pH and Cr(VI) concentration values. The experimental data were fitted by the second order kinetic model, which indicates that chemical adsorption is the rate-limiting step, both for initial pH and initial Cr(VI) level.

Keywords: Chromium Removal, Adsorption, Adsorption Kinetics, Sphagnum Moss Peat, Waste-Water, Chromium, Biosorption, Adsorbents, Carbons, Sludge

? El-Sharouny, E.E. and El-Sersy, N.A. (2005), Biosorption of textile dyes by brewer’s yeast biomass. *Fresenius Environmental Bulletin*, **14** (10), 928-933.

Full Text: [2005\Fre Env Bul14, 928.pdf](2005/Fre%20Env%20Bul14,%20928.pdf)

Abstract: Biosorption is becoming a promising alternative to replace or supplement the present dye removal processes from dye wastewaters. Based on the successful results of metal biosorption by brewer’s yeast, the same dried biomass was used in batch studies for textile dyes biosorption. Out of ten tested azo dyes, Fast Blue (FB) and Direct Pink (DP) were shown to be highly sequestered by the non-living yeast biomass where uptake values of about 3400mg/gdwt and 6400mg/gdwt were achieved at initial dye concentrations of 300 and 400 mg/l, respectively. These results were confirmed by the Freundlich isotherm. Aiming to reach a maximal dye biosorption, an optimization of the reaction conditions was applied by using the steepest ascent experimental design, in which two factors were changed; dye concentration and cell mass. A maximum dye removal of approximately 450 and 850 mg/g for FB and DP, respectively, was achieved in the solution of the trial number 12, which had an initial dye concentration of 1000 mg/l and a mass concentration of 7 g/l. The localization of the dyes in the yeast cells was detected using Transmission Electron Microscope (TEM). Dyes were found to be mainly adhered to the cell wall, and some was found in the shrunken cytoplasm in case of Fast Blue.

Keywords: Azo, Azo Dyes, Biosorption, Effluents, Freundlich Isotherm, Fungal Biomass, Microbial Decolorization, Pb2+ Accumulation, Saccharomyces-Cerevisiae, Steepest Ascent Design, Yeast

? Du, D.Y., Yu, Z.S., Liu, J.Z. and Lu, X.H. (2005), Adsorption of fluoride from aqueous solution by aluminum pillared rectorite. *Fresenius Environmental Bulletin*, **14** (11), 972-975.

Full Text: [2005\Fre Env Bul14, 972.pdf](2005/Fre%20Env%20Bul14,%20972.pdf)

Abstract: In this paper, aluminum-pillared rectorite as a new fluo-ride remover is examined. Its preparation method and ad-sorbability for fluorine are reported. This adsorbent has ad-vantageous characteristics, such as easy preparation, strong adsorptive capacity, no disintegration in water, and easy regeneration. When the concentration of fluorine is 30 mg/ L, the adsorptive capacity for fluorine reaches 0.85 mg/g. Its adsorbability is stronger than that of the commonly used active alumina under the same conditions.

? Çiçek, H. and Dursun, G. (2005), The removal of phenol from aqueous solutions by dehydrated beet pulp carbon. *Fresenius Environmental Bulletin*, **14** (11), 976-982.

Full Text: [2005\Fre Env Bul14, 976.pdf](2005/Fre%20Env%20Bul14,%20976.pdf)

Abstract: The adsorption of phenol onto dehydrated beet pulp (DBP) was investigated at different initial pHs (1-12), temperatures (25-60 degrees C), and phenol concentrations (25500 mg L-1). The optimum adsorption conditions were found to be 8.0 for initial pH, 100 mg L-1 for initial phenol concentration, 60 degrees C for temperature and 0.5 g L-1 for adsorbent dosage. Adsorption data were well-described by the Freundlich model, although they could also be modelled by Langmuir. The pseudo-first order and pseudo-second order kinetic models were applied to test the experimental data. It was concluded that the pseudo-second order kinetic model provided better correlation of the experimental data rather than the pseudo-first order model. The thermodynamic constants of the adsorption process were also evaluated by using the thermodynamic equilibrium coefficients obtained at different temperatures.

Keywords: Phenol, Adsorption, Dehydrated Beet Pulp (DBP), Equilibrium; Kinetic, Thermodynamic Parameters, Activated Carbon, Waste-Water, Adsorption, Equilibrium, Sorption

? Aktaş, Y.K. and İbar, H. (2005), Sorption and preconcentration of cadmium, iron and antimony on bentonite modified with trioctylamine. *Fresenius Environmental Bulletin*, **14** (11), 983-985.

Full Text: [2005\Fre Env Bul14, 983.pdf](2005/Fre%20Env%20Bul14,%20983.pdf)

Abstract: Bentonite, loaded with trioctylamine (C24H51N, TOA), was used as pre-concentration sorbent for cadmium, iron and antimony prior to their determination by flame atomic absorption spectrometry (FAAS). The analytes were quan-titatively retained on the proposed adsorbent at pH 4, and its adsorptive capacity was determined to be 13.23 mg/g, 3.33 mg/g and 10 mg/g for Cd, Fe and Sb, respectively. The metal ions could then be quantitatively eluted with 1 M nitric acid, and recoveries were 99.9±1 %, 97.0±2 % and 92.1±3 % for Cd, Fe and Sb (95% confidence level). The relative standard deviations varied between 1.0 - 7.1%. Detection limits (3s) were 0.9 μL-1 for Cd, 1.2 μL-1 for Fe and 1.4 μL-1 for Sb. By applying this column proce-dure, the elements studied can be reliably determined in the presence of Na+, K+ and Mg+. Finally, the method was applied to wastewater analysis.

Keywords: Absorption, Acid, Adsorption, Analysis, Antimony, Aqueous-Solution, Bentonite, Cadmium, Capacity, Copper, Determination, Elements, Flame Atomic Absorption Spectrometry (FAAS), Iron, K+, Modified, Nitric Acid, pH, Preconcentration, Removal, Standard, Trioctylamine (TOA), Wastewater, Zinc

? Şahin, Ö., Demirel, S. and Dilekoğlu, M.F. (2005), Removal of Pb(II) from aqueous solution by antep pistachio shells. *Fresenius Environmental Bulletin*, **14** (11), 986-992.

Full Text: [2005\Fre Env Bul14, 986.pdf](2005/Fre%20Env%20Bul14,%20986.pdf)

Abstract: Adsorption studies for Pb(II) removal from aqueous solution on soft shell of Antep pistachio (Pistacia vera L.) were carried out in a batch system under varying experi-mental conditions of contact time, pH, temperature, initial Pb(II) concentration and adsorbent dosage. It was found that all equilibrium isotherms fitted the Freundlich isotherm well in the concentration rage of 5-100 mg.l-1 Pb(II). The adsorption of Pb(II) on the soft shell of Antep pistachio obeys first order reversible kinetics. The adsorption effi-ciency remained constant across the pH range of 4 to 7 for a Pb(II) solution with the concentration of 30 mg.l-1. This pH range was also favorable for the adsorption of Pb(II) in wastewater. It was determined that temperature of adsorp-tion media does not play an important role on the adsorp-tion efficiency.

? Turabik, M. and Kumbur, H. (2005), Equilibrium and kinetic modelling of adsorption of a basic dye on bentonite. *Fresenius Environmental Bulletin*, **14** (12B), 1105-1114.

Full Text: [2005\Fre Env Bul14, 1105.pdf](2005/Fre%20Env%20Bul14,%201105.pdf)

Abstract: The adsorption of a basic dye (Basic Red 46) from aqueous solutions onto bentonite was studied in a batch system with respect to initial dye concentrations (200 800 mg/L), different particle sizes, dp (dp < 45, 75-45, 12575, 150-125 μm) and temperatures (10-50°C). The adsorption equilibrium was described by Langmuir isotherm model with a maximum adsorption capacity of 322.6 mg/g (r2 = 0.999). The results showed that the initial dye concentration, particle size and temperature affect adsorption capacity. An increase in initial dye concentration and a decrease in particle size results in a significant increase of adsorption capacity. Pseudo-first and pseudo-second order kinetic models were used to describe the kinetic data, and the rate constants and regression coefficients were evaluated. The experimental data fitted well to the pseudo-second order kinetic model, which indicates that the chemical sorption is the rate-limiting step. Activation energy has also been evaluated by using the pseudo-second order rate constants and found to be 33.0 kJ/mol for Basic Red 46 adsorption onto bentonite. Thermodynamic studies showed that this adsorption is endothermic and spontaneous in nature.

Keywords: Adsorption, Bentonite, Basic Red 46, Equilibrium, Pseudo Kinetic Models, Aqueous-Solutions, Schizomeris-Leibleinii, Activated Clay, Waste-Water, Removal, Ions, Biosorption, Sorption, Montmorillonite, Wastewaters

? Turhan, K., Ekinci-Dogan, C., Akcin, G. and Aslan, A. (2005), Biosorption of Au(III) and Cu(II) from aqueous solution by a non-living *Usnea longissima* biomass. *Fresenius Environmental Bulletin*, **14** (12A), 1129-1135.

Full Text: [2005\Fre Env Bul14, 1129.pdf](2005/Fre%20Env%20Bul14,%201129.pdf)

Abstract: The preconcentration of trace copper and gold from aqueous solutions by Flame Atomic Absorption Spectrometry (FAAS) determination was studied by using lichen (Usnea longissinia), as a biosorbent. Biosorption of Au(III) and Cu(II) from dilute aqueous solutions by biomass of the lichen Usnea longissima was investigated. The removal and recovery of gold and copper were studied by applying batch technique. The experimental parameters which are the pH of the solution, stirring time, the amount of lichen, the concentration of metals on retention and elution have been investigated. Gold and copper were adsorbed on lichen at pH 2 and pH 8, respectively. Quantitative retention (between 94% and 99%) was obtained within 75 minutes for both metals. Maximum capacity of 1.0 g of dried lichen for biosorption of Au(III) and Cu(II) were found as 9.4 mg of Au(III) and 24.0 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 Cu(II). The method proposed in this study was applied to spring mineral water analysis and metals adsorbed on the lichens were quantitatively (>= 90%) recovered from mineral water samples by using 0.5 mol.L-1 hydrochloric acid.

Keywords: Biosorption, Metal Removing, Usnea Longissima, FAAS, Adsorption Isotherms, Turkey, Lichens, Removal, Regions, Artvin, Copper, Water

? Öğünç, T., Şener, E. and Şener, Ş. (2005), Phenol and p-chlorophenol adsorption on modified and unmodified Ti(OEt)4. *Fresenius Environmental Bulletin*, **14** (12B), 1153-1157.

Full Text: [2005\Fre Env Bul14, 1153.pdf](2005/Fre%20Env%20Bul14,%201153.pdf)

Abstract: n this study, adsorption of phenol and p-chlorophenol (PCF) on metal-organic adsorbents, prepared by hydrolysis and subsequent condensation of acid-modified and unmodified Ti(OEt)4, were investigated. Phenol and PCF uptake was related to adsorbate concentration, adsorbent’s type, contact time, and temperature. The adsorption equilibrium of phenol and PCF on the prepared adsorbents was described by the Langmuir and the Freundlich models. It was observed that the adsorbents based on modified Ti(OEt)4 were more effective for organics than the nonmodified counterparts. In addition, adsorption of PCF was greater than that of phenol on all adsorbent powders.

Keywords: Activated Carbons, Adsorbents, Adsorption, Adsorption Equilibrium, Aqueous-Solutions, Concentration, Condensation, Dyes, Equilibrium, Hydrolysis, Isotherm, Isotherm, Liquid-Phase Adsorption, Models, Organic Pollutant, Organics, P-Chlorophenol, Phenol, Removal, Sorption, Temperature, Uptake, Waste-Water

? Kahraman, S. and Yalcin, P. (2005), Removal of dyes from aqueous solution using various agricultural wastes as biosorbent. *Fresenius Environmental Bulletin*, **14** (12B), 1196-1201.

Full Text: [2005\Fre Env Bul14, 1196.pdf](2005/Fre%20Env%20Bul14,%201196.pdf)

Abstract: Low cost and locally available two renewable biosorbents (cotton stalk and apricot seed) were investigated to remove Astrazone Blue and Astrazone Red from aqueous solution. The effects of various experimental parameters such as dye concentration, adsorbent amount, adsorbent particle size and initial pH were tested and optimal experimental conditions were examined. The results showed that as the amount of adsorbent was increased, the percentage of dye removal increased accordingly. The ratios of dye sorbed increased as the adsorbent particle size decreased. The dye removal efficiency of two agricultural waste was in the order cotton stalk > apricot seed. In addition, the antibacterial effect of untreated and treated dyes on a soil bacterium, P. aeruginosa was determined. The adsorption of these dyes with agricultural wastes reduced the toxic effect on P. aeruginosa. This reduction in toxic effect is important both in respect of environmental biotechnology and waste detoxification. The results in this study indicated that cotton stalk and apricot seed can be employed as lowcost and attractive alternatives in wastewater treatment for the removal of dyes.

Keywords: Agricultural Waste, Antibacterial Effect, Decolorization, Dyes, Removal of Dye, Textile Dyes, Industry Waste, Funalia-Trogii, Basic Dye, Adsorption, Decolorization, Water, Effluents, Residues, Pellets

? Ergene, A., Tan, S., Katircioğlu, H. and Oktem, Z. (2006), Biosorption of copper(II) on immobilised *Synechocystis* *aquatilis*. *Fresenius Environmental Bulletin*, **15** (4), 283-288.

Full Text: [2006\Fre Env Bul15, 283.pdf](2006/Fre%20Env%20Bul15,%20283.pdf)

Abstract: Synechocystis aquatilis was immobilized in Ca-alginate via entrapment. The plain alginate, and alive and heat-inactivated immobilized algae beads were used for the sorption of Cu2+ ions from aqueous solutions at 25°C. Kinetic studies showed a fast initial rate, followed by a slower biosorption one. Adsorption of Cu2+ on the biosorbents increased with increasing initial Cu2+ ions level in the solution. The heat-inactivated alga preparation showed a higher biosorption capacity than the alive counterpart.

The biosorption equilibrium was established approx. in 3 h, and the equilibrium was well-described by the Langmuir and Freundlich adsorption isotherms. The effect of pH was also investigated and the maximum adsorption of Cu2+ ions on the biosorbents was obtained approx. at pH 5.6.

Keywords: Copper(II) Removal, Biosorption of Heavy Metals, Algal Biosorbent, Ca-Alginate, Synechocystis Aquatilis, Heavy-Metals, Cell-Walls, Alginate, Removal, Binding, Equilibrium, Cadmium, Biomass, Algae, Ions

? Kaya, Y., Vergili, I., Gonder, Z.B. and Barlas, H. (2006), Investigation of organic matter removal from waters with adsorption polymers. *Fresenius Environmental Bulletin*, **15** (5), 437-440.

Full Text: [2006\Fre Env Bul15, 437.pdf](2006/Fre%20Env%20Bul15,%20437.pdf)

Abstract: In the recent years, concentrations of anthropogenic organic matters have increased in ground and surface waters. Due to carcinogenic and toxic effects of some of these pollutants. they have to be removed, in order to guarantee safe drinking and potable water. Adsorption polymers are becoming alternatives to activated carbon for re-moval of organics from waters, wastewaters and waste gases by adsorption techniques.

In this study, the removal of p-nitroaniline, p-nitrophenol and p-nitrobenzaldehyde from water by using adsorption polymers was investigated. The results obtained with Lewatit VP OC 1163 showed that p-nitroaniline was more effectively adsorbed than the other compounds. In addition, it was found that all the tests can be controlled by means of ratio coefficients between different organic matter parameters.

Keywords: Adsorption Polymers, SAK(254), Aromatic Compounds, Organic Matter Removal

? Öztürk, N. and Bektaş, T.E. (2006), Batch adsorption of dyestuff from aqueous solutions onto various adsorbents. *Fresenius Environmental Bulletin*, **15** (6), 489-496.

Full Text: [2006\Fre Env Bul15, 489.pdf](2006/Fre%20Env%20Bul15,%20489.pdf)

Abstract: In this study, removal of dyestuff from aqueous solu-tions by adsorption was investigated. Sepiolite, sepiolite activated by HCl, sepiolite activated by HNO3, slag, and powdered activated carbon were used as adsorbents. Black B solution (30 mg L-1) was used in batch adsorption ex-periments. Different parameters (contact time, pH, adsorb-ent dosage, initial dye concentration, and temperature) ef- fects on removal of Black B were examined. The equilib-rium time was found to be 1320, 150, 120, 360 and 45 min. for sepiolite, sepiolite activated by HCl, sepiolite acti-vated by HNO3, slag, and powdered activated carbon, re-spectively. The most effective pH for Black B removal was 2 for sepiolite, sepiolite activated by HCl, and slag, and pH did not affect Black B removal significantly for the other adsorbents. Adsorbent dosages were varied from 0.1-2 g per 50 mL solution. An increase in adsorbent dos-age increased the percent re-moval of Black B. A series of isotherm studies were undertaken, and the data evaluated for compliance with the Langmuir and Freundlich isotherm models. To investigate the adsorption mechanisms, three simplified kinetic models, i.e., pseudo first-order, pseudo second-order, and intraparticle diffusion, were tested. Ad-sorption followed pseudo second-order rate kinetics. The correlation coefficients for pseudo-second order kinetic model are greater than 0.9926. Experimental data show that slag and powdered activated carbon were effective for Black B removal.

? Kucukgul, E.Y. and Kudu, S. (2006), Zinc and copper adsorption from an aqueous solution onto activated carbon. *Fresenius Environmental Bulletin*, **15** (6), 512-517.

Full Text: [2006\Fre Env Bul15, 512.pdf](2006/Fre%20Env%20Bul15,%20512.pdf)

Abstract: Batch studies were carried out to evaluate the potential of Type 1 and Type 2 activated carbons for the adsorption of zinc and copper from aqueous solutions. The effects of particle size, pH, initial concentrations, and contact time on adsorption of zinc and copper, and the adsorption capacities of adsorbents were investigated. The adsorption in both systems is highly dependent on particle size, pH, initial adsorbate concentration, and contact time. The finest particle size (0.25-0.50 mm) showed the best Zn(II)((aq)) and Cu(II)((aq)) removal efficiencies, at pHs 7.03 and 4.49, for both activated carbons. The Langmuir isotherm successfully represented the adsorption phenomenon at these specific conditions. Langmuir constants Q(0) (mg/g) belonging to Type1 AC and Type2 AC, respectively, are 6.035 and 3.821 mg/g for Zn(II)((aq)) removal, but 6.930 and 0.267 mg/g for Cu(II)((aq)) removal.

Keywords: Adsorption, Activated Carbon, Zinc, Copper, Heavy Metal Removal, Heavy-Metals, Solid-Wastes, Removal, Cadmium, Sorption, Cu(II), Peat

? Cui, L.Z., Wu, G., Deng, K.J., Won, S.W. and Yun, Y.S. (2006), Application of RR 4 biosorption models. *Fresenius Environmental Bulletin*, **15** (11), 1442-1446.

Full Text: [2006\Fre Env Bul15, 1442.pdf](2006/Fre%20Env%20Bul15,%201442.pdf)

Abstract: Protonated beer waste was used as a new type of adsorbent for the removal of Reactive Red 4 (RR 4). Various experimental parameters were investigated. Adsorption reached equilibrium in 18 hours. As the solution pH decreased the dye uptake increased, and under alkaline conditions desorption was dominating. The pseudo-second-order model and Langmuir isotherm model provided a high degree of correlation with the experimental data for the biosorption processes. The rate constant, the equilibrium sorption capacity and the initial sorption rate were calculated. The maximum adsorption capacities of beer waste were 82.23 ± 8.67 and 72.50 ± 6.45 mg/g at pHs 1 and 2, respectively. Kinetic study showed a pseudo-second-order rate of adsorption with respect to the solution. These results of adsorption performance indicate the beer waste as a potentially economical adsorbent for dye removal.

Keywords: Waste, Biosortpion, Reactive Red 4, Textile Dyes, Removal, Biomass

? Selek-Murathan, A. and Bütün, M. (2006), Removal of lead ions from dilute aqueous solution in packed columns by using natural fruit shells through adsorption. *Fresenius Environmental Bulletin*, **15** (12A), 1491-1498.

Full Text: [2006\Fre Env Bul15, 1491.pdf](2006/Fre%20Env%20Bul15,%201491.pdf)

Abstract: In this study, removal of lead ions using packed adsorption columns was investigated. The effect of initial concentration, temperature and type of sorbent (natural and regenerated horse chestnut) on lead removal was studied. In the sorption process, the outer layer of horse chestnut was more effective than the inner layer, and the calculation value of lead adsorption on the outer layer of horse chestnut was 109.60 mg per kg sorbent. The equilibrium sorption isotherms have been analyzed by Langmuir and Freundlich models. The Langmuir isotherms have the highest correlation coefficients. Sorption process was an endothermic process, as a result of thermodynamic parameter calculations. The kinetic data of the sorption showed that the second-order equation was more appropriate, indicating that the intraparticle diffusion is the rate-limiting, factor.

Keywords: Adsorbent, Adsorption, Azo Dyes, Biosorption, Diffusion, Equilibrium, Equilibrium, Fixed-Bed, Heavy-Metals, Horse Chestnut, Isotherms, Kinetic, Lead, Lead Ions, Packed Columns, Reactive Dyes, Sepiolite, Sorption, Temperature, Waste-Water, Zinc

? Bhatnagar, A., Minocha, A.K., Kim, S.H. and Jeon, B.H. (2007), Removal of some metal ions from water using battery industry waste and its cement fixation. *Fresenius Environmental Bulletin*, **16** (1), 99-103.

Full Text: 2007\Fre Env Bul16, 99.pdf

Abstract: A cheap adsorbent has been prepared utilizing battery industry waste, and investigated for the removal of some metal ions (Pb, Cu, Cr and Zn) from aqueous solutions. The results have shown that it adsorbs metal ions to a sufficient extent (33-64 mg g-1). The analysis of kinetic data indicates that adsorption is a first-order process. Further, the metal-laden adsorbent was immobilized into cement for ultimate disposal, and no significant leaching was observed from the stabilized products. A mortar specimen prepared with 10% metal-laden adsorbent showed nearly the same compressive strength than cement alone. Thus, the present studies clearly reveal that battery industry waste can be fruitfully employed in treating industrial effluents containing toxic metal ions. The proposed technology (utilization of industrial wastes for effluent treatment and ultimate disposal of adsorbents laden with pollutants in cementitious materials by fixation) provides a double-fold aim of waste-water treatment and solid waste management.

Keywords: Industrial Waste Minimization, Battery Industry Waste, Adsorbent, Metal Ions Removal, Water Treatment, Blast-Furnace Sludge, Aqueous-Solution, Fly-Ash, Sorption, Adsorbent, Adsorption, Lead(II), Peat, Slag

? Kuleyin, A. and Ergun, O.N. (2007), Studies on removal of ammonium ions from synthetic aqueous solutions and field leachate samples using clinoptilolite. *Fresenius Environmental Bulletin*, **16** (2), 168-175.

Full Text: 2007\Fre Env Bul16, 168.pdf

Abstract: The aim of this study is to investigate the capacity of the clinoptilolite for ammonium nitrogen removal from both synthetic solutions and solid waste leachate. Initially, studies were performed in batch reactors using synthetic ammonia nitrogen solutions, in order to establish the applicability of both kinetic sorption rate models as well as the adsorption isotherm models. Subsequently, column studies were carried out with leachate collections from the field to establish the breakthrough time intervals and concentrations, specifically for ammonia nitrogen. The effect of clinoptilolite sample pre-treatments on removal efficiency was also investigated in a series of batch-wise experiments. The Langmuir, Freundlich and Tempkin equations, which are in common use for describing sorption equilibrium of wastewater-treatment applications, were applied to the experimental data. The sorption kinetics were tested for pseudo-first order, pseudo-second order, Elovich and intra-particle diffusion models, and the rate constants of all kinetic models were calculated and compared. The best correlation coefficient was obtained using the pseudo second-order kinetic model, which shows that ammonium uptake process followed the pseudo-second order rate expression. The results obtained clearly showed that the zeolitic tuffs of the Cankiri-Corum Basin in Turkey can be used for removal of ammonium ions both from synthetic aqueous solutions and leachate.

Keywords: Adsorption, Adsorption Isotherm, Ammonia, Ammonium, Ammonium Removal, Ammonium Uptake, Applications, Capacity, Clinoptilolite, Concentrations, Correlation, Diffusion, Efficiency, Equilibrium, Exchange, Freundlich, Intra-Particle Diffusion, Isotherm, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Landfill Leachate, Langmuir, Leachate, Lead, Model, Models, Natural Zeolite, Nitrogen, Nitrogen Removal, Pretreatment, Pseudo-Second-Order, Removal, Removal Efficiency, Solid Waste, Sorption, Sorption Equilibrium, Sorption Kinetics, Turkey, Uptake, Waste, Wastewater Treatment, Waters

? Narr, J., Viraraghavan, T. and Jin, Y.C. (2007), Applications of nanotechnology in water/wastewater treatment: A review. *Fresenius Environmental Bulletin*, **16** (4), 320-329.

Full Text: 2007\Fre Env Bul16, 720.pdf

Abstract: The applications of nanotechnology in environmental engineering are vast with emphasis in areas, such as pollution prevention, treatment and remediation. In water and wastewater treatment research has been shown that nanoparticles have expedited reactions, eliminated the use of expensive UV lights, and removed organic dyes and inorganic compounds, such as nitrates, efficiently. In case of groundwater remediation, refractory organic compounds have been treated more efficiently and with simpler infrastructure compared to conventional treatment methods. However, there is insufficient data pertaining to pilot or field scale studies. There is also a lack of complete life cycle analysis of the fate and transport of the nanoparticles in the environment, and their general effects on health implications. This review paper presents information on nanotechnology applications in water and wastewater treatment and groundwater remediation.

Keywords: Analysis, Applications, Chelating-Agents, Complete, Compounds, Data, Dechlorination, Dyes, Environment, Field, Life-Cycle, Nanomaterials, Nanoparticies, Nanoparticles, Nanoscale Iron Particles, Nanotechnology, Nitrates, Organic Compounds, Photocatalytic Degradation, Pollution, Poly(Amidoamine) Dendrimers, Reduction, Remediation, Remediation, Research, Review, Titanium Dioxide (TiO2), Treatment, UV, Wastewater, Wastewater Treatment, Water, Zero-Valent Iron (ZVI)

? Ozmetin, C. and Aydin, O. (2007), A semi-empirical model for adsorption of magnesium ion from magnesium impurity-containing saturated boric acid solutions on Amberlite IR-120 resin. *Fresenius Environmental Bulletin*, **16** (7), 720-725.

Full Text: 2007\Fre Env Bul16, 720.pdf

Abstract: In this study, the use of Amberlite IR-120, strong acidic cation exchange resin, was investigated to remove magnesium impurity from saturated boric acid solutions. The magnesium impurity caused by magnesium compounds in raw colemanite is a very important problem, which has to be solved by the industry. The experiments were carried out in a batch reactor. Adsorption kinetics of magnesium was studied as a function of resin/solution ratio (g/100 mQ, initial solution pH and temperature (K). The obtained kinetic data were employed with pseudo-first order and pseudo-second order models. It was determined that the pseudo-second order model was the best fitting kinetic model. Furthermore, a semi empirical model was developed to predict operational conditions of the batch process in the following form; t / q(1) = 313.737 x [H](0.0055) x (S / L)(0-9228) x exp(-5209.856/RT)x t(1.0129).

Keywords: Acid, Adsorption, Adsorption Kinetics, Amberlite, Amberlite IR-120, Aqueous-Solution, Batch, Batch Reactor, Boric Acid, Cation, Cation Exchange, Cation Exchange Resin, Exchange, Fitting, Function, Impurity, Ion, Ion Exchange, Kinetic, Kinetic Model, Kinetics, Magnesium, Magnesium Removal, Model, Models, Order, pH, Predict, Process, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Reactor, Resin, Semi-Empirical, Semi-Empirical Model, Solution Ph, Solutions, Sorption, T, Temperature

? Zhou, P.J., Xie, L.L., Liu, L.J., Li, J., He, F. and Wu, Z.B. (2007), Studies on the adsorption equilibrium and kinetics of pentachlorophenol on suspended particulate matter of Donghu Lake water. *Fresenius Environmental Bulletin*, **16** (8), 856-860.

Full Text: 2007\Fre Env Bul16, 856.pdf

Abstract: In this paper, the adsorption equilibrium and kinetic behaviors of pentachlorophenol (PCP) on suspended particulate matter (SPM) in Donghu Lake water were investigated. The Langmuir and Freundlich adsorption models were applied to describe the equilibrium isotherms and their constants were evaluated. The results indicated that the adsorption of PCP on Donghu Lake SPM followed the Freundlich isotherm. Furthermore, the first order Lagergren rate equation and the pseudo-second order rate equation were used to describe the kinetic behaviors of PCP adsorption on Donghu Lake SPM, the rate constants were determined, and the kinetic process of the adsorption of PCP on Donghu Lake SPM followed the second order kinetic model.

Keywords: Activated-Sludge, Adsorption, Adsorption Equilibrium, Adsorption Equilibrium and Kinetics, Adsorption Models, Aqueous-Solution, Biosorption, Constants, Donghu Lake, Dyes, Equilibrium, Equilibrium Isotherms, First Order, Freundlich, Freundlich Isotherm, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Lagergren, Langmuir, Matter, Model, Models, Nonionic Surfactant, Order, Ozonation, Paper, Particulate, Particulate Matter, PCP, Pentachlorophenol, Pentachlorophenol (PCP), Process, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Rate, Rate Constants, Rate Equation, Second Order, Sorption, Spm, Suspended Particulate Matter, Suspended Particulate Matter (SPM), System, Water

? Ugurlu, M. and Hazirbulan, S. (2007), Removal of some organic compounds from pre-treated olive mill wastewater by sepiolite. *Fresenius Environmental Bulletin*, **16** (8), 887-895.

Full Text: 2007\Fre Env Bul16, 887.pdf

Abstract: In this study, Olive Mill Wastewater (OMW) was treated with lime to a pH.7.0, followed by 30% H2O2 solution. Phenol. lignin and colour changes were analyzed by UV- VIS spectrophotometry after a one-week period. Phenol and lianin removals were found to be 99.5 % and 35 %, respectively. Then, adsorption experiments were conducted on these solutions by using different sepiolite samples, i.e. heat-activated sepiolite (AS), thermal-acid-activated sepiolites (AAS), and thermal-base-activated sepiolites (BAS). The surface modification of these samples was examined by the SEM, XRD and FT-IR techniques. Phenol and lignin removal was investigated at different adsorption times by these sepiolite samples. BAS samples were shown to provide more removal than those of AAS and AS. In addition, the kinetic data supported the pseudo-second order model, but showed very poor fit for pseudo-first order and intraparticle diffusion models. The adsorption data for AS were also fitted to Lanomuir and Freundlich isotherms. AS exhibited a better fit to Langmuir than Freundlich. Finally, Gibbs-free energy for lignin and phenol were calculated.

Keywords: Aas, Adsorption, Adsorption, Aqueous-Solutions, Clay, Clays, Colour, Diffusion, Diffusion Models, Effluent, Energy, Freundlich, Freundlich Isotherms, FT-IR, Ftir, Gibbs Free Energy, H2O2, Intraparticle Diffusion, Isotherms, Kinetic, Langmuir, Lignin, Lime, Model, Models, Modification, Olive, Olive Mill Waste-Water, Order, Organic, Organic Compounds, Phenol, Phenolic-Compounds, Pretreated, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Removal, Sem, Sepiolite, Solutions, Spectrophotometry, Surface, Surface Modification, System, Techniques, UV, VI, Wastewater, XRD

? Bhatnagar, A., Minocha, A.K., Jeon, B.H., Park, J.M. and Lee, G. (2007), Adsorption of orange G dye on paper mill sludge: Equilibrium and kinetic modeling. *Fresenius Environmental Bulletin*, **16** (9A), 1049-1055.

Full Text: 2007\Fre Env Bul16, 1049.pdf

Abstract: In the present study, paper mill sludge (generated as a waste material from paper industries) was investigated as an adsorbent for the removal of orange G dye (an anionic dye) from aqueous solutions. The adsorption capacity of paper mill sludge adsorbent for orange G dye was found to be 62.3 mg/g at 25°C. The adsorption was studied as a function of contact time, concentration, and pH, by batch method. The adsorption data conform best to the Langmuir model. Three simplified kinetic models viz. pseudo-first-order, pseudo-second-order, and intra-particle diffusion models were tested to fit the experimental data. Kinetic parameters, rate constants, equilibrium sorption capacities and related correlation coefficients, for each kinetic model were determined. It was shown that the present system of orange G dye adsorption on paper mill sludge adsorbent could be well described by pseudo-second-order kinetic model. Based on the present investigations, it is reasonable to conclude that paper mill sludge can be utilized as low-cost adsorbent in treating colored dye effluents.

Keywords: Acid Dyes, Activated Carbons, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, and pH, Anionic, Anionic Dye, Aqueous Solutions, Aqueous-Solutions, Batch, Capacity, Color Removal, Concentration, Congo Red, Constants, Contact Time, Correlation, Diffusion, Diffusion Models, Dye, Dye Adsorption, Dye-Adsorption, Effluents, Equilibrium, Equilibrium Sorption, Experimental, Experimental Data, Function, G, Industries, Intra Particle Diffusion, Intra-Particle Diffusion, Intraparticle, Intraparticle Diffusion, Investigations, Kinetic, Kinetic Model, Kinetic Modeling, Kinetic Models, Kinetics, Langmuir, Langmuir Model, Low Cost Adsorbent, Low-Cost, Low-Cost Adsorbent, Method, Model, Modeling, Models, Orange G Dye, Paper, Paper Mill Sludge, Parameters, pH, Pseudo Second Order, Pseudo Second Order Kinetic, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Rate, Rate Constants, Removal, Sludge, Solutions, Sorption, Time, Waste, Waste Material, Waste-Water

? Srinivasan, A. and Viraraghavan, T. (2007), Biological processes for removal of oil from wastewater - A review. *Fresenius Environmental Bulletin*, **16** (12A), 1532-1543.

Full Text: 2007\Fre Env Bul16, 1532.pdf

Abstract: Wastewater from oil extraction industries such as palm oil and olive oil mills contain high levels of oil. Oil containing wastewater is of great concern as it creates problems such as foaming, growth of filamentous bacteria and floc formation in the treatment system. Physico-chemical methods such as Rotation, adsorption and skimming are employed to remove oil. Biological processes are also commonly used because most oils are biodegradable. Biological processes such as aerobic and anaerobic treatment systems and biodegradation methods using microorganisms and enzymes have been used for reducing the oil content. Aerobic systems such as activated sludge process using both acclimatized and non-acclimatized sludge are common. Among the biodegradation methods, the use of microorganisms and enzymes, either alone or in various combinations have been reported. Bacteria such as Acinetobacter sp., Pseudomonas sp., fungus such as Aspergillus sp., Mucor sp. and photosynthetic bacteria were found to remove oil. Microorganisms that produce hydrolytic enzymes include fungi such as Penicillium restrictum and Candida rugosa. Anaerobic systems involve use of reactors such as upflow anaerobic sludge blanket reactors, upflow anaerobic sludge fixed film bioreactor and modified anaerobic bioreactors. The review shows that vegetable oils present in wastewater can be readily removed by biological treatment methods.

Keywords: Activated-Sludge, Adsorption, Aerobic, Aerobic Biodegradation, Anaerobic, Anaerobic Treatment, Bacteria, Biodegradation, Biological Treatment, Enzymatic Pre-Hydrolysis, Enzymes, Extraction, Fatty-Acids, Fungi, Growth, Immobilized Lipases, Microorganisms, Mill Effluents, Oil, Oily Wastewater, Olive Oil, Phenolic Removal, Photosynthetic, Poultry Slaughterhouse Waste, Process, Processes, Removal, Review, System, Treatment, Wastewater, Yarrowia-Lipolytica

? Sutcu, H. (2007), Removal of Pb(II) and Ni(II) ions from aqueous solution by peat. *Fresenius Environmental Bulletin*, **16** (12A), 1551-1555.

Full Text: 2007\Fre Env Bul16, 1551.pdf

Abstract: The purpose of this study is to investigate the tendency of peat to adsorb Pb(II) and Ni(H) ions from an aqueous solution. The experiments conducted aimed at studying the effect of initial metal ion concentration, adsorbent dosage, aqueous solution pH and aqueous solution temperature in the single-component aqueous solutions. In addition, a binary-component aqueous solution was used to investigate the effects of contact time and desorption. According to the results of the experiments carried out under these conditions, it has been established that the optimum peat dosage is 2 g peat/L, the optimum pH 6, the optimum initial metal ion concentration 5 mg/L Pb(II) and 5 mg/L Ni(II), the aqueous solution temperature 20°C, and contact time 60 min. According to the results of all experimental conditions, the adsorption capacity was found to be Pb(H)>Ni(II). It has been established that the adsorption isotherm is well-suited to the Langmuir isotherm.

Keywords: Adsorption, Lead, Nickel, Peat, Langmuir, Heavy-Metals, Sorption, Kinetics, Cadmium, Copper, Moss

? Shi, X.Y., Xiao, B., Yang, X.Y., Zhou, X.P. and Li, J.F. (2007), Batch study of dye removal from aqueous solutions by adsorption on NaOH-treated firry sawdust. *Fresenius Environmental Bulletin*, **16** (12A), 1583-1587.

Full Text: 2007\Fre Env Bul16, 1583.pdf

Abstract: This paper presents a study on the batch adsorption of a basic dye, methylene blue, from aqueous solution onto NaOH-treated firry sawdust in order to explore its potential use as low-cost adsorbent for wastewater dye removal. The effects of initial pH, initial dye concentration and adsorbent dose on dye removal are studied. The isotherm study indicates that the sorption data can be modelled by Temkin isotherms, and initial pH >7 is favourable. The results indicate that the treated firry sawdust can be an attractive option for dye removal from diluted industrial effluents.

Keywords: Adsorption, Aqueous, Basic Dye, Biosorption, Blue, Dye, Dye Removal, Industry Waste, Isotherm, Isotherms, Methylene Blue, pH, Removal, Sawdust, Solutions, Sorption, Wastewater, Water

? Zvinowanda, C.M., Okonkwo, J.O., Mpangela, V., Phaleng, J., Shabalala, P.N., Dennis, T., Forbes, P., Agyei, N.M. and Ozoemena, K.I. (2008), Biosorption of toxic metals: The potential use of maize tassel for the removal of Pb(II) from aqueous solutions. *Fresenius Environmental Bulletin*, **17** (7A), 814-818.

Full Text: 2008\Fre Env Bul17, 814

Abstract: In this study, we show for the first time the removal of Pb(II) from aqueous solutions by tassel powder. Batch experiments were conducted on tassel powder, and the effects of contact time, pH, temperature and concentration on the extent of Pb(II) removal studied. The highest adsorption (about 80 %) was at pH 7, and equilibrium was established between contact times 4-24 h. Adsorption of 5 mg/L Pb(II) standard concentration was rapid suggesting that adsorption may have been controlled by external diffusion. When increasing the concentration from 10-20 mg/L, the controlling step of adsorption was suggested to be that of internal diffusion.

Keywords: Adsorption, Batch Adsorption Procedure, Cadmium, Contact Time, Cu, Diffusion, Heavy-Metals, Influence of pH, Ions, Low-Cost Adsorbent, Pb, Shells, Waste-Water

? Aci, F., Nebioglu, M., Arslan, M., Imamoglu, M., Zengin, M. and Kucukislamoglu, M. (2008), Preparation of activated carbon from sugar beet molasses and adsorption of Methylene blue. *Fresenius Environmental Bulletin*, **17** (8A), 997-1001.

Full Text: 2008\Fre Env Bul17, 997.pdf

Abstract: Four activated carbon samples were prepared from sugar beet molasses with zinc chloride as the chemical activating agent at different temperatures (600-800°C) and residence carbonization times (0-120 min.) under nitrogen atmosphere. The activated carbons were characterized by using N2- BET surface area and iodine number measurements. The results obtained are found to be between 1368.5-792.2 m2/g, and 221-162 mg/g, respectively. Adsorption of methylene blue from aqueous solution on the activated carbons produced using sugar beet molasses has been studied. Equilibrium concentrations were determined by using a UV-spectrophotometer. The adsorption data of each carbon sample (including the commercial AC) was analyzed by Freundlich adsorption isotherms. Experimental data are fitted into the Freundlich equation.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Aqueous, Aqueous-Solutions, BET Surface Area, Cadmium, Carbon, Dyes, Equilibrium, Freundlich, Ions, Isotherms, Methylene Blue, Nitrogen, Phase Adsorption, Phenols, Plum Kernels, Removal, Rice Hulls, Spectrophotometry, Stones, Sugar Beet Molasses, Surface Area

? Ozdemir, M. (2008), Removal of methyl violet from water by sunflower seed peel with adsorption method and determination of electrical field effect on adsorption. *Fresenius Environmental Bulletin*, **17** (9A), 1226-1235.

Full Text: 2008\Fre Env Bul17, 1226

Abstract: The removal of methyl violets from water by using sunflower seed peel as adsorbing agent was determined. Effect of pH, adsorbent dose, initial concentration and electrical field application were investigated. The adsorption efficiency was found to be about 99%, in case of pH = 7, initial concentration = 50 mg/l and adsorbent dose = 0.5 g. Applied electrical field of 300 V/m had a considerable effect on adsorption at pH 2, but not a significant role above this value. Kinetic studies showed that the process of adsorption of methyl violet to sunflower seed peel followed the pseudo-second order kinetic model. The values of rate constants indicated that adsorption was controlled by both pseudo-second order kinetics and intra-particle diffusion mechanism, but mainly by pseudo-second order kinetics. The equilibrium nature of methyl violet adsorption to sunflower seed peel has been described by Freundlich isotherms, but also thermodynamic parameters like free energy, entropy and enthalpy changes for the adsorption of methyl violet have been found and discussed.

Keywords: Adsorbent, Adsorbent Dose, Adsorption, Adsorption Efficiency, Application, Aqueous-Solutions, Changes, Concentration, Diffusion, Dye, Efficiency, Electrical Field Effect, Energy, Enthalpy, Entropy, Equilibrium, Field, Freundlich, Intra-Particle Diffusion, Intraparticle Diffusion, Isotherms, Kinetic, Kinetic Model, Kinetic Studies, Kinetics, Kinetics and Isotherms, Mechanism, Methyl Violet, Model, Pb(II) Ions, Perlite, pH, Pine Bark Wastes, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Rate Constants, Removal, Role, Surface Potential, Thermodynamic, Thermodynamic Parameters, Value, Water

? Uğurlu, M. (2008), Adsorption of phosphate from paper mill effluent onto sepiolite and fly ash. *Fresenius Environmental Bulletin*, **17** (9A), 1307-1315.

Full Text: [2008\Fre Env Bul17, 1307.pdf](2008/Fre%20Env%20Bul17,%201307.pdf)

Abstract: This study aimed to remove phosphate from paper mill industry (4500m3/h) wastewaters, which are discharged to the sea from a plant located in western Turkey. As adsorbents, fly ash, raw sepiolite and heat-activated sepiolite were used. The effect of factors such as, particle size, temperature, pH and initial of phosphate concentration on adsorption process was investigated. From kinetic studies, equilibrium time was found to be I h for fly ash and heat-activated sepiolite. The kinetic data supports pseudo-second order model (r2 >= 0.99) but shows very poor fit for pseudo-first order model (0.81 >= r2). 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 three different temperatures. It was seen that Langmuir isotherm model is better than Freundlich for both sepiolit and fly ash (r2>0.98). From experiments carried out at different pH values, it was observed that pH plays an important role in the adsorption process in removal of phosphate, 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. Adsorption of phosphate compounds increases with decreasing particle size.

Keywords: Acid, Adsorbents, Adsorption, Adsorption Isotherms, Adsorption Process, Aqueous-Solution, Carbon, Concentration, Data, Diffusion, Equilibrium, Equilibrium Time, Experiments, External Diffusion, Fly Ash, Freundlich, Isotherm, Isotherm Model, Isotherms, Kinetic, Kinetic Models, Kinetic Studies, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Methylene-Blue, Model, Olive Stone, Paper Mill Effluents, Particle Size, pH, Phosphate, Plant, Pore Diffusion, Pseudo First Order, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Removal, Removal of Phosphate, Role, Sepiolite, Size, Sorbent, Sorption, Sorption Process, Surfaces, Temperature, Textile Dyeing Effluent, Turkey, Wastewaters, ZnCl2 Activation

? Zhang, D.Y., Pan, X.L. and Wang, J.L. (2008), Enhanced adsorption of cobalt to spent swine bone by NaOH treatment: Kinetic, isothermal, thermodynamic and FTIR studies. *Fresenius Environmental Bulletin*, **17** (12A), 2091-2097.

Full Text: [2008\Fre Env Bul17, 2091.pdf](2008/Fre%20Env%20Bul17,%202091.pdf)

Abstract: Effects of NaOH treatment on the cobalt adsorption to bone were studied. Compared with the untreated bone, NaOH treatment increased cobalt sorption capacity of bone from 20.1-25.1 mg g-1 to 58.75 mg g-1. The kinetic studies demonstrated that the cobalt adsorption data for untreated bone or NaOH treated bone a-reed well with pseudo second-order equation. NaOH treatment resulted in an increase in initial sorption rate by a factor about 2 and a decrease in half-adsorption time (t(1/2)) by 40% at different temperature. Intraparticle diffusion study showed that intraparticle diffusion was not the only rate-limiting step in cobalt sorption to both untreated bone and NaOH treated bone. Both the Langmuir and the Freundlich models described the sorption data well for untreated bone and NaOH treated bone at different temperature. Thermodynamic studies showed that adsorption of cobalt to untreated or NaOH treated was endothermic but not spontaneous. Higher temperature was favorable for the sorption process toward spontaneous reaction and NaOH treatment also contributed to sorption process toward spontaneous reaction. The activation energy of sorption, E-a, was 8.01 kJ mol-1 for untreated bone and 13.38kJ mol-1 for NaOH treated bone, respectively, at an initial cobalt concentration of 200mg L-1at 298K. FT-IR spectra analysis showed that ion-exchange could be the most predominant mechanism involved in cobalt sorption by bone.

Keywords: Adsorption, Animal Bones, Chemical Modification, Cobalt, Kinetic, Lead, Meat, Removal, Sorption, Swine Bone

? Zafar, S.I., Bisma, M., Saeed, A. and Iqbal, M. (2008), FTIR spectrophotometry, kinetics and adsorption isotherms modelling, and SEM-EDX analysis for describing mechanism of biosorption of the cationic basic dye Methylene blue by a new biosorbent (Sawdust of Silver Fir; Abies Pindrow). *Fresenius Environmental Bulletin*, **17** (12A), 2109-2121.

Full Text: 2008\Fre Env Bul17, 2109.pdf

Abstract: Significantly high adsorption capacity (154 mg/g in 120 min) of a new adsorbent (silver fir sawdust; Abies pindrow) to remove methylene blue from aqueous medium is reported. Onset of dye adsorption was fast with 85% removal within 10 min. Adsorption kinetics was well described by pseudo-second-order equation, whereas fit to pseudo-first-order Lagergren equation was limited to pre-equilibrium rapid adsorption phase. Adsorption isotherms followed both Langmuir and Freundlich models. FTIR spectrophotometry showed major peaks of adsorption at 3400, 2900 and 1153/1058 cm-1 (-OH of phenols, C-H of methyl and methylene. and C-O present in lignin), 1423 cm-1 (aromatic rings of lignin and cellulose), and 1263 cm-1 (cellulose bending modes), which relate well with 69.4% fibre (42.1% cellulose+hemicellulose; 27.3% lignin) present in the sawdust. Correspondence of active sites in the raw adsorbent with sorption of the dye on these sites using FTIR spectra is reported for the first time. Also reported for the first time, as evidence of dye adsorption, is the detection of S and N atoms in the dye-loaded sawdust, and no detection of these in raw sawdust using SEM-EDX analysis.

Keywords: Activated Carbon, Adsorption, Agricultural Waste, Aqueous-Solutions, Decolorization, Dye-Adsorption, Dye-Adsorption Kinetics, Effluent, Equilibrium, Ftir Spectrophotometry, Methylene Blue, Removal, SEM-EDX Analysis, Silver Fir Sawdust, Sorption, Textile Dyes, Water-Hyacinth

? Zhu, Y.N., Wang, D.Q., Zhang, X.H. and Qin, H.D. (2009), Adsorption removal of Methylene blue from aqueous solution by using bamboo charcoal. *Fresenius Environmental Bulletin*, **18** (3), 369-376.

Full Text: [2009\Fre Env Bul18, 369.pdf](2009/Fre%20Env%20Bul18,%20369.pdf)

Abstract: The adsorption removal of Methylene blue from water by bamboo charcoal was studied in a batch adsorption system. Experiments were carried out as function of contact time, temperature, adsorbent dose and particle size, initial adsorbate concentration, and solution pH. The dynamical data fit well with the pseudo-second-order kinetic model (R2>0.9968), which was indicated with the apparent activation energy of 27.634 kJ/mol. The Langmuir model agrees very well with the experimental data (R2>0.9995). On the basis of the Langmuir analysis, the maximum adsorption capacities were determined to be 58.48 mg/g at 30°C, 64.10 mg/g at 40°C and 69.93 mg/g at 50°C. The negative values of Gibbs free energy (-12.382 - -15.625 kJ/mol) indicate the spontaneous nature of the adsorption. It is suggested that the adsorption is likely to be at the state between physical and chemical adsorption.

Keywords: Activated Carbon, Adsorption, Adsorption Removal, Bamboo Charcoal, Batch, Behavior, Equilibrium, Isotherm, Kinetics, Methylene Blue, Reactive Dyes, Waste

? Jia, J.J., Peng, X.J., Luan, Z.K., Fan, B. and Wang, J. (2009), Removal of dyes from water by carbon nanotubes. *Fresenius Environmental Bulletin*, **18** (5), 615-618.

Full Text: 2009\Fre Env Bul18, 615.pdf

Abstract: The removal of one kind of dye, acid red B (ARB), by two kinds of carbon nanotubes (CNTs), single-walled CNTs (SWCNTs) and muti-walled CNTs (MWCNTs), were investigated. The results show that CNTs have high adsorption capacity for ARB, and the adsorption capacities for SWCNTs and MWCNTs are 585 and 85 mg/g, respectively. Kinetic study shows that the equilibrium time for adsorption of ARB to CNTs is 60 min, and the adsorption kinetic can be well described by the pseudo-second-order model. The adsorption increases with the increase in solution pH, and coexisting NaCl and CaCl2 enhance the removal.

Keywords: Acid Red B (ARB), Adsorption, Adsorption, Aqueous-Solution, Azo-Dye, Carbon Nanotubes (CNTS), Dyes, Kinetic-Models, Peat, Sorption, Wastewater

? Teker, M., Imamoglu, M. and Bocek, N. (2009), Adsorption of some textile dyes on activated carbon prepared from rice hulls. *Fresenius Environmental Bulletin*, **18** (5A), 709-714.

Full Text: 2009\Fre Env Bul18, 709.pdf

Abstract: The removal of textile dyes (CI acid blue 40 and CI basic blue 41) from aqueous solutions, by adsorption on activated carbon prepared from rice hulls (ACRH), have been investigated depending on pH, activated carbon dosage, contact time and initial concentration. The optimum values of pH, contact time and activated carbon dosage at 75 mg/L initial concentration and 100 mL volume of the dyes solutions have been determined as 2-9, 20 min and 0.25 for CI basic blue 41 and 2-6, 40 min. and 0.50 g for CI acid blue 40, respectively. Freundlich and Langmuir equations were applied for the adsorption of both dyes and their adsorption followed both isotherms. Adsorption capacity has been found as 130.87 and 53.55 mg/g for CI basic blue 41 and CI acid blue 40 from Langmuir isotherms, respectively.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Agricultural Solid-Waste, Apricot Stone, Aqueous, Aqueous-Solutions, Basic Dye, Batch Adsorption, Capacity, Carbon, CI Acid Blue 40, CI Basic Blue 41, Dye, Dyes, Freundlich, Hazelnut Shells, Heavy-Metal Ions, Isotherms, Langmuir, Langmuir Isotherms, Malachite Green, Methylene-Blue, pH, Reactive Dyes, Removal, Rice, Rice Hulls, Solutions, Textile Dyes

? Celekli, A., Yavuzatmaca, M., Beyazcicek, E. and Bozkurt, H. (2009), Effect of initial Reactive Red 120 concentrations on the biomass production and dye uptake by *Spirulina platensis*. *Fresenius Environmental Bulletin*, **18** (6), 994-998.

Full Text: 2009\Fre Env Bul18, 994.pdf

Abstract: Uptake of Reactive Red (RR) 120 and biomass production by Spirulina platensis in the Schlosser medium was followed at different initial dye concentrations (0, 15, 25, 50, 75 and 100 mg L-1) under 2.0 klux continuous illuminations. Initial dye concentrations and cultivation time significantly affected (p<0.01) biomass productions. It was observed that increment rate of biomass was especially achieved between 77 and 144 h at dye concentration range between 0.0-75 mg L-1. However, remarkable increment rate was not observed at 100 mg L-1 dye concentration. Change in initial dye concentrations from 15 to 100 mg L-1 strongly affected (p<0.01) amount of the dye uptake (q(t)). Increasing initial dye concentrations from 15 to 1100 mg L-1 increased (p<0.01) the equilibrium dye uptake (q(eq)) values from 8.08 to 18.31 mg g-1. Tukey HSD test revealed that there was no significant difference (p>0.05) among q(eq) values at initial dye concentrations of 25, 50, and 75 mg L-1. This cyanobacterium is able to withstand high concentrations of RR 120, which is to be important for waste-water treatment systems.

Keywords: Batch System, Biomass, Biosorption, Decolorization, Dye, Dye Uptake, Equilibrium, Fresh-Water, Reactive Red 120, Removal, Spirulina, Spirulina Platensis, Temperature, Treatment, Waste, Waste Water, Waste Water Treatment, Wastewater, Wastewater Treatment

? Liu, Z.R., Chen, X.S., Wei, P. and Wang, Y. (2009), Adsorption of cerium, dysprosium and Europium on peat. *Fresenius Environmental Bulletin*, **18** (7B), 1302-1306.

Full Text: [2009\Fre Env Bul18, 1302.pdf](2009/Fre%20Env%20Bul18,%201302.pdf)

Abstract: The adsorption of cerium, dysprosium, and europium on peat has been studied under static conditions. Experiments were carried out as a function of solution pH, initial concentration, contact time and temperature. The results showed that the pH has pronounced effect on the adsorption process. The pseudo-second-order kinetics model described the process of adsorption fairly well, and the Freundlich model best fitted the adsorption isotherm with regression coefficients close to 1. The adsorption processes were spontaneous and irreversible. The increase of temperature was not significant to the adsorption processes. Higher electro-negativity of rare earth elements (REEs) increased their adsorption affinity for peat, which were different due to their chemical properties.

Keywords: Adsorption, Adsorption Isotherm, Aqueous-Solution, Cerium, Chemical, Concentration, Copper, Europium, Freundlich, Freundlich Model, Function, Isotherm, Kinetic, Kinetics, Kinetics Model, Model, Nickel, Peat, pH, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Rare Earth, Rare Earth Elements, Regression, Removal, Solution, Sphagnum, Temperature, Waste-Water, Zinc

? Gao, J.F., Chen, R.N., Su, K., Zhang, Q. and Peng, Y.Z. (2009), Inactive aerobic granules as biosorbent for the removal of anionic azo dye acid red 14 from aqueous solution: Isotherms, kinetics and thermodynamics. *Fresenius Environmental Bulletin*, **18** (9A), 1681-1691.

Full Text: [2009\Fre Env Bul18, 1681.pdf](2009/Fre%20Env%20Bul18,%201681.pdf)

Abstract: The aim of this study was to determine the feasibility of the use of inactive aerobic granules as a biosorbent for removing Acid Red 14 (AR 14), an anionic azo dye, from aqueous solution. The effects of pH, biosorbent dosage, initial AR 14 concentration, NaCl concentration and temperature on the biosorption were investigated. The results show that initial pH would be the most important parameter affecting AR 14 biosorption and the optimal pH was 2.0. The biosorption capacity increased with an increase in initial dye concentration, but decreased with an increase in biosorbent dosage and NaCl concentration. The Langmuir and Redlich-Peterson isotherms fitted better to the equilibrium data than the Freundlich isotherm. Pseudo-first-order, pseudo-second-order and intraparticle diffusion models were applied to fit the experimental data, and the results show that the biosorption of AR 14 followed the pseudo-second-order kinetic model. The thermodynamic analysis indicates that the biosorption process was endothermic in nature and could occur spontaneously. The FTIR analysis revealed that chemical functional groups (e.g., amine, carboxyl, hydroxyl and either) on aerobic granules would be the active binding sites for biosorption of AR 14. These results show that inactive aerobic granules could be employed as a low-cost and alternative biosorbent in the wastewater treatment for the removal of anionic azo dye AR 14.

Keywords: Acid Red 14, Adsorption, Aerobic Granules, Alternative, Analysis, Aqueous Solution, Azo Dye, Binding, Binding Sites, Biomass, Biosorbent, Biosorption, Biosorption, Capacity, Chemical, Chitosan, Concentration, Data, Diffusion, Dye, Endothermic, Equilibrium, Experimental, Feasibility, Freundlich, Freundlich Isotherm, FTIR, FTIR Analysis, Functional Groups, Inactive Aerobic Granule, Intraparticle Diffusion, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Low Cost, Malachite Green, Mechanisms, Model, Models, NaCl, pH, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Redlich-Peterson, Removal, Sequencing Batch Reactor, Sludge, Solution, Temperature, Thermodynamic, Thermodynamics, Treatment, Waste-Water, Wastewater, Wastewater Treatment

? Ozer, A., Turabik, M. and Akkaya, G. (2009), Biosorption of acid dyes by brown alga dictyota dichotoma: Equilibrium, kinetic and thermodynamic studies. *Fresenius Environmental Bulletin*, **18** (10), 1798-1808.

Full Text: 2009\Fre Env Bul18, 1798.pdf

Abstract: In this study, the biosorption of Acid Blue 324 (AB324) and Acid Red 337 (AR337) dyes, known as the components of textile industry wastewaters, on Dictyota dichotoma was studied in a batch system. The optimum biosorption conditions were determined, and then the equilibrium for both dyes’ biosorption was modeled by using Langmuir and Freundlich isotherm models. The equilibrium studies showed that the biosorption equilibrium data of AB324 and AR337 fitted to both Langmuir and Freundlich isotherms in the concentration and temperature ranges studied. The monolayer coverage of AB324 and AR337 dyes were determined as 244 and 323 mg g-1 respectively. The intraparticle diffusion model was applied to the experimental data, and it was found that both surface adsorption and intraparticle diffusion contribute to the rate-limiting step. Analysis of biosorption data using a Boyd plot confirmed that external mass transfer was the main rate-limiting step in the biosorption process. It was observed that AB324 and AR337-D. dichotoma biosorption processes followed the pseudo-second order kinetics, and their activation energies were determined in the range of physical adsorption. Thermodynamic studies showed that the biosorption of AB324 and AR337 on D. dichotoma is exothermic and spontaneous in nature.

Keywords: Acid Dyes, Activated Carbon, Activation, Adsorption, Aqueous-Solutions, Batch, Batch System, Biosorption, Boyd Plot, Chlorella-Vulgaris, Concentration, Coverage, Data, Dictyota Dichotoma, Diffusion, Diffusion Model, Dyes, Equilibrium, Equilibrium Isotherm Models, Equilibrium Studies, Exothermic, Experimental, Fresh-Water Algae, Freundlich, Freundlich Isotherm, Intraparticle Diffusion, Intraparticle Diffusion Model, Isotherm, Isotherm Analyses, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir and Freundlich Isotherms, Malachite Green, Mass Transfer, Methylene-Blue, Model, Models, Monolayer, Physical, Pithophora sp., Process Design, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Rate Limiting Step, Rate-Limiting Step, *Rhizopus-arrhizus*, Surface, Temperature, Thermodynamic, Wastewaters

? Gulnaz, O. (2009), Adsorption of Ni(II) ions by waste-activated sludge and kinetic modeling. *Fresenius Environmental Bulletin*, **18** (10), 1839-1845.

Full Text: 2009\Fre Env Bul18, 1839.pdf

Abstract: Environmental pollution is an important global issue. In this study, adsorption of Ni(II) ions from aqueous solution was evaluated. Ni(II) was selected as an adsorbent due to its toxic properties, and optimum adsorption pH was determined to be 5. Langmuir adsorption isotherm model was used to determine the maximum adsorption capacities of activated sludge (95. 88 and 78 mg g-1 at 20, 35 and 50ºC, respectively. Initial metal concentrations and particle size of activated sludge affected its adsorption capacity, which increased with increasing, initial metal concentrations, but decreased with increasing particle size of adsorbent. Surface structure and functional groups of activated sludge biomass were determined by FT-IR and SEM analyses. Different functional groups have been identified for activated sludge. These functional groups can react with metal ions in aqueous solution. The pseudo second-order and intra-particle diffusion kinetic models were used to determine adsorption kinetics. Both kinetic models well described the adsorption of Ni(II).

Keywords: Activated Sludge, Activated Sludge Biomass, Adsorbent, Adsorption, Adsorption Capacities, Adsorption Capacity, Adsorption Isotherm, Adsorption Isotherm Model, Adsorption Kinetic, Adsorption Kinetics, Analyses, Aqueous Solution, Aqueous-Solution, Biomass, Cadmium, Capacity, Chitosan, Cr(VI), Cu(II), Diffusion, FT-IR, FTIR, Functional Groups, Heavy Metal, Heavy-Metals, Intra-Particle Diffusion, Intraparticle Diffusion, Ions, Isotherm, Isotherm Model, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Metal, Metal Ions, Model, Modeling, Models, Nickel, Nickel, Particle Size, pH, Physicochemical Environment, Pollution, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Removal, Second Order, Second-Order, SEM, Simultaneous Biosorption, Size, Sludge, Solution, Structure, Surface Structure, Toxic

? Rodríguez, A., García, J., Sotelo, J.L., Ovejero, G. and Mestanza, M. (2009), Removal of the pesticides diuron and carbofuran in aqueous solutions by activated carbon. *Fresenius Environmental Bulletin*, **18** (11), 2093-2101.

Full Text: [2009\Fre Env Bul18, 2093.pdf](2009/Fre%20Env%20Bul18,%202093.pdf)

Abstract: The adsorption of diuron and carbofuran from aqueous solutions onto granular activated carbon in a batch system for initial pesticide concentrations in the range of 10-40 mg.L-1, with different pHs (3.0, 5.0 and 7.0) and temperatures (20-40ºC), was studied. The adsorption equilibrium was described by the Langmuir and Freundlich models. Adsorption capacity is affected by the initial pesticide concentration, pH and temperature as the experimental results show. An increase in pH results in a significant increase of adsorption capacity. The adsorption kinetics for both pesticides have been experimentally established. Pseudo-first and pseudo-second order kinetic models were used to describe the experimental data, and the rate constants were evaluated.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetics, Aqueous Solutions, Batch, Batch Experiments, Batch System, Binary Adsorption, Capacity, Carbon, Cloth, Concentration, Data, Dyes, Equilibrium, Experimental, Freundlich, Granular Activated Carbon, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Models, Pesticide, Pesticides, pH, Phenolic-Compounds, Photocatalytic Degradation, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Rate Constants, Removal, Solutions, Temperature, Waste-Water, Wastewater

? Gulnaz, O. (2009), Adsorption of reactive dyes from aqueous solution by *Chara vulgaris*. *Fresenius Environmental Bulletin*, **18** (11A), 2243-2248.

Full Text: 2009\Fre Env Bul18, 2243.pdf

Abstract: In the present study, the adsorption of reactive dyes from aqueous solution by the aquatic macrophyte Chara vulgaris (C vulgaris) was evaluated. Effect of pH on dye adsorption was determined and the maximum adsorption capacities of C vulgaris were determined to be 11.3, 13.2, 16.2, 24.2, 32.6, 26.2, 35.2 and 31.4 mgg-1 for Reactive Red 147 (at pH 2). Reactive Brown 19 (at pH 3), Reactive Yellow 160 (at pH 2), Reactive Blue 220 (at pH 2), Reactive Orange 30 (at pH 3), Reactive Blue 29 (at pH 2), Reactive Blue 171 (at pH 3) and Reactive Black 5 (at pH 2), respectively. The intraparticle diffusion model and pseudo-second order kinetic models were found to be suitable to describe reactive dye adsorption rates. Obtained experimental findings revealed that that the adsorption was governed by more than one mechanism.

Keywords: Adsorption, Adsorption Capacities, Aqueous Solution, Azo-Dye, Biomass, Biosorption, Chara, Chara Vulgaris, Diffusion, Diffusion Model, Dried Activated-Sludge, Dye, Dye Adsorption, Dyes, Equilibrium, Experimental, Intraparticle Diffusion, Intraparticle Diffusion Model, Kinetic, Kinetic Modeling, Kinetic Models, Mechanism, Model, Models, Ozonation, Ph, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Rates, Reactive Black 5, Reactive Dye, Reactive Dyes, Removal, *Rhizopus-arrhizus*, Solution, Sorption, Textile Dye, Waste-Water

? Li, N., Mei, Z. and Chen, S.M. (2009), Removal of 4-chlorophenol from aqueous solutions by cyclodextrin polymer. *Fresenius Environmental Bulletin*, **18** (11A), 2249-2253.

Full Text: 2009\Fre Env Bul18, 2249.pdf

Abstract: The removal of 4-chlorophenol (4-CP) from aqueous solutions by beta-cyclodextrin polymer (beta-CDP) has been studied. The effects of contact time, pH, NaCl concentration and initial 4-CP concentration were studied to obtain the best experimental conditions. Results of batch experiments showed that beta-CDP exhibited high sorption capacities toward 4-CP (up to 24.4 mg/g when initial concentration of 4-CP solution was 140 mg/L at 283K). Adsorption kinetics followed a pseudo 2(nd) order (Ho and McKay) equation, suggesting that the rate-limiting step may be chemisorption. Freundlich isotherm gave the best correlation for the adsorption of 4-CP on beta-CDP. The regeneration capacity of beta-CDP was so strong that it could be used as a kind of recyclable adsorbent.

Keywords: 4-Chlorophenol, Adsorbent, Adsorption, Adsorption, Adsorption Kinetics, Aqueous Solutions, Aromatic-Compounds, Batch, Batch Experiments, Beta-Cyclodextrin, Capacity, Chemisorption, Concentration, Correlation, Cyclodextrin, Cyclodextrin Polymer, Degradation, Experimental, Experiments, Extraction, Freundlich, Freundlich Isotherm, Isotherm, Kinetics, NaCl, pH, Polymer, Rate Limiting Step, Rate-Limiting Step, Regeneration, Removal, Solution, Solutions, Sorption, Water

? Ugurlu, M. (2009), Adsorption studies and removal of nitrate from bleached kraft mill effluent by fly-ash and sepiolite. *Fresenius Environmental Bulletin*, **18** (12), 2328-2335.

Full Text: 2009\Fre Env Bul18, 2328.pdf

Abstract: This study aimed to remove nitrate from paper mill industry (4500 m3 h-1) wastewater, which is discharged to sea from a plant located in western Turkey. As adsorbents, fly-ash, raw 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 1h for both adsorbents. The kinetic data support a pseudo-second order model (0.999 >= r(2)) but show very poor fit for a pseudo-first order model. Intra-particle 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 three different temperatures. From experiments carried out at different pHs, it was observed that pH plays an important role in the nitrate adsorption process, both ionizing 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 nitrate and, in addition, adsorption of nitrate increases with decreasing particle size. The results of this study suggest that sepiolite and fly-ash, with low-cost and abundant availability, have a potential of being used as sorbent for removal of nitrate from Bleached Kraft Mills Effluent (BKME).

Keywords: Adsorbents, Adsorption, Adsorption Isotherms, Aqueous-Solution, Availability, Basic-Dyes, Bentonite, Bleached Kraft Mills Effluent, Bleached Kraft Mills Effluent (Bkme), Data, Diffusion, Equilibrium, Experiments, Fly Ash, Flyash, Isotherms, Kinetic, Kinetic Studies, Kinetics, Low Cost, Mechanism, Methylene-Blue, Model, Nitrate, Particle Size, Peat, pH, Plant, Pore Diffusion, Potential, Pseudo First Order, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Removal, Removal of Nitrate, Role, Sepiolite, Size, Sorbent, Sorption, Sorption Process, Support, Surfaces, Surfactant-Modified Sepiolite, Temperature, Turkey, Waste-Water, Wastewater

? Yalcin, E., Cavusoglu, K. and Sengul, U. (2010), Biosorption potential of *Phanerochaeta Chrysosporium* for different textile dyes with modified surface polarities. *Fresenius Environmental Bulletin*, **19** (1), 108-114.

Full Text: 2010\Fre Env Bul19, 108.pdf

Abstract: Decolorization of Basic Yellow 2, Basic Green 4 and Reactive Orange 113 in aqueous solutions by raw and treated Phanerochaeta chrysosporium was studied. Modification process was applied by autoclavation for 30 min at 121°C. The effects of system parameters, such as pH, initial dye concentration and biosorbent dose, were investigated. Maximum biosorption rates of Basic Yellow 2, Reactive Orange 113 and Basic Green 4 with raw biomass were obtained at pH 4.0 and maximum biosorption capacities of 23.1, 26.3 and 18.7 mg/g were recorded, respectively, but being, on autoclaved biomass, 1.34, 1.38 and 1.23 times higher than on raw counterparts, respectively. Biosorption of dyes on Phanerochaeta chrysosporium increased much quickly with increasing initial dye concentration from 10 to 200 mg L-1. The experimental results suggest that the Freundlich isotherm is the most appropriate model to predict the dye biosorption onto treated Phanerochaeta chrysosporium. Surface polarity of raw and treated Phanerochaeta chrysosporium was investigated by contact angle measurements. The measurements of the contact angle to water and diiodomethane on the samples were made by sessile drop method. The highest contact angles were obtained with water and, as expected, modification and biosorption process changed both the contact angles and polarity of samples.

Keywords: Adsorption, Algae, Aqueous Solutions, Aqueous-Solution, Biomass, Biosorbent, Biosorption, Chlorella-Vulgaris, Concentration, Contact Angle, Contact Angle Measurements, Dye, Dye Biosorption, Dyes, Equilibrium, Experimental, Freundlich, Freundlich Isotherm, Isotherm, L1, Mechanism, Model, Modification, Modified, pH, Phanerochaeta Chrysosporium, Polarity, Rates, Reactive Dyes, Removal, Solutions, Sorption, Water

? Eren, E., Caglar, B., Eren, B. and Tabak, A. (2010), Equilibrium and kinetic studies on the removal of basic dye using raw and thermal-activated fatsa bentonite. *Fresenius Environmental Bulletin*, **19** (5), 773-782.

Full Text: [2010\Fre Env Bul19, 773.pdf](2010/Fre%20Env%20Bul19,%20773.pdf)

Abstract: The adsorption behavior of crystal violet (CV+) from aqueous solution onto raw Fatsa (RFB) and thermal-activated Fatsa (TAFB) bentonite samples was investigated as a function of parameters, such as pH, temperature, initial CV+ concentration and contact time. X-ray diffraction (XRD) and differential thermal analysis (DTA) were used for structural and thermal characterization. The Langmuir and Freundlich adsorption models were applied to describe the equilibrium isotherms. The pseudo-first-order, pseudo-second-order kinetic and intra-particle diffusion models were used to describe the kinetic data.

Keywords: Adsorption, Adsorption Behavior, Adsorption Thermodynamics, Analysis, Aqueous Solution, Aqueous-Solution, Behavior, Bentonite, Characterization, Clays, Concentration, Congo-Red, Crystal Violet, Data, Diffusion, Dye, Dye Adsorption, Equilibrium, Equilibrium Isotherms, Fly-Ash, Freundlich, Function, Intra-Particle Diffusion, Intraparticle Diffusion, Isotherms, Kinetic, Kinetic Data, Langmuir, Models, Montmorillonite, Organic Cation, pH, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Removal, Silicate Minerals, Solution, Sorption, Temperature, Thermal Activation, Thermal Analysis, Water, X-Ray, X-Ray Diffraction, XRD

? Wang, G.H., Zhou, Y.M., Choi, X.J., Wang, X.G., Liu, J.S. and Deng, N.S. (2010), Adsorption behavior of azo dye acid Red R in aqueous solution onto beta-cyclodextrin-grafted chitosan. *Fresenius Environmental Bulletin*, **19** (5), 811-817.

Full Text: 2010\Fre Env Bul19, 811.pdf

Abstract: To improve the adsorption capacity of chitosan, a novel technique for preparation of beta-cyclodextrin-grafted chitosan (CD-CTS) was carried out by the reaction of beta-cyclodextrin with epoxy-activated chitosan under alkaline conditions. Adsorption of Acid Red R (ARR) in aqueous solution onto CD-CTS was investigated in a batch system. Adsorption isotherm, adsorption kinetics and adsorption thermodynamics of ARR onto CD-CTS were examined. The influence factors on ARR adsorption were also investigated and described in details, such as contact time, pH value and initial ARR concentration. Equilibrium data agreed very well with the Langmuir model. Kinetic studies showed that the adsorption followed a pseudo second-order kinetic model. Thermodynamic parameters showed the endothermic heat of adsorption and the feasibility of the process. Compared with chitosan (CTS), the adsorption capacity of CD-CTS for ARR was increased by 20.2 mg/g after adsorption equilibrium. Results showed that CD-CTS is a favorable adsorbent.

Keywords: Acid Red R (ARR), Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Isotherm, Adsorption Kinetics, Adsorption Thermodynamics, Aqueous Solution, Ash, Batch, Batch System, Beads, Beta-Cyclodextrin, Beta-Cyclodextrin-Grafted Chitosan (CD-CTS), Capacity, Chitosan, Complexes, Concentration, Ct, Data, Dye, Endothermic, Equilibrium, Feasibility, Heat of Adsorption, Isotherm, Kinetic, Kinetic Model, Kinetic Studies, Kinetics, Langmuir, Langmuir Model, Model, pH, pH Value, Photocatalytic Degradation, Preparation, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Reactive Dye, Removal, Second Order, Second-Order, Solution, Suspensions, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Value, Wastes

? Yao, Y.J., Xu, F.F., Zhu, Z.W., Xu, Z.X. and Chen, M. (2010), Adsorption of methyl violet onto multi-walled carbon nanotubes: Equilibrium, kinetics and modeling. *Fresenius Environmental Bulletin*, **19** (5), 854-861.

Full Text: 2010\Fre Env Bul19, 854.pdf

Abstract: Adsorption equilibrium and kinetics of methyl violet onto multi-walled carbon nano-tubes were studied in a batch system. Experiments were carried out as function of contact time, initial concentration, and temperature. Langmuir, Freundlich and Temkin isotherm models were applied to experimental equilibrium data of methyl violet adsorption depending on temperature. The data fitted well with the Langmuir isotherm. The maximum adsorption capacities were found to be 32.87, 46.10, 58.01, and 71.76 mg/g at 0, 25, 45, and 60ºC. The adsorption data were modeled using pseudo-first and second-order models. It was shown that the second-order kinetic equation could best describe the sorption kinetics. Thermodynamic parameters Δ*H*°, Δ*S*° and Δ*G*° have been calculated. Results suggested that methyl violet adsorption on multi-walled carbon nano-tubes is a spontaneous and endothermic process.

Keywords: Acid-Blue-193, Adsorbents, Adsorption, Adsorption Capacities, Adsorption Equilibrium, Aqueous-Solutions, Batch, Batch System, Blue, Carbon, Carbon Nanotubes, Concentration, Data, Endothermic, Equilibrium, Experimental, Fly-Ash, Freundlich, Function, Isotherm, Kinetic, Kinetic Equation, Kinetics, Langmuir, Langmuir Isotherm, Mechanism, Methyl Violet, Modeling, Models, Multiwalled Carbon Nanotubes, Nanotubes, Pseudo-First and, Removal, Second Order, Second-Order, Sepiolite, Sorption, Sorption Kinetics, Temkin Isotherm, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Thermodynamics, Water

? Canli, O. and Demirbas, E. (2010), Response surface methodology to optimize adsorption parameters for naphthalene removal in aqueous solutions by activated carbon. *Fresenius Environmental Bulletin*, **19** (5A), 945-955.

Full Text: [2010\Fre Env Bul19, 945.pdf](2010/Fre%20Env%20Bul19,%20945.pdf)

Abstract: The adsorption characteristics of naphthalene from aqueous solutions on coconut husk-activated carbon (AC) were evaluated. Batch adsorption studies were conducted to study the effects of various parameters, such as initial concentration, agitation time and adsorbent dosage, on naphthalene adsorption. The kinetic data were analyzed using pseudo first-order, pseudo second-order and intra-particle diffusion equations. The experimental data fitted very well the pseudo second-order kinetic model. The equilibrium data were analyzed by the Langmuir and Freundlich adsorption isotherm models. The adsorption isotherm data fitted well to Langmuir isotherm, and the monolayer adsorption capacity was found to be 15.60 mg/g at 20°C. In this study, the central composite face-centered experimental design matrix and response surface methodology (RSM) were applied to design the experiments and evaluate the interactive effects of the 3 most important operating variables, adsorbent dosage (1.0-3.0 g/L), agitation time (10.0-25.0 min) and initial naphthalene concentration (10.0-30.0 mg/L), on adsorption of naphthalene with AC. A total of 20 experimental runs were set, and the experimental data fitted to the empirical second-order polynomial model of a suitable degree for the maximum adsorption of naphthalene from aqueous solutions by AC. An initial concentration of 10 mg/L, adsorption time of 25 min and carbon dosage of 3 g/L were found to be optimal for the maximum removal of naphthalene (97.8%) from aqueous solutions. Analysis of variance of the quadratic model showed that the model was highly significant (R2 = 0.970, predicted R2 = 0.766 for q(t) as well as R2 = 0.989, predicted R2 = 0.917 for Re %).

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Isotherm, Biodegradation, Biosorption, Diffusion, Dye Removal, Equilibrium, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Lead, Naphthalene Adsorption, Optimization, Polycyclic Aromatic-Hydrocarbons, Removal, Response Surface Methodology, Sorption, Water

? Wan, C.L., Yang, X., Du, M.A., Xing, D.F., Yu, C.G. and Yang, Q.L. (2010), Desorption of oil in naturally polluted soil promoted by beta-cyclodextrin. *Fresenius Environmental Bulletin*, **19** (7), 1231-1237.

Full Text: 2010\Fre Env Bul19, 1231.PDF

Abstract: In this study, beta-cyclodextrin (beta-CD) was used to promote desorption of total petroleum hydrocarbons (TPH) in severely naturally oil-polluted soil close to oil-producing wells because it has a better solubilization of hydrophobic organics and nearly no toxic effect on soil. The experimental results indicated that different concentrations of beta-CD all had a solubilizing effect on contaminants. The desorption process had a good fit with a pseudo-second-order kinetics equation, and the R-2 values were all above 0.9. Since soil adsorbed beta-CD, the desorption of TPH was not enhanced with an increase in beta-CD concentration. Therefore, the best removal of 79% was obtained when TPH content was 78.61mg/g dry soil (DS), and beta-CD concentration was 1674 mg/L. GC-MS analysis was used to determine the component changes of TPH with the addition of beta-CD, and it was suggested that the removal of shorter chain hydrocarbons (C <20) was more efficient. Results of this study revealed that beta-CD can efficiently promote the desorption of TPH in soil and support field elution tests of oil-contaminated soil.

Keywords: 2,4,6-Trichlorophenol, Adsorption, Analysis, Aqueous-Solution, Beta-Cyclodextrin, Beta-Cyclodextrin (Beta-Cd), Changes, Concentration, Contaminants, Contaminated Soils, Desorption, Elution, Experimental, Field, GC-MS, Hydrophobic, Kinetics, Kinetics Equation, Naturally Oil-Polluted Soil, Organic-Compounds, Organics, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo Second Order Kinetics Equation, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Remediation, Removal, Soil, Solubilization, Sorption, Support, Surfactant, Total Petroleum Hydrocarbons (TPH), Toxic, Water, Wells

? Mao, Y.L., Yang, G.J., Liu, R.Q., Luo, S.T., Pan, J.M., Zhang, K., Zhang, Y.F., Xu, P.X. and Yan, Y.S. (2010), Biosorption of Cd(II) from aqueous solution by a novel extracellular biopolymer secreted from pseudomonas fluorescens C-2: Equilibrium and kinetic studies. *Fresenius Environmental Bulletin*, **19** (8A), 1599-1607.

Full Text: 2010\Fre Env Bul19, 1599.pdf

Abstract: The biosorption characteristics of Cd(II) from aqueous solution using the extracellular biopolymer (PFC02) secreted from Pseudomonas fluorescens C-2 were investigated as a function of pH, adsorbent dosage, contact time and initial concentration. The optimal solution pH for the removal of Cd(II) was determined to be 6.0. The Lagergren-first-order, pseudo-second-order kinetic and intraparticle diffusion models were used to test the kinetic data. The pseudo-second-order kinetic model was found to be well suited for the entire adsorption process of Cd(II) on PFC02. Langmuir and Freundlich models were applied to describe the biosorption isotherm of the Cd(II) ions by PFC02. Langmuir model fitted the equilibrium data better than Freundlich isotherm. The maximum adsorption capacity of PFC02 for Cd(II) according to Langmuir isotherm was 37.17 mg g-1 at pH 6.0 and 25º. FT-IR analysis of PFC02 showed the possible functional groups of PFC02. Responsible for the cadmium adsorption were hydroxyl, carboxyl and phosphate groups etc. SEM analysis demonstrated the microporous structure of the material while EDX analysis confirmed the adsorption of Cd(II) on PFC02. Furthermore, PFC02 could be resed five times with only about 9.15% regeneration loss, and the enrichment factor was 50.0. The developed method was successfully utilized for the removal of Cd(II) ions from environmental and industrial wastewater samples analyzed by inductively coupled plasma-atomic emission spectroscopy (ICP-AES).

Keywords: Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Analysis, Aqueous Solution, Biosorbent, Biosorption, Biosorption Characteristics, Biosorption Isotherm, Cadmium, Cadmium Adsorption, Capacity, Cd(II), Cd(II) Ions, Characteristics, Concentration, Cone Biomass, Cu(II), Data, Diffusion, EDX, Emission, Enrichment, Enrichment Factor, Environmental, Equilibrium, Extracellular Biopolymer, Freundlich, Freundlich Isotherm, FT-IR, FTIR, FTIR Analysis, Function, Functional Groups, Heavy-Metals, Industrial Wastewater, Intraparticle Diffusion, Ions, Isotherm, Kinetic, Kinetic Model, Langmuir, Langmuir Isotherm, Langmuir Model, Mechanism, Model, Models, pH, Phosphate, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Pseudomonas Fluorescens C-2, Regeneration, Removal, *Saccharomyces-cerevisiae*, SEM, Solution, Spectroscopy, Structure, Wastewater

? Liu, N., Xia, J., Dai, M.Z., Ni, T.H., He, C.Y., Zhang, X.X. and Lu, G.F. (2010), A preliminary non-carcinogenic risk assessment on metals in source water of the Yangtze River (lower reach). *Fresenius Environmental Bulletin*, **19** (8A), 1648-1654.

Full Text: 2010\Fre Env Bul19, 1648.pdf

Abstract: A preliminary non-carcinogenic risk assessment was performed on seven metals in source water of 22 tap water treatment plants (WTPs) along the lower reach of the Yangtze River, based on chemical analyses during 2007-2009. Among the metals, Fe was the pollutant with the highest concentration (114.2 mu g L-1) and Pb contributed the most (34.5%) to the hazard index (HI) of the 22 WTPs, followed by Cr (30.3%) and Cd (18.4%), suggesting that the three metals may be of serious health concerns for local residents. The level of each metal could meet the related criteria of China and USA, except for Pb. Both hazard quotients of individual metals and HI of total non-carcinogenic risk in each WTP were below 1.0, suggesting that these pollutants posed little hazard to local residents. Temporal and spatial comparisons showed that high His more frequently occurred in low water seasons, and Jiangpu WTP had the highest HI, followed by Jiangning and Taichang. This study may provide some baseline information for the authorities to regulate and control the discharge of the metals into the Yangtze River, and serve as a basis for comparison to other rivers in the world.

Keywords: Non-Carcinogenic Risk Assessment, Metallic Element, The Yangtze River, Source Water, Heavy-Metals, China, Sediments, Pollution, Contamination, Estuary, Health, Lakes, Lead, Dam

? He, J., Hong, S., Gan, F.X., Zhang, L. and Ho, Y.S. (2010), Equilibrium and thermodynamic parameters of adsorption of Methylene blue onto rectorite. *Fresenius Environmental Bulletin*, **19** (11A), 2651-2656.

Full Text: [2010\Fre Env Bul19, 2651.pdf](2010/Fre%20Env%20Bul19,%202651.pdf); [2010\Fre Env Bul-He.pdf](2010/Fre%20Env%20Bul-He.pdf)

The effect of temperature on the equilibrium adsorption of methylene blue dye from aqueous solution using rectorite was investigated. The equilibrium adsorption data were analyzed using three widely applied isotherms; Langmuir, Freundlich, and Redlich-Peterson isotherm. A non-linear method was used for comparing the best fitting of the isotherms. Best fits were found to be Redlich-Peterson isotherm. Thermodynamic parameters, such as ∆*G*°, ∆*H*°, and ∆*S*°, were calculated using adsorption equilibrium constant obtained from the Langmuir isotherm. Results suggested that the methylene blue adsorption on rectorite was a spontaneous and endothermic process.

Keywords: Sorption, Methylene Blue, Trial and Error Method Rectorite, Thermodynamic Parameters, Adsorbed Solution Theory, Aqueous-Solution, Sorption Isotherm, Activated Carbon, Basic Dye, Removal, Kinetics, Biosorption, Mechanism, Water

? Hassanein, T.F. and Koumanova, B. (2010), Decolourisation of waters using *Flax Shives* wasted from agriculture. *Fresenius Environmental Bulletin*, **19** (9), 1894-1905.

Full Text: [2010\Fre Env Bul19, 1894.pdf](2010/Fre%20Env%20Bul19,%201894.pdf)

Abstract: Laboratory investigations for the potential usage of agricultural waste Flax shives as an adsorbent for water decolourisation were conducted in a batch sorption system. Flax (Linum usitatisimum) is a plant grown in Egypt consisting of long fibres used for linen production, the seeds for oil production, and short fibres (shives, a main fiber flax by-product) are wasted during the processing of flax stocks. The adsorption equilibrium using model aqueous solutions of Basic Yellow 21 has been studied. The experimental data fit Tempkin equation better than those of Langmuir and Freundlich. The adsorption capacity of the Flax shives for Basic Yellow 21 was found to be 76.92 mg/g. The adsorption kinetics with respect to the initial dye concentration, adsorbent mass and stirring rate was investigated. The pseudo-first order, pseudo-second order and intra-particle diffusion models were used to describe the kinetic data. The rate constants were also evaluated. The adsorption kinetics fit very well the second-order kinetic model. Sorption mechanism onto Flax shives was also discussed. The results obtained during this study revealed the possible usage of Flax shives as an alternative, low-cost adsorbent for decolourisation of wastewaters.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetics, Agricultural Waste, Aqueous Solutions, Aqueous-Solutions, Basic Dye, Basic Yellow 21, Batch, Capacity, Data, Decolourisation, Diffusion, Dye, Equilibrium, Equilibrium, Fiber, Flax Shives, Freundlich, Intra Particle Diffusion, Intra-Particle Diffusion, Intraparticle Diffusion, Kinetic, Kinetic Model, Kinetics, Kinetics, Langmuir, Low Cost Adsorbent, Low-Cost Adsorbent, Mechanism, Methylene-Blue, Model, Models, Production, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Reactive Dye, Removal, Second-Order, Si, Sorption, Sorption Mechanism, System, Water

? Wang, G.H., Luo, J.A., Wang, X.G., Huang, L. and Deng, N.S. (2010), Removal of atrazine from contaminated soils with glycine-beta-cyclodextrin. *Fresenius Environmental Bulletin*, **19** (11), 2536-2542.

Full Text: 2010\Fre Env Bul19, 2536.pdf

Abstract: Beta-cyclodextrin (beta-CD) reacted with glycine in the presence of KOH and epichlorohydrin, and glycine-beta-cyclodextrin (G-beta-CD) with high water solubility was obtained and characterized with infrared spectra. The enhanced solubilization behavior of atrazine by G-beta-CD was studied, and the desorption behavior of atrazine from contaminated soil was also studied, and the influence factors on desorption of atrazine were investigated and described in details, such as pH initial concentration of G-beta-CD, temperature and CD type. The results showed that the solubilization capacity of G-beta-CD for atrazine is higher than that of beta-CD for atrazine, the G-beta-CD has obvious solubilization for atrazine, and the solubility of atrazine in 30g/L of G-beta-CD was enhanced about 4.2-fold. The removal efficiency of the G-beta-CD for atrazine in soil decreased with increasing pH. It was beneficial to the removal of atrazine in soil by raising temperature and initial concentration of G-beta-CD, and the removal efficiency of the G-beta-CD for atrazine in soil is higher than that of alpha- and beta-cyclodextrin for atrazine in soil. Desorption process of G-beta-CD for atrazine in soil followed the pseudo-second-order rate equation. The use of G-beta-CD as an extractant to enhance the removal of organic-contaminated soils appears as a promising remediation method.

Keywords: Adsorption, Atrazine, Behavior, Beta-Cyclodextrin, Capacity, Cd, Concentration, Desorption, Efficiency, Enhanced Solubilization, Glycine-Beta-Cyclodextrin, Koh, Organic-Compounds, Ph, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Remediation, Removal, Removal Efficiency, Soil, Soil Remediation, Soils, Solubility, Solubilization, Surfactants, Temperature, Water

? Ding, L., Deng, H.P., Han, X., Dong, L., Wang, P. and de Ridder, D. (2010), Adsorption characteristics of phosphate from aqueous solutions by sponge iron: Isotherm, kinetics, and thermodynamics studies. *Fresenius Environmental Bulletin*, **19** (11), 2548-2561.

Full Text: [2010\Fre Env Bul19, 2548.pdf](2010/Fre%20Env%20Bul19,%202548.pdf)

Abstract: In order to improve understanding of the mechanisms of phosphate removal by sponge iron, equilibrium and kinetic experiments were carried out in batch-scale. Five isotherm models, namely, Langmuir, Freundlich, Langmuir-Freundlich, Temkin and Dubinin-Radushkevich, are applied to lit the equilibrium data at 298 K. The results show both Freundlich and Langmuir-Freundlich can well describe the adsorption equilibrium. The kinetic data obtained in various conditions, such as varying particle size, initial pH of solution, initial phosphate concentration and temperature, are analyzed using the pseudo first-order, pseudo second-order, Elovich and Bangham’s models. The results represent the pseudo second-order model can give a good simulation for the process of phosphate adsorption on sponge iron, The thermodynamic parameters are evaluated. The results reflect the adsorption process of phosphate on sponge has different characteristics in different temperature ranges. The adsorption process is exothermic at low temperature conditions (288-298 K) whereas it is endothermic at high temperature stage (303-318 K). Besides, the negative ΔG(0), in the whole temperature range investigated, confirms the adsorption process is spontaneous. Therefore, the adsorption mechanisms of phosphate on sponge iron may be proposed that the physical sorption mainly takes place at low temperature but chemisorption may be dominant at high temperature.

Keywords: Activated Carbon, Adsorption, Adsorption Equilibrium, Adsorption Mechanisms, Blast-Furnace Slag, Characteristics, Chemisorption, Concentration, Data, Elovich, Endothermic, Equilibrium, Exothermic, Experiments, First Order, Fly-Ash, Freundlich, Iron, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir-Freundlich, Layered Double Hydroxides, Low Temperature, Mechanisms, Model, Models, Modified Diatomite, Particle Size, pH, Phosphate, Phosphate Adsorption, Phosphate Removal, Phosphorus Removal, Physical, Pseudo First Order, Pseudo First-Order, Pseudo Second Order, Pseudo Second-Order, Pseudo-First-Order, Pseudo-Second-Order, Red Mud, Removal, Second Order, Second-Order, Second-Order Model, Simulation, Size, Solution, Sorption, Sponge Iron, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Understanding, Waste-Water, Water Treatment Plants

? Duan, J.M., Wang, J.H., Zhang, B., Zhao, Y.F. and Liu, J.D. (2010), Cr(VI) adsorption on mercaptopropyl-functionalized halloysite nanotubes. *Fresenius Environmental Bulletin*, **19** (12), 2783-2787.

Full Text: 2010\Fre Env Bul19, 2783.pdf

Abstract: The natural halloysite nanotubes (HNTs) were modified with gamma-mercaptopropyltrimethoxy silane (KH-590) to form a new adsorbent. The as-prepared adsorbent was characterized by FTIR spectra, thermogravimetric analysis and transmission electron microscopy. The results showed that mercaptopropyl was grafted successfully onto the nanotube surface. While the modified HNTs were used as adsorbent for Cr(VI) removal from its aqueous solution, kinetic studies showed that the rate of adsorption of Cr(VI) obeyed a pseudo-second-order kinetic model. and the adsorption data of Cr(VI) on the modified HNTs are well consistent with Langmuir model, and the maximum adsorption capacity of 2.79 mg/g can be deduced from the model.

Keywords: Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Kinetic Studies, Analysis, Aqueous Solution, Aqueous-Solutions, Behavior, Bentonite, Capacity, Chromate, Chromium(VI), Cr(VI), Data, Electron Microscopy, FTIR, FTIR Spectra, Grafted, Halloysite Nanotubes, Kinetic, Kinetic Model, Kinetic Studies, Langmuir, Langmuir Model, Metal-Cations, Model, Modified, Nanotube, Nanotubes, Natural, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Rectorite, Removal, Solution, Surface, Transmission, Waste-Water

? Chou, W.L., Wang, C.T. and Huang, Y.H. (2010), Removal of gallium ions from aqueous solutions using tea waste by adsorption. *Fresenius Environmental Bulletin*, **19** (12), 2848-2856.

Full Text: 2010\Fre Env Bul19, 2848.pdf

Abstract: This study used batch adsorption techniques to evaluate the potential suitability of tea waste as a low-cost adsorbent for the removal of gallium ions from aqueous solution. In addition, we also investigated the effects of process parameters, such as the initial concentration of gallium ions, adsorbent dose and temperature on adsorption performance. The experimental data were fitted with several adsorption isotherm models to describe the adsorption process of gallium ions onto the tea waste. The predictions of the Freundlich isotherm model satisfactorily matched the experimental observations. In addition, the kinetic data obtained at different initial concentrations were analyzed using pseudo-first-order and pseudo-second-order kinetic models. A pseudo-second-order model provided a good fit to the experimental results with correlation coefficients greater than 0.99. Thermodynamic parameters, including the Gibbs free energy, enthalpy, and entropy, indicated that the gallium adsorption of aqueous solutions onto tea waste was feasible, spontaneous and endothermic in the temperature range of 288 K to 318K. This study indicated that tea waste could be used as an effective and environmentally friendly adsorbent for the treatment of gallium-containing aqueous solutions.

Keywords: Adsorbent, Adsorbent Dose, Adsorbents, Adsorption, Adsorption Isotherm, Adsorption Isotherm Models, Adsorption Performance, Aqueous Solution, Aqueous Solutions, Batch, Batch Adsorption, Biosorption, Cadmium, Complexation, Concentration, Correlation, Data, Endothermic, Energy, Enthalpy, Entropy, Environmentally Friendly, Equilibrium, Experimental, Extraction, Factory Waste, Freundlich, Freundlich Isotherm, Freundlich Isotherm Model, Gallium, Gallium Ions, Gibbs Free Energy, Ions, Isotherm, Isotherm Model, Isotherms, Kinetic, Kinetic Models, Kinetics, Low Cost, Low Cost Adsorbent, Low-Cost Adsorbent, Metal-Ions, Model, Models, Performance, Potential, Predictions, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Solution, Solutions, Sorption, Tea Waste, Techniques, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Treatment, Waste, Water

? Netzahuatl-Munoz, A.R., Aranda-Garcia, E., Cristiani-Urbina, M.D., Barragan-Huerta, B.E., Villegas-Garrido, T.L. and Cristiani-Urbina, E. (2010), Removal of hexavalent and total chromium from aqueous solutions by *Schinus molle* bark. *Fresenius Environmental Bulletin*, **19** (12), 2911-2918.

Full Text: [2010\Fre Env Bul19, 2911.pdf](2010/Fre%20Env%20Bul19,%202911.pdf)

Abstract: The main purpose of this work was to evaluate the potential of Schinus molle bark to remove hexavalent chromium [Cr(VI)] and total chromium from aqueous solutions. Results showed that Schinus molle bark removed Cr(VI) by two different mechanisms: chromium biosorption and bioreduction of Cr(VI) to Cr(III). The capacity for removing Cr(VI) and total chromium gradually increased as the contact time proceeded, reaching values of 97.56 and 73.18 mg g-1 respectively, after 120 h. The opposite behavior was observed concerning the volumetric rates of Cr(VI) and total chromium removal. The pseudo-second order model adequately described the kinetic process of chromium biosorption by Schinus molle bark, which suggests that this process chiefly occurs as a result of chemisorption.

Keywords: Adsorption, Aqueous Solutions, *Aspergillus-niger*, Bark, Behavior, Bioreduction, Biosorption, Biosorption, Capacity, Chemisorption, Chromium, Chromium Removal, Cone Biomass, Cr(III), Cr(VI), Cr(VI) Reduction, Dead Fungal Biomass, Heavy-Metals, Hexavalent Chromium, Hexavalent Chromium [Cr(VI)], Kinetic, Mechanism, Mechanisms, Model, *Pinus-sylvestris*, Potential, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Purpose, Rates, Removal, Schinus Molle Bark, Solutions, Sorption, Total Chromium, Work

? Karaoglu, M.H. and Ugurlu, M. (2010), Kinetic and equilibrium studies of Methylene blue biosorption by vineyard pruning waste. *Fresenius Environmental Bulletin*, **19** (12B), 3199-3208.

Full Text: 2010\Fre Env Bul19, 3199.pdf

Abstract: Adsorption studies were conducted to measure the removal of methylene blue (MB) from aqueous solution on vineyard pruning waste (VPW) under varying experimental conditions, such as different pH values, initial concentrations, adsorbent dosages, ionic strength and temperatures. The adsorption amount increased with increasing pH from 3.0 to 11.0, and it was seen that the increase in ionic strength resulted in a decrease of adsorption amount. VPW exhibited the highest MB uptake capacity of 46.082 mg g(-1) at 298 K and natural pH. Kinetic studies were fitted to the pseudo-second-order kinetic model (R-2: 0.999). But, the first order kinetic model (R-2 < 0.960) and intra-particle model (R-2 < 0.973) did not adequately fit to experimental values. The diffusion coefficient values calculated for MB were in the range of 3.48x10(-9) to 38.10x10(-9) cm(2)s(-1). The equilibrium adsorption data were interpreted using Langmuir and Freundlich models, and the adsorption of MB on VPW was better represented by the Langmuir (R-2 > 0.990) than Freundlich (R-2 < 0.844) equation. Thermodynamic parameters; standard enthalpy (ΔHº), standard entropy (ΔSº) and standard free energy (ΔGº) were found to be -7,638 kJmol(-1) and -280.83 jmol(-1)K(-1), and 78.86 kJmol(-1), respectively. VPW was characterized by FTIR and scanning electron microscopy (SEM).

Keywords: Adsorbents, Adsorption, Aqueous-Solutions, Biosorbent, Biosorption, Dye, Equilibrium, Fly-Ash, Freundlich, FTIR, Kaolinite, Kinetic, Kinetic Model, Kinetics, Langmuir, Leaf Powder, Methylene Blue, Mill Effluent, pH, Recovery, Removal, Sorption, Thermodynamic, Thermodynamic Parameters, Vineyard Pruning Waste

? Gao, J.F., Wang, J.H., Wu, X.L., Zhang, Q.A. and Peng, Y.Z. (2011), Protonated spent mushroom substrate as a potential low-cost biosorbent for the removal of reactive red 15 from aqueous solutions. *Fresenius Environmental Bulletin*, **20** (1), 51-62.

Full Text: [2011\Fre Env Bul20, 51.pdf](2011/Fre%20Env%20Bul20,%2051.pdf)

Abstract: This study aimed at determining the feasibility of using protonated spent mushroom substrate (PSMS), an abundant agricultural waste in China, as a low cost biosorbent for the removal of Reactive Red 15 (RR15) from aqueous solutions. Batch biosorption studies were conducted to evaluate the effects of pH value, biosorbent dosage, initial dye concentration and contact time on the removal of RR15. The results show that initial pH would be the most important parameter affecting RR15 biosorption, and the optimal pH was 1.2. Freundlich isotherm fitted well with the equilibium data. Kinetic studies show that biosorption of RR15 followed the pseudo-second-order kinetic model, both intraparticle diffusion and boundary layer diffusion might affect the biosorption rate. The thermodynamic analysis indicates that the biosorption process is spontaneous and exothermic. The FTIR analysis reveals that chemical functional groups (e.g., amine, phosphonate and others) on PSMS would be the active binding sites for biosorption of PSMS. These results show that PSMS could be employed is a low-cost and alternative biosorbent for the removal of RR15 from wastewater.

Keywords: Activated Carbon, Adsorption, Batch, Biomass, Biosorbent, Biosorption, Biosorption, Black-5, Corynebacterium-Glutamicum, Dye, Dye Removal, Equilibrium, Freundlich, Freundlich Isotherm, FTIR, Isotherm, Kinetic, Kinetic Model, Kinetics, Metal-Ions, pH, Protonated Spent Mushroom Substrate (PSMS), Reactive Red 15, Removal, Thermodynamic, Waste, Wastewater

? Demiral, İ. (2011), Methylene blue adsorption from aqueous solution using activated carbon prepared from olive bagasse. *Fresenius Environmental Bulletin*, **20** (1), 127-134.

Full Text: [2011\Fre Env Bul20, 127.pdf](2011/Fre%20Env%20Bul20,%20127.pdf)

Abstract: In this study, activated carbon was prepared from olive bagasse by chemical activation with phosphoric acid, and the prepared activated carbon was used to remove methylene blue from aqueous solutions. The surface area and total pore volume of chemically modified activated carbon were 036 m2/g and 0.598 cm3/g, respectively. The effects of various experimental parameters, such as pH, contact time, temperature and the amounts of adsorbent, were investigated in batch adsorption. 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 88.49 mg/g at 45ºC. The maximum adsorption capacities onto activated carbon at 25, 35 and 45ºC were found to be 71.43, 73.53, and 88.49 mg/g, respectively. The pseudo first-order, pseudo second-order and intra-particle diffusion kinetic models were used to describe the kinetic data, and the rate constants were evaluated as well. The experimental data fitted very well to pseudo second-order kinetic model. The thermodynamic parameters, such as ΔGº, ΔHº and ΔSº, were calculated to, stimate the nature of adsorption.

Keywords: Activated Carbon, Adsorption, Agricultural Waste, Basic Dye, Carbon, Chemical Activation, Equilibrium, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Malachite Green, Methylene Blue, Olive Bagasse, pH, Phosphoric Acid, Phosphoric-Acid Activation, Removal, Rice Husk, Shells, Thermodynamic, Thermodynamic Parameters

? Hosseini, S.J., Kokhdan, S.N., Ghaedi, A.M. and Moosavian, S.S. (2011), Comparison of multiwalled carbon nanotubes and activated carbon for efficient removal of methyl orange: Kinetic and thermodynamic investigation. *Fresenius Environmental Bulletin*, **20** (1A), 219-234.

Full Text: [2011\Fre Env Bul20, 219.pdf](2011/Fre%20Env%20Bul20,%20219.pdf)

Abstract: Commercially powdered activated carbon and multi-walled carbon nanotubes were used for the removal of methyl orange (MO) from aqueous solutions. The effects of solution pH, initial dye concentration, temperature and sorption time on MO removal were studied. The equilibrium sorption isotherms have been analyzed by Langmuir, Freundlich, Dubinin and Radushkevich (D-R), and Harkins-Jura (H-J) models, and Langmuir isotherms had the highest correlation coefficients. The apparent thermodynamic parameters were calculated, and the obtained values support the conclusion that MO molecules sorb by an entropy-driven, endothermic process. The kinetic of the sorption was analyzed using pseudo-first order, pseudo-second order, Elovich and intraparticle diffusion kinetic models. The data showed that the second-order equation was the more appropriate one, although intraparticle diffusion is the rate-limiting factor.

Keywords: Activated Carbon, Activated Carbon (AC), Adsorbents, Adsorption, Aqueous-Solutions, Azo Dyes, Basic Dye, Biosorption, Blue, Carbon, Carbon Nanotubes (CNTS), Dye, Equilibrium, Freundlich, Isotherm, Isotherms, Kinetic, Langmuir, Methyl Orange (MO), Multiwalled Carbon Nanotubes (MWCNTS), pH, Reduction, Removal, Sorption, Thermodynamic, Thermodynamic Parameters

? Tolga, D., Yunus, O., Selim, E. and Canan, A.B. (2011), Adsorption and kinetics of hazardous dye Rhodamine-B from aqueous solutions with activated carbon-based low-rank coal. *Fresenius Environmental Bulletin*, **20** (2), 303-309.

Full Text: 2011\Fre Env Bul20, 303.pdf

Abstract: Activated carbon was prepared from Tuncbilek-Kutahya (Turkey) lignite by chemical activation with KOH (impregnation ratio 1:2). Pore characteristics of the activated carbon, such as BET surface area, pore volume, size distribution and the diameter of pores, were determined. BET surface area was found to be 902 m2/g, and other characteristic values are as follows: S-micro:560 m2/g V-total: 0.50 cm3/g, V-micro: 0.30 cm3/g and average pore diameter: 2.21 nm (4 V/A by BET). The prepared activated carbon was used to adsorb Rhodamine-B (RB) from aqueous solution in a batch reactor. The adsorption isotherm of process could be best identified using the Langmuir model since it gave a better fit and had a higher R-2 value (0.9908) than Freundlich model. The kinetics of the adsorption of RB was tested using a pseudo-second order equation and an intraparticle diffusion model. Adsorption capacity was determined to be between 1.80-2.55 10-4 mol.g-1. It was found that the boundary layer thickness increased as the temperature increased (50.641 - 64.271).

Keywords: Activated Carbon, Activated Carbon (Ac), Adsorption, Adsorption Isotherm, Basic-Dyes, Congo Red, Dye, Fly-Ash, Freundlich, Isotherm, Kinetics, Langmuir, Low-Rank Coal, Malachite Green, Methylene-Blue, Removal, Rhodamine B, Rice-Husk, Solid-Waste, Sorption, Waste-Water

? Patel, H. and Vashi, R.T. (2011), Equilibrium, kinetic and thermodynamic studies on adsorption of reactive dyes onto activated guava leaf powder. *Fresenius Environmental Bulletin*, **20** (3), 561-568.

Full Text: [2011\Fre Env Bul20, 561.pdf](2011/Fre%20Env%20Bul20,%20561.pdf)

Abstract: Due to excessive consumption of reactive dyes, textile industrial wastewater having high quantity of these contaminants causes pollution problems. Adsorption is an efficient method for removal of dyes and other contaminations using natural adsorbent as well as activated carbon materials. In this investigation, the removal of Reactive Black 5 and Reactive Green 12 has performed by adsorption method using activated guava leaf powder from dye concentrations of 50 gm/L prepared in deionized water. The equilibrium isotherm and kinetic model were studied by altering different process parameters like adsorbent dosage and contact duration, respectively. Freundlich, Langmuir, Redlich-Peterson, Dubinin-Raduskevich and Temkin isotherms were utilized to describe the equilibrium characteristics of adsorption. The data were analyzed using kinetic models viz, pseudo first- and second-order, intra-particle and Elovich equations. Among all, Freundlich and pseudo isotherm second-order equation were best fitted with the resulting data. The thermodynamic parameters, such as free energy of adsorption (ΔGº) enthalpy change (ΔHº) and entropy change (ΔSº) were also determined and evaluated by varying temperature of a system.

Keywords: Activated Carbon, Activated Guava Leaf Powder, Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Equilibrium Isotherms, Aqueous-Solution, Basic Dye, Bentonite, Biosorption, Carbon, Characteristics, Chitosan, Consumption, Contaminants, Data, Duration, Dye, Dyes, Elovich, Energy, Enthalpy, Entropy, Equilibrium, Equilibrium Isotherm, First, Freundlich, Guava Leaf Powder, Industrial Wastewater, Investigation, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetic Models, Langmuir, Model, Models, Natural, Natural Adsorbent, Natural Adsorbents, Pollution, Process Design, Pseudo-Isotherm, Reactive Black 5, Reactive Dyes, Redlich-Peterson, Removal, Removal of Dyes, Sawdust, Second Order, Second-Order, Second-Order Equation, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamic Study, Waste-Water, Wastewater, Water

? Chou, W.L., Chen, L.S., Huang, Y.H. and Huang, C.Y. (2011), Effect of process parameters on the removal of indium ions from aqueous solutions by adsorption onto tea waste. *Fresenius Environmental Bulletin*, **20** (3), 603-610.

Full Text: 2011\Fre Env Bul20, 603.pdf

Abstract: This study used batch adsorption techniques to evaluate the potential suitability of tea waste as an environmentally friendly adsorbent for the removal of indium ions from aqueous solution. In addition, we also investigated the effects of process parameters, such as the solution pH, initial concentration of indium ions, adsorbent dose and temperature on adsorption performance. The experimental data were fitted with several adsorption isotherm models to describe the adsorption process of indium ions onto the tea waste. The predictions of the Freundlich isotherm model satisfactorily matched the experimental observations. In addition, the kinetic data obtained at different initial concentrations were analyzed using pseudo-first-order and pseudo-second-order kinetic models. A pseudo-second-order model provided a good fit to the experimental results with correlation coefficients greater than 0.99. Thermodynamic parameters, including the Gibbs free energy, enthalpy, and entropy, indicated that the indium adsorption of aqueous solutions onto tea waste was feasible, spontaneous and endothermic in the temperature range of 288 K to 318K. This study indicated that tea waste could be used as an effective and environmentally friendly adsorbent for the treatment of indium-containing aqueous solutions.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Isotherm, Copper, Equilibrium, Extraction, Factory Waste, Freundlich, Freundlich Isotherm, Gallium, Indium Ions, Isotherm, Isotherms, Kinetic, Kinetics, Kinetics, Metal-Ions, Part I, pH, Removal, Tea Waste, Thermodynamic, Thermodynamics, Waste

? Rahmani, A.R., Samadi, M.T. and Kamangar, F. (2011), Arsenic(III) biosorption from aqueous solution using holly, sallow and poplar sawdust: Kinetics and equilibrium studies. *Fresenius Environmental Bulletin*, **20** (3A), 720-726.

Full Text: [2011\Fre Env Bul20, 720.pdf](2011/Fre%20Env%20Bul20,%20720.pdf)

Abstract: In this research, sawdust was studied as an economic and low cost material for the removal of Arsenic(III) from aqueous solution. Three different kinds of sawdust, holly, sallow, and poplar were used in this study. Arsenic(III) synthetic samples were prepared using NaAsO2 in distilled water and effects of contact time and arsenic concentration were studied. The results showed that the holly sawdust with contact time of 150 min and 1000 mu g/L of initial arsenic concentration had the greatest efficiency (>94%). The kinetic of the adsorption process fitted well to the pseudo second order adsorption model and the equilibrium was achieved after 150 min. The results showed that biosorption was well described by Freundlich isotherm. The maximum biosorption capacity of the sawdust for Arsenic(III) was 20.625 mg/g. Based on high removal efficiency, availability and low cost, the use of sawdust as an effective adsorbent for the removal of Arsenic(III) from polluted water and wastewater is recommended.

Keywords: Adsorption, Aqueous Solution, Arsenic, Biosorption, Equilibrium, Freundlich, Freundlich Isotherm, Hexavalent Chromium, Isotherm, Kinetic, Kinetics, Removal, Sawdust, Wastewater, Zero-Valent Iron

? Li, N., Xiong, X.L., Shao, C.B. and Chen, S.M. (2011), Adsorption of *p*-chlorophenol from aqueous solution on modified corncob. *Fresenius Environmental Bulletin*, **20** (3A), 747-753.

Full Text: 2011\Fre Env Bul20, 747.pdf

Abstract: The objective of this study was to convert corncob into an adsorbent and further to investigate the potential of the adsorbent for the removal of *p*-chlorophenol (*p*-CP) from aqueous solution. The crushed corncob was treated with 1 M phosphoric acid (PA) in ultrasound irradiation (45 kHz) to enhance its nature adsorption capacity. The characteristics of the adsorbent were evaluated by Fourier transform-infrared spectroscopy (FT-IR) and specific surface area analysis. The effects of various experimental parameters (e.g. contact time, p-CP concentration, pH) were examined and optimal experimental conditions were determined. The adsorption capacity of p-CP on PTC was up to 45.5 mg/g when initial concentration of p-CP solution was 200 mg/L at 293K. Adsorption kinetics followed the Ho and McKay equation in the concentration range studied. Rate limiting step in the process of adsorption was pore or particle diffusion. Equilibrium isotherm data were satisfactorily fitted by the Freundlich equation. This study confirmed that corncob by impregnation with phosphoric acid solution using ultrasound irradiation was an excellent attractive adsorbent for removal of p-CP from aqueous solution.

Keywords: 4-Chlorophenol, Activated Carbon, Adsorption, Adsorption Kinetics, Aqueous Solution, Bottom Ash, Citric-Acid, Corncob, Equilibrium, Equilibrium Isotherm, Freundlich, FT-IR, FTIR, Industry, Ions, Isotherm, Kinetics, Modified, Optimization, *p*-chlorophenol, pH, Phosphoric Acid, Removal, Sorption, Ultrasonic Impregnation, Waste-Water

? Qiao, J.L., Dong, L. and Hu, Y.H. (2011), Removal of harmful algal blooms using activated fly ash-modified chitosan. *Fresenius Environmental Bulletin*, **20** (3A), 764-772.

Full Text: [2011\Fre Env Bul20, 764.pdf](2011/Fre%20Env%20Bul20,%20764.pdf)

Abstract: The performance of activated fly ash-modified chitosan (FA-MC) as a flocculant to remove Microcystis aeruginosa (M.A.) was assessed and its removal mechanism was studied. FA-MC was very effective at removing M.A.: 90% of algae were removed at the dosage of 0.5 ml/L (corresponding to 0.25 mg/L chitosan) within 1 h or at the dosage of 0.7 inn (0.35 mg/L chitosan) within 40 min. An increased FA-MC dosage slightly increased the formation of dense floccules. After treatment, algal photosynthesis decreased remarkably, and metal ion concentration in the supernatant was below the safe concentration. Flocculation kinetics were investigated using two models: The fitting equations based on the second-order reaction model were closer to the actual treatment efficiency, and the equations based on the exponential reaction revealed the ceiling of algal removal efficiency. The effect of algal extracellular organic matter (EOM) on the ability of FA-MC to remove M.A. also was analyzed: These substances had a priority to consumption of flocculant in initial period of flocculation and reduced the effective dosage and hindered the charge neutrality function of FA-MC. However, eliminating EOM can strengthen the adsorption bridging and entrappings-weeping functions of FA-MC in the late stage of flocculation.

Keywords: Adsorption, Algae, Algogenic Organic-Matter, Charge, China, Chitosan, Coagulation, Concentration, Consumption, Cyanobacterial Blooms, Efficiency, Flocculation, Flocculation, Function, Functions, Impact, Kinetics, Local Soils, Mechanism, Metal, Microcystis Aeruginosa, Model, Models, Organic, Organic Matter, Performance, Photosynthesis, Powder Fly Ash, Red Tide, Removal, Removal Efficiency, Removal Mechanism, Second Order, Second-Order, Taihu Lake, Treatment, Water

? Rıza, K.A., Tolga, D., İhsan, A., Salih, A. and Yunus, O. (2011), Equilibrium, kinetic and thermodynamic studies of nickel adsorption onto natural and modified kaolinites. *Fresenius Environmental Bulletin*, **20** (5), 1155-1166.

Full Text: [2011\Fre Env Bul20, 1155.pdf](2011/Fre%20Env%20Bul20,%201155.pdf)

Abstract: Availability of clay and its modified forms makes them a viable candidate for an alternative adsorbent. In this study, kaolinite and modified kaolinites were tested to determine their suitability for removal of Ni(II) ions from aqueous medium. Parameters, such as kaolinite type, concentration of Ni ions, time and temperature of interaction, were investigated to evaluate the adsorption capacity, kinetics, equilibrium and thermodynamic properties of Ni(II) adsorption. The adsorption isotherms followed Freundlich, Dubinin-Redushkevich (D-R) and Halsey isotherms but DR isotherm was chosen due to its applicability to all adsorption isotherms. The kinetics of adsorption mechanism of Ni(II) was tested using pseudo-first-order, pseudo-second-order and intraparticle diffusion models. The results showed that adsorption mechanism could be perfectly explained with pseudo-second order equation. The intraparticle diffusion of Ni(II) ions within the natural and modified kaolinite was more likely to be governed by the diffusion step. Adsorption mechanism for activated kaolinite was intra-particle diffusion model. Ni(II) adsorptions on activated kaolinites were exothermic and spontaneous in nature. The results of this study indicated that activated kaolinite can be employed for removal of Ni(II) from industrial wastewater.

Keywords: Acid, Activated Kaolinites, Adsorption, Adsorption Isotherms, Adsorption Mechanism, Aqueous-Solution, Cadmium, Copper, Diffusion, Equilibrium, Freundlich, Heavy-Metals, Industrial Wastewater, Isotherm, Isotherms, Kaolinite, Kinetic, Kinetics, Mechanism, Modified, Modified Clay, Nickel, Removal, Sorption, Temperature, Thermodynamic, Waste-Water, Wastewater, Zinc

? Zhu, Y.N., Liang, M.N., Lu, R.R., Zhang, H., Zhu, Z.Q., You, S.H., Liu, J. and Liu, H.L. (2011), Phosphorus removal from aqueous solution by the Fe(III)-impregnated sorbent prepared from sugarcane bagasse. *Fresenius Environmental Bulletin*, **20** (5A), 1288-1296.

Full Text: [2011\Fre Env Bul20, 1288.pdf](2011/Fre%20Env%20Bul20,%201288.pdf)

Abstract: An Fe(III)-impregnated sorbent was prepared from sugarcane bagasse and FeCl3 solution via carbonization/activation in a muffle furnace at 500 degrees C for 4h. The sorption removal of phosphorus from aqueous solution by the prepared sorbent was then studied in a batch system. The amount of phosphorus sorbed decreased from 1.03 to 0.19 mg/g with increasing amount of sorbent from 200 to 1200 mg in 50 mL test solution. With increasing initial phosphorus concentration from 2 to 50 mg/L, the amount of phosphorus sorbed increased from 0.33 to 2.67 mg/g at 25 degrees C, from 0.32 to 3.66 mg/g at 35 degrees C and from 0.32 to 3.85 mg/g at 45 degrees C, and the corresponding removal rate decreased from 98.89 to 32.06% at 25 degrees C, from 94.52 to 43.79% at 35 degrees C and from 96.01 to 46.35% at 45 degrees C. As the initial pH increased from 2 to 10, the sorption capacity increased from 0.55 to 0.77 mg/g and the corresponding removal rate increased from 71.23 to 92.89%. The pseudo-second-order kinetic model generated the best fit to the experimental data with regression coefficients R-2>0.9970.

Keywords: Activated Carbon, Adsorption, Agricultural Waste, Aqueous Solution, Bagasse, Basic Dye, Equilibrium, Fe(III)-Impregnation, Kinetic, Kinetic Model, Methylene-Blue, pH, Phosphorus, Raw, Removal, Sorbent, Sorption, Sorption Removal, Sugarcane Bagasse

? Zhang, L.Y., Ying, Z., Donghai, Y., Xi, B.D., Huo, S.L., Xiong, Y. and Xia, X.F. (2011), Effect of season, nitrogen loading rate and operational age on nitrogen removal rate of full-scale horizontal subsurface flow constructed wetlands: Three year’s study. *Fresenius Environmental Bulletin*, **20** (7A), 1749-1757.

Full Text: 2011\Fre Env Bul20, 1749.pdf

Abstract: In order to investigate the effect of season, nitrogen loading rate and operation age on nitrogen removal rate of horizontal subsurface flow (HSF) constructed wetlands treating wastewater, three full-scale constructed wetlands with same design parameters were operated continuously from 2006 until 2008 in parallel experiments. It was found that nitrogen removal rate of the studied CWs varied widely by season and it was in positive correlation with temperature. The highest nitrogen removal efficiency was found in summer and the lowest in early spring. Although the CWs have the same design parameters, nitrogen removal appeared significant different. The average nitrogen removal rate in DCW with high nitrogen loading rate was 1.63g NH(3)-N m(-2)d(-1) and 1.65g TN m(-2)d(-1), whereas lower nitrogen removal rate of 0.12g NH(3)-N m(-2)d(-1) and 0.16g TN m(-2)d was found in ECW with low carbon and low nitrogen influent loading rate. The capability of nitrogen removal rates increases gradually with the operation time of CWs and it was proven that there was a mature process for new CWs.

Keywords: Constructed Wetland, Nitrogen Loading Rate, Seasonal Effect, Operational Age, Nitrogen Removal Rate, Waste-Water, Performance, Systems, China, Denitrification, Nitrification, Efficiency, Oxidation, Climate

? Saltabaş, Ö., Teker, M. and Kurtulmuş, E. (2011), Recovery of silver from aqueous solution by water hyacinth (*Eichhornia crassipes*) roots. *Fresenius Environmental Bulletin*, **20** (9), 2232-2237.

Full Text: [2011\Fre Env Bul20, 2232.pdf](2011/Fre%20Env%20Bul20,%202232.pdf)

Abstract: Roots of water hyacinth, Eichhornia crassipes, were found to have biosorption capacity for silver. To evaluate the biosorption capacity and characteristics, the effect of solution pH, dose of biosorbent loading, contact time, temperature and initial silver concentration were investigated in a batch mode. The Langmuir and Freundlich adsorption models were used for mathematical description of the sorption equilibrium. Equilibrium data was fitted to the Langmuir model at 293 and 398 K and concentrations of 10-150 mg L-1. Based on the Langmuir isotherm plots, the maximum biosorption capacity value was calculated to be 141.54 mmol g-1 at 293 K. Various thermodynamic parameters, such as ΔGº, ΔHº, and ΔSº, were evaluated with results indicating that this system was an exothermic spontaneous reaction and kinetically suited to pseudo second order model.

Keywords: AAS, Activated Carbon, Adsorption, Aqueous Solution, Biosorbent, Biosorption, Equilibrium, Freundlich, Gold(III), Heavy-Metal Removal, Ions, Isotherm, Langmuir, Langmuir Isotherm, pH, Pseudo Second Order, Recovery, Resins, Rice Hulls, Silver, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Turkey, Waste-Water, Water, Water Hyacinth

? Ramazani, S., Ghaedi, M. and Mortazavi, K. (2011), Multiwalled carbon nanotubes as efficient adsorbent for the removal of Congo red. *Fresenius Environmental Bulletin*, **20** (10), 2514-2520.

Full Text: 2011\Fre Env Bul20, 2514.pdf

Abstract: The present investigation assesses the applicability of multiwalled carbon nanotubes (MWCNTs) for the removal of Congo red (CR) from wastewaters. The CR removal rates of MWCNTs have been determined by investigating factors, such as pH effect, initial CR concentration, amount of MWCNT, contact time, and temperature. Langmuir, Freundlich, Tempkin and Dubinin-Radushkevich isotherm models have been used to evaluate the phenomenal adsorption process. With the help of adsorption isotherm data, different thermodynamic parameters, such as free energy; enthalpy, and entropy, have been calculated. At optimum values of all variables, the removal process followed the pseudo-first-order and pseudo-second-order kinetic equations.

Keywords: Acid Dyes, Activated Carbon, Adsorption, Adsorptive Removal, Aqueous-Solution, Carbon, Congo Red, Equilibrium, Isotherm, Kinetic And Thermodynamics of Adsorption, Kinetics, Langmuir, Methylene-Blue, Multiwalled Carbon Nanotubes (MWCNTs), pH, Removal, Rice-Husk, Waste-Water

# Title: Fresenius Journal of Analytical Chemistry

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Harju, T., Laitinen, T., Parkka, M., Revitzer, H. and Yliruokanen, I. (1997), Critical evaluation of adsorption-based sampling of vaporized metalspecies in flue gases. *Fresenius Journal of Analytical Chemistry*, **357** (7), 801-805.

Full Text: [F\Fre J Ana Che357, 801.pdf](F/Fre%20J%20Ana%20Che357,%20801.pdf)

Abstract: Diffusion-controlled sampling techniques, i.e., diffusion screens and diffusion tubes (= denuders), can be used in the collection of several vaporized heavy metalspecies in clean gases (pure N2 atmosphere) at elevated temperatures. Collection efficiencies obtained for Hg, HgCl2, Cd, CdCl2 and ZnCl2 were over 90% using adsorption on Au-coated diffusion screens and Ag-coated denuders. However, the collection efficiencies for Znand PbCl2 were significantly lower. In field measurements performed at a hazardous waste incineration plant and in a power plant equipped with a circulating fluidized-bed boiler, collection efficiencies seemed to vary noticeably depending on the sampling conditions and metalspecies to be sampled. Best collection efficiencies were obtained for mercury with both Ag coated denuders and Au coated screens whereas cadmium showed significantly poorer results in field measurements than in the laboratory. Sampling of zinc and lead species seemed to be problematic in all cases. of the two sampling techniques, the denuder technique is more recommendable than the screen technique for sampling in relatively clean gases. However, neither of these techniques should be used in flue gases without further understanding of the collection mechanisms.

Keywords: Mercury, Gold, Removal, Denuder, System, Air

Sturm, B., Knauth, H.D., Theobald, N. and Wunsch, G. (1998), Hydrophobic organic micropollutants in samples of coastal waters: Efficiencies of solid-phase extraction in the presence of humic substances. *Fresenius Journal of Analytical Chemistry*, **361** (8), 803-810.

Full Text: [F\Fre J Ana Che361, 803.pdf](F/Fre%20J%20Ana%20Che361,%20803.pdf)

Abstract: Solid-phase extraction (SPE) has been used to enrich organic micropollutants (hydrophobic chlorinated and polycyclic aromatic hydrocarbons, CHC and PAH) from coastal water samples and to systematically study the influence of humic substances (HS) on SPE. A reversed phase (RP) system with high flow rates (rapid chromatography, RC) was used to show the basic adsorption principles and interaction processes which influence the enrichment of organic compounds. A model humic substance was found to hinder the enrichment of individual hydrophobic micropollutants (MP), depending on their octanol-water distribution coefficient P-OW. This effect was found to be lower with natural humic substances. For longer contact time between water sample and adsorption material, the pollutant/humic substance bonding proved to be reversible.

Keywords: Matter, Acid, Hydrocarbons

Marqués, M.J., Salvador, A., Morales-Rubio, A.E. and de la Guardia, M. (1998), Analytical methodologies for chromium speciation in solid matrices: A survey of literature. *Fresenius Journal of Analytical Chemistry*, **362** (3), 239-248.

Full Text: [F\Fre J Ana Che362, 239.pdf](F/Fre%20J%20Ana%20Che362,%20239.pdf)

Abstract: The analytical literature about chromium speciation in solid samples has been surveyed. From 451 articles published on the speciation of chromium from 1983 to 1997, the methodologies to do speciation in solids after sample pretreatment are discussed, through consideration of the types of samples and their dissolution, the analytical techniques employed for chromium measurement, and the figures of merit of the 86 papers reported in the Analytical Abstracts data base.

Keywords: Atomic-Absorption Spectrometry, Extraction-Spectrophotometric Determination, Hexavalent-Chromium, Emission-Spectrometry, Liquid-Chromatography, Molten Naphthalene, Soil Extracts, Trace Amounts, Separation, Metals

Liu, R.X., Zhang, B.W. and Tang, H.X. (1998), Dynamic adsorption and desorption of heavy metal ions on poly (acrylaminophosphonic-carboxyl-hydrazide) chelating fiber. *Fresenius Journal of Analytical Chemistry*, **362** (3), 258-262.

Full Text: [F\Fre J Ana Che362, 258.pdf](F/Fre%20J%20Ana%20Che362,%20258.pdf)

Abstract: The dynamic adsorption and desorption properties, including the effect of pH value and flow rate on the adsorption, eluent acidity and volume, eluting velocity and re-use, of Cu(II), Pb(II), Zn(II), Cd(II), Mn(II), Ni(II), Co(II) and Hg(II) ions on the column loaded with poly (acryiaminophosphonic-carboxyl-hydrazide) chelating fiber were investigated. The recovery of Mn(II), Co(II), Cd(II), Ni(II) and Zn(II) ions in the presence of Na, K, Ca and Mg ions was examined. The preconcentration of trace amounts of Mn(II), Co(II), Cd(II), Ni(II) and Zn(II) ions from model solution samples was carried out with satisfactory results. The amount of the metal ions detected after preconcentration and recovery by this technique was basically in agreement with the added amount. The method is rapid, precise and simple.

Keywords: Enrichment Separation, Solution Samples, Resin, Palladium, Gold, Preconcentration, Performance, Efficiency, Ruthenium, Mechanism

Sahayam, A.C. (1998), Determination of Cd, Cu, Pb and Sb in environmental samples by ICP-AES using polyaniline for separation. *Fresenius Journal of Analytical Chemistry*, **362** (3), 285-288.

Full Text: [F\Fre J Ana Che362, 285.pdf](F/Fre%20J%20Ana%20Che362,%20285.pdf)

Abstract: The anion exchange properties of polyaniline for Cd, Cu, Pb and Sb in potassium iodide were studied. The analytes converted into anionic complexes by KI (0.03-0.96 mol/L) in HCl were adsorbed on polyaniline and eluted with HNO3. The optimum conditions for adsorption and elution were determined. Quantitative recoveries were obtained for Cd, Cu and Pb, whereas, the recoveries for Sb were about 75%. This separation procedure was used with subsequent ICP-AES determination for Cd, Cu, and Pb in NIST-coal fly ash (1633b) and a sea plant with an R.S.D of 5% (n = 5).

Keywords: Neutron-Activation Analysis, Poly(Aniline), Resin

? Bağ, H., Lale, M. and Türker, A.R. (1999), Determination of Cu, Zn and Cd in water by FAAS after preconcentration by baker’s yeast (*Saccharomyces cerevisiae*) immobilized on sepiolite. *Fresenius Journal of Analytical Chemistry*, **363** (3), 224-230.

Full Text: [1999\Fre J Ana Che363, 224.pdf](1999/Fre%20J%20Ana%20Che363,%20224.pdf)

Abstract: By using the adsorbent *Saccharomyces cerevisine* immobilized on sepiolite an adsorption-elution method was developed for the preconcentration of Cu, Zn, and Cd followed by flame atomic absorption spectrometry (FAAS). Recoveries were 98.3±0.4% for Cu, 94.2±0.3% for Zn. and 99.04±0.04% for Cd at 95% confidence level obtained by the column method. The influence of sea water matrix elements on the separation of the trace elements was also assessed by using the column procedure. The breakthrough capacities were found to be 74 mu mol/g for copper, 128 mu mol/g for zinc and 97 mu mol/g for cadmium. After optimization the proposed method was applied to the trace metal determination in sea and river water.

Keywords: Algal Biomass, Atomic-Absorption Spectrometry, Baker’s Yeast, Cadmium, Elements, Emission-Spectrometry, Flame Atomic Absorption Spectrometry, Gold, Preconcentration, Reagent, *Saccharomyces Cerevisiae*, Separation, Speciation, Trace-Metal Preconcentration, Yeast

? Liang, P., Qin, Y.C., Hu, B., Li, C.X., Peng, T.Y. and Jiang, Z.C. (2000), Study of the adsorption behavior of heavy metal ions on nanometer-size titanium dioxide with ICP-AES. *Fresenius Journal of Analytical Chemistry*, **368** (6), 638-640.

Full Text: [F\Fre J Ana Che368, 638.pdf](F/Fre%20J%20Ana%20Che368,%20638.pdf)

Abstract: A new method using nanoparticle TiO2 as solidphase extractant coupled with ICP-AES was proposed for simultaneous determination of trace elements. The adsorption behavior of nanometer TiO2 towards Cu, Cr, Mn and Ni was investigated by ICP-AES, and the adsorption pH curves, adsorption isotherms and adsorption capacities were obtained. It was found that the adsorption rates of the metal ions studied were more than 90% in pH 8.0-9.0, and 2.0 mol L-1 HCl was sufficient for complete elution. Nanometer TiO2 possesses a significant capacity for the sorption of the metal ions studied which is higher than the capacity of silica, the commonly used extractant. The method has been applied to the analysis of some environmental samples with satisfactory results.

Keywords: Atomic-Absorption Spectrometry, Solid-Phase Extraction, Emission-Spectrometry, Trace-Elements, Electrothermal Atomization, Preconcentration, Separation; Particles, Sorption, Samples

# Title: Fresenius Zeitschrift fur Analytische Chemie

Full Journal Title: [Fresenius Zeitschrift fur Analytische Chemie](http://www.springerlink.com/(ttqeai550hawzgmprzwwlp45)/app/home/contribution.asp?referrer=parent&backto=issue,12,24;journal,334,1986;linkingpublicationresults,1:100417,1)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0016-1152

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Golimowski, J., Valenta, P. and Nürnberg, H.W. (1985), Trace determination of chromium in various water types by adsorption differential pulse voltammetry. *Fresenius Zeitschrift fur Analytische Chemie*, **322** (3), 315-322.

Full Text: Fre Zei Ana Che322, 315

Abstract: A new sensitive voltammetric method is presented for the determination of trace amounts of total chromium [Cr(III) and Cr(VI)] in natural waters. The method is based on the preconcentration of the Cr(III)-DTPA complex by adsorption at the HMDE at the potential of –1.0 V. The adsorbed complex is then reduced producing a response with a peak potential of –1.22 V and the peak height of the Cr(III) reduction is measured. The catalytic action of nitrate and bromate ions on the Cr(III)-DTPA reduction has been elucidated using cyclic voltammetry. The adsorption of chromium complexes at the HMDE was investigated using out-of-phase a. c. voltammetry and the potential range of adsorption was determined. Based on these investigations optimal conditions for the determination of the total chromium concentration in the range 20–2,000 ng/l have been established. The determination limit is 20 ng/l and the RSD is 5% for chromium concentrations ≥ 200 ng/l.

The usefulness and wide scope of this new voltammetric method for reliable and highly sensitive chromium analysis down to the natural ultra trace levels existing in various types of natural waters is demonstrated by determinations of the total dissolved chromium content in river, lake, sea and rain water.

? Hofmann, B. and Lieser, K.H. (1986), Sorption of gold, silver and mercury on cellulose. *Fresenius Zeitschrift fur Analytische Chemie*, **325** (7), 618-620.

Full Text: Fre Zei Ana Che325, 618

Abstract: Distribution coefficients of Au3+ on cellulose in 0.1 M NaNO3 are rather high in the pH range 2 to 8 (D ≈ 5·103 ml/g). They are appreciably lower in presence of NaCl or NaCN. Distribution coefficients of Ag+ are relatively low in 0.1 M NaNO3, appreciably higher in presence of NH4NO3 (D ≈ 103 ml/g in weakly acid media) and low in presence of NaCl, Na2S2O3 or NaCN. Distrubution coefficients of Hg2+ are low in 0.1 M NaNO3, and in presence of NaCN, but higher in 0.5 M NaCl (D ≈ 2·102 ml/ g). Responsible for the equilibria are mainly the special interactions between the predominant species with the sorbent under the given conditions, and less the complex equilibria in solution.

# Title: Freshwater Biology

Full Journal Title: [Freshwater Biology](http://www3.interscience.wiley.com/journal/117962093/home)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

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Subject Categories:

: Impact Factor

? Wishart, M.J. and Davies, B.R. (1998), The increasing divide between First and Third Worlds: Science, collaboration and conservation of Third World aquatic ecosystems. *Freshwater Biology*, **39** (3), 557-567.

Full Text: [1998\Fre Bio39, 557.pdf](1998/Fre%20Bio39,%20557.pdf)

Abstract: 1. Ten of the leading journals in the field of freshwater ecology were identified using the Science Citation Index’s Journal Citation Reports. These journals were surveyed to assess the levels and patterns of collaboration in research initiatives in regions of the Third World. Membership demographics of five professional societies in this field were also examined to elucidate distribution patterns of practitioners in the field.

2. In total, 8960 papers were surveyed, of which only forty were published in a language other than English. Senior authors came from 114 of the 130 different countries listed among authors’ addresses. Of these, forty-five were from Third World countries and sixty-nine from the First World. Five countries were responsible for 60.64% of the papers submitted; the United States = 25.65%; Canada = 11.55%; Australia = 10.15%; the United Kingdom = 6.73%; New Zealand = 6.56%. Multi-authored papers accounted for 73.05% of all papers.

3. Papers by authors from Third World countries accounted for only 10.93% of single-author papers and less than 10% of multi-authored papers. Collaboration was found in 73.05% of the papers surveyed, the vast majority of which (87.39%) was between authors from First World countries. Only 825 (9.21%) of the papers surveyed involved authors from different countries. Most of this collaboration (72.36%) was between authors from different First World countries.

4. Some 1038 papers surveyed included research undertaken in, or included authors from, Third World countries. The majority of these papers (69.08%) were submitted by authors from Third World countries, involving either multiple or single authorship. The third most common publication relating to research in Third World regions (17.4%) came from single-author papers in which the authors were from a First World country. Only four of the papers surveyed were submitted by single authors from Third World countries working in First World countries.

5. There is a disproportionate representation of taxonomic (20.3%) and marine (10.5%) papers from the Third World regions in comparison to both lentic (8.0%) and lotic (7.4%) papers.

6. Membership demographics of the professional societies surveyed continue to reflect the historical origins of freshwater ecology. More than 80% of members in the three largest societies examined are registered in Europe and North America, while membership of the remaining societies remains largely regional.

7. It is argued that present levels of collaboration and technology transfer from the First World to the Third World are inadequate and that, given the widening gulf in terms of personnel and resources, the future of essential research on inland waters in the Third World does not bode well unless in situ capacity building within Third World countries becomes a target of First World research and funding agencies.

Keywords: Scientific Collaboration

# Title: Frontiers in Computational Neuroscience

Full Journal Title: Frontiers in Computational Neuroscience

ISO Abbreviated Title:

JCR Abbreviated Title:

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Issues/Year:

Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

: Impact Factor

? Kreiman, G. and Maunsell, J.H.R. (2011), Nine criteria for a measure of scientific output. *Frontiers in Computational Neuroscience*, **5**, Article Number: 48.

Full Text: [2011\Fro Com Neu5, 48.pdf](2011/Fro%20Com%20Neu5,%2048.pdf)

Abstract: Scientific research produces new knowledge, technologies, and clinical treatments that can lead to enormous returns. Often, the path from basic research to new paradigms and direct impact on society takes time. Precise quantification of scientific output in the short-term is not an easy task but is critical for evaluating scientists, laboratories, departments, and institutions. While there have been attempts to quantifying scientific output, we argue that current methods are not ideal and suffer from solvable difficulties. Here we propose criteria that a metric should have to be considered a good index of scientific output. Specifically, we argue that such an index should be quantitative, based on robust data, rapidly updated and retrospective, presented with confidence intervals, normalized by number of contributors, career stage and discipline, impractical to manipulate, and focused on quality over quantity. Such an index should be validated through empirical testing. The purpose of quantitatively evaluating scientific output is not to replace careful, rigorous review by experts but rather to complement those efforts. Because it has the potential to greatly influence the efficiency of scientific research, we have a duty to reflect upon and implement novel and rigorous ways of evaluating scientific output. The criteria proposed here provide initial steps toward the systematic development and validation of a metric to evaluate scientific output.

Keywords: Author, Bibliometric Analysis, Citation, Confidence Intervals, Development, Efficiency, Impact, Impact Factors, Institutions, Journals Impact Factor, Knowledge, Lead, Paper, Peer Review, Productivity, Quality, Quality Versus Quantity, Quantitative, Research, Review, Scientific Output, Scientific Research, Systematic, USA, Validation

? Lee, C. (2012), Open peer review by a selected-papers network. *Frontiers in Computational Neuroscience*, **6**, Article Number: 1.

Full Text: [2012\Fro Com Neu6, 1.pdf](2012/Fro%20Com%20Neu6,%201.pdf)

Abstract: A selected-papers (SP) network is a network in which researchers who read, write, and review articles subscribe to each other based on common interests. Instead of reviewing a manuscript in secret for the Edit or of a journal, each reviewer simply publishesh is review (typically of a paper he wishes to recommend) to his SP network subscribers. Once the SP network reviewers complete their review decisions, the authors can invite any journal editor they want to consider these reviews and initial audience size, and make a publication decision. Since all impact assessment, reviews, and revisions are complete, this decision process should be short. I show how the SP network can provide a new way of measuring impact, catalyze the emergence of new subfields, and accelerate discovery in existing fields, by providing each reader a fine-grained filter for high-impact. I present a three phase plan for building a basic SP network, and making it an effective peer review platform that can be used by journals, conferences, users of repositories such as arXiv, and users of search engines such as PubMed. I show how the SP network can greatly improve review and dissemination of research articles in areas that are not well-supported by existing journals. Finally, I illustrate how the SP network concept can work well with existing publication services such as journals, conferences, arXiv, PubMed, and online citation management sites.

Keywords: Articles, Assessment, Author, Authors, Citation, Dissemination, Filter, Impact, Interdisciplinary Research, Journal, Journals, Management, Network, Open Evaluation, Open Peer Review, Peer Review, Peer-Review, Process, Publication, Publishing, Pubmed, Research, Researchers, Review, Reviewing, Scientometrics, Sites, Subscribers, USA

# Title: Frontiers in Education Fie’96 - 26th Annual Conference, Proceedings, Vols 1-3 - Technology-Based Re-Engineering Engineering Education

Full Journal Title: Frontiers in Education Fie’96 - 26th Annual Conference, Proceedings, Vols 1-3 - Technology-Based Re-Engineering Engineering Education

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Subject Categories:

: Impact Factor

? Li, Y.B., He, L.Q. and Xi, D.X. (1996), Towards 21st century China’s higher education of engineering. *Frontiers in Education Fie’96 - 26th Annual Conference, Proceedings, Vols 1-3 - Technology-Based Re-Engineering Engineering Education*: 354-355. edited by Iskander, M.F., Gonzalez, M.J., Engel, G.L., Rushforth, C.K., Yoder, M.A., Grow, R.W. and Durney, C.H.

Abstract: Southeast University is one of the oldest institutions of higher learning in China. In this paper, we summarize the experience China gained in the field of higher education of engineering, make an assessment of the current situation and set objectives for the reform and development of higher education. One is China’s 211 project, another is the reform and construction of teaching and curriculum design.

# Title: Frontiers of Environmental Science & Engineering in China

Full Journal Title: [Frontiers of Environmental Science & Engineering in China](http://www.springerlink.com/content/1673-7415)

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Publisher: Higher Education Press

Publisher Address: Shatanhou St 55, Beijing 100009, Peoples R China

Subject Categories:

Engineering, Environmental: Impact Factor

Environmental Sciences: Impact Factor

? Liu, J.Q., Zhang, Y.B., Chen, H., Zhao, Y.Z. and Quan, X. (2009), Contribution of black carbon to nonlinearity of sorption and desorption of acetochlor on sediment. *Frontiers of Environmental Science & Engineering in China*, **3** (1), 69-74.

Full Text: [2009\Fro Env Sci Eng Chi3, 69.pdf](2009/Fro%20Env%20Sci%20Eng%20Chi3,%2069.pdf)

Abstract: In order to investigate the contribution of various black carbon (BC) contents to nonlinearity of sorption and desorption isotherms for acetochlor on sediment, equilibrium sorption and desorption isotherms were determined to measure sorption and desorption of acetochlor in sediment amended with various amounts of BC. In this paper, two types of BC referred to as BC400 and BC500 were prepared at 400°C and 500°C, respectively. Higher preparation temperature facilitated the formation of micropores on BC to enhance its sorption capacity. Increase of the BC content obviously increased the sorption amount and reduced the desorption amount for acetochlor. When the BC500 contents in total organic carbon (TOC) increased from 0 to 60%, Freundlich sorption coefficient (K-f) increased from 4.07 to 35.74, and desorption hysteresis became gradually obvious. When the content of BC in TOC was lower than 23%, the sorption isotherm had a significant linear correlation (p = 0.05). In case of desorption, a significant nonlinear change could be observed when the content of BC was up to 13%. Increase of BC content in the sediment would result in shifting the sorption-desorption isotherms from linearity to nonlinearity, which indicated that contribution of BC to nonlinear adsorption fraction became gradually remarkable.

Keywords: Black Carbon (BC), Sorption, Desorption, Sediment, Organic Contaminants, Soils, Hysteresis, Matter, Model

? Deng, S.B., Shuai, D.M., Yu, Q., Huang, J. and Yu, G. (2009), Selective sorption of perfluorooctane sulfonate on molecularly imprinted polymer adsorbents. *Frontiers of Environmental Science & Engineering in China*, **3** (2), 171-177.

Full Text: [2009\Fro Env Sci Eng Chi3, 171.pdf](2009/Fro%20Env%20Sci%20Eng%20Chi3,%20171.pdf)

Abstract: Perfluorooctane sulfonate (PFOS), as a potential persistent organic pollutant, has been widely detected in water environments, and has become a great concern in recent years. PFOS is very stable and difficult to decompose using conventional techniques. Sorption may be an attractive method to remove it from water. In this study, the molecularly imprinted polymer (MIP) adsorbents were prepared through the polymerization of 4-vinylpyridine under different preparation conditions in order to remove perfluorooctane sulfonate (PFOS) from water. The MIP adsorbents using perfluorooctanoic acid (PFOA) as the template had good imprinting effects and could selectively remove PFOS from aqueous solution. The sorption behaviors including sorption kinetics, isotherms, and effect of pH, salt, and competitive anions were investigated. Experimental results showed that the sorption of PFOS on the MIP adsorbents was very fast, pH-dependent, and highly selective. The achieved fast sorption equilibrium within 1 h was attributed to the surface sorption on the. ne adsorbents. The sorption isotherms showed that the sorption selectivity of PFOS on the MIP adsorbents decreased at high PFOS concentrations, which may be due to the double-layer sorption and the formation of PFOS micelles on the sorbent surface. The sorption of PFOS on the MIP adsorbents was mainly dominated by the electrostatic interaction between the protonated vinylpyridine on the adsorbent surface and the anionic PFOS. The prepared MIP adsorbents can potentially be applied in water and wastewater treatment for selective removal of PFOS.

Keywords: Perfluorooctane Sulfonate (PFOS), Molecularly Imprinted Polymer (MIP) Adsorbents, Selective Sorption, Electrostatic Interaction, Perfluorinated Surfactants, Waste-Water, Perfluoroalkyl Surfactants, Reverse-Osmosis, Fate, Decomposition, Membranes, Sediments, Removal, Iron

? Chen, J.J., Wang, H. and Zhang, N. (2009), Modified landfill gas generation rate model of first-order kinetics and two-stage reaction. *Frontiers of Environmental Science & Engineering in China*, **3** (3), 313-319.

Full Text: [2009\Fro Env Sci Eng Chi, 3, 313.pdf](2009/Fro%20Env%20Sci%20Eng%20Chi,%203,%20313.pdf)

Abstract: This investigation was carried out to establish a new domestic landfill gas (LFG) generation rate model that takes into account the impact of leachate recirculation. The first-order kinetics and two-stage reaction (FKTSR) model of the LFG generation rate includes mechanisms of the nutrient balance for biochemical reaction in two main stages. In this study, the FKTSR model was modified by the introduction of the outflow function and the organic acid conversion coefficient in order to represent the in-situ condition of nutrient loss through leachate. Laboratory experiments were carried out to simulate the impact of leachate recirculation and verify the modified FKTSR model. The model calibration was then calculated by using the experimental data. The results suggested that the new model was in line with the experimental data. The main parameters of the modified FKTSR model, including the LFG production potential (L-0), the reaction rate constant in the first stage (K-1), and the reaction rate constant in the second stage (K-2) of 64.746 L, 0.202 d-1, and 0.338 d-1, respectively, were comparable to the old ones of 42.069 L, 0.231 d-1, and 0.231 d-1. The new model is better able to explain the mechanisms involved in LFG generation.

Keywords: Landfill Gas (LFG), Generation Rate Model, First-Order Kinetics, Two-Stage Reaction, Outflow Function, Methane Production, Bioreactor

? Lin, J.X. and Wang, L. (2009), Comparison between linear and non-linear forms of pseudo-first-order and pseudo-second-order adsorption kinetic models for the removal of methylene blue by activated carbon. *Frontiers of Environmental Science & Engineering in China*, **3** (3), 320-324.

Full Text: [2009\Fro Env Sci Eng Chi, 3, 320.pdf](2009/Fro%20Env%20Sci%20Eng%20Chi,%203,%20320.pdf)

Abstract: The best-fit equations of linear and non-linear forms of the two widely used kinetic models, namely pseudo-first-order and pseudo-second-order equations, were compared in this study. The experimental kinetics of methylene blue adsorption on activated carbon was used for this research. Both the correlation coefficient (R-2) and the normalized standard deviation Delta q(%) were employed as error analysis methods to determine the best-fitting equations. The results show that the non-linear forms of pseudo-first-order and pseudo-second-order models were more suitable than the linear forms for fitting the experimental data. The experimental kinetics may have been distorted by linearization of the linear kinetic equations, and thus, the non-linear forms of kinetic equations should be primarily used to obtain the adsorption parameters. In addition, the Delta q(%) method for error analysis may be better to determine the best-fitting model in this case.

Keywords: Activated Carbon, Adsorption, Adsorption Kinetic, Analysis, Aqueous-Solution, Basic Dye, Biosorbent, Carbon, Correlation, Correlation Coefficient, Data, Equilibrium, Error, Error Analysis, Experimental, Forms, Isotherm, Kinetic, Kinetic Equations, Kinetic Model, Kinetic Models, Kinetics, Linear Method, Methods, Methylene Blue, Methylene Blue Adsorption, Model, Models, Non-Linear Method, Pseudo First Order, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Research, Sorption, Standard

? Zhang, J.H., He, M.C., Lin, C.Y., Sun, K., Men, B. and Zhou, J.L. (2009), Phenanthrene sorption to environmental black carbon in sediments from the Song-Liao watershed (China). *Frontiers of Environmental Science & Engineering in China*, **3** (4), 434-442.

Full Text: [2009\Fro Env Sci Eng Chi, 3, 434.pdf](2009/Fro%20Env%20Sci%20Eng%20Chi,%203,%20434.pdf)

Abstract: Black carbon (BC) in ten contaminated sediments from the Song-Liao watershed, NE China, was isolated upon treatments using a combustion method at 375°C, and the isolates’ sorption isotherms for phenanthrene (Phen) were determined. All sorption isotherms were nonlinear and fitted well by the Freundlich model. A negative relation was found between Freundlich sorption nonlinearity parameter (n values) and BC/total organic carbon (TOC) content of the original sediments (r(2) = 0.687, p < 0.01), indicating the dominance of BC in Phen sorption nonlinearity. The BC isolates from this industrialized region had n values of 0.342 to 0.505 and logK(FOC) values of 6.02 to 6.42 (mu g.kg-1.OC-1)/(mu g.L-1)(n) for Phen. At a given C-e, the BC had higher K-oc value than the original sediments, revealing a higher sorption capacity for BC. BC was responsible for 50.0% to 87.3% of the total sorption at C-e=0.05 S-w, clearly indicating the dominance of BC particles in overall sorption of Phen by sediments.

Keywords: Phenanthrene, Sorption, Black Carbon, Sediment, Song-Liao Watershed, Polycyclic Aromatic-Hydrocarbons, Distributed Reactivity Model, Organic-Matter, Continental-Shelf, Activated Carbon, Aquatic Systems, Soils, Soot, Adsorption, Equilibrium

? Kannan, R.R., Rajasimman, M., Rajamohan, N. and Sivaprakash, B. (2010), Brown marine algae turbinaria conoides as biosorbent for Malachite green removal: Equilibrium and kinetic modeling. *Frontiers of Environmental Science & Engineering in China*, **4** (1), 116-122.

Full Text: [2010\Fro Env Sci Eng Chi4, 116.pdf](2010/Fro%20Env%20Sci%20Eng%20Chi4,%20116.pdf)

Abstract: In this study, the biosorption of Malachite green (MG) onto Turbinaria conoides, brown marine algae, was studied with respect to initial pH, temperature, initial dye concentration, and sorbent dosage. The optimum initial pH and temperature values for MG removal were found to be 8.0 and 30ºC, respectively. Sorbent dosage was found to strongly influence the removal of MG. Equilibrium studies were carried out to test the validity of the Langmuir (qmax = 66.6 mg/g and b = 0.526 mL mol/L) and the Freundlich (n = 1.826 and K = 3.751 mg/g) isotherms. The kinetic studies indicated the validity of the pseudo first-order and second-order equation.

Keywords: Adsorbent, Adsorption, Algae, Aqueous-Solutions, Biosorbent, Biosorption, Biosorption, Cationic Dye, Concentration, Dye, Equilibrium, Equilibrium Studies, First Order, Freundlich, Isotherm, Isotherms, Kinetic, Kinetic Modeling, Kinetic Studies, Langmuir, Malachite Green, Malachite Green (Mg), Mar, Marine Algae, Mg, Modeling, pH, Pseudo First Order, Pseudo First-Order, Pseudo-First-Order, Removal, Rice-Husk, Sawdust, Second Order, Second-Order, Second-Order Equation, Sorbent, Temperature, Turbinaria Conoides, Validity

? Li, Z.J., Deng, S.B., Zhang, X.Y., Zhou, W., Huang, J. and Yu, G. (2010), Removal of fluoride from water using titanium-based adsorbents. *Frontiers of Environmental Science & Engineering in China*, **4** (4), 414-420.

Full Text: [2010\Fro Env Sci Eng Chi4, 414.pdf](2010/Fro%20Env%20Sci%20Eng%20Chi4,%20414.pdf)

Abstract: Three adsorbents including TiO2, Ti-Ce, and Ti-La hybrid oxides were prepared to remove fluoride from aqueous solution. The Ti-Ce and Ti-La hybrid adsorbents obtained by the hydrolysis-precipitation method had much higher sorption capacity for fluoride than the TiO2 adsorbent prepared through hydrolysis. Rare earth (Ce and La) oxides and TiO2 exhibited a synergistic effect in the hybrid adsorbents for fluoride sorption. The sorption equilibrium of fluoride on the three adsorbents was achieved within 4 h, and the pseudo-second-order model described the sorption kinetics well. The sorption isotherms fitted the Langmuir model well, and the adsorption capacities of fluoride on the Ti-Ce and Ti-La adsorbents were about 9.6 and 15.1 mg center dot g(-1), respectively, at the equilibrium fluoride concentration of 1.0 mg center dot L-1, much higher than the 1.7 mg center dot g(-1) on the TiO2. The sorption capacities of fluoride on the three adsorbents decreased significantly when the solution pH increased from 3 to 9.5. The electrostatic interaction played an important role in fluoride removal by the three adsorbents, and Fourier transform infrared (FTIR) analysis indicated that the hydroxyl groups on the adsorbent surface were involved in fluoride adsorption.

Keywords: Adsorbent, Adsorbents, Adsorption, Analysis, Aqueous-Solutions, Arsenate, Capacity, Defluoridation, Drinking-Water, Equilibrium, Fluoride, Fluoride Adsorption, Fluoride Removal, Fourier Transform Infrared, FTIR, Hydrolysis, Infrared, Isotherms, Kinetics, Langmuir, Langmuir Model, Model, Oxide Adsorbent, pH, Polyvinyl-Alcohol, Pseudo Second Order, Pseudo-Second-Order, Removal, Sorption, Sorption Capacity, Sorption Isotherms, Sorption Kinetics, Sorption Mechanism, TiO2, Titanium Dioxide, Titanium-Based Adsorbent, Water

? Zhan, Y.H., Lin, J.W., Qiu, Y.L., Gao, N.Y. and Zhu, Z.L. (2011), Adsorption of humic acid from aqueous solution on bilayer hexadecyltrimethyl ammonium bromide-modified zeolite. *Frontiers of Environmental Science & Engineering in China*, **5** (1), 65-75.

Full Text: 2011\Fro Env Sci Eng Chi5, 65.pdf

Abstract: Surfactant-modified natural zeolites (SMNZ) with different coverage types were prepared by loading hexadecyltrimethyl ammonium bromide (HTAB) onto the surface of a natural zeolite. The adsorption behavior of humic acid (HA) on SMNZ was investigated. Results indicate that the adsorbent SMNZ exhibited a higher affinity toward HA than the natural zeolite. HA removal efficiency by SMNZ increased with HTAB loading. Coexisting Ca2+ in solution favored HA adsorption onto SMNZ. Adsorption capacity decreased with an increasing solution pH. For typical SMNZ with bilayer HTAB coverage, HA adsorption process is well described by a pseudo-second-order kinetic model. The experimental isotherm data fitted well with the Langmuir model. Calculated maximum HA adsorption capacities for SMNZ with bilayer HTAB coverage at pH 5.5 and 7.5 were 63 and 41 mg center dot g-1, respectively. E2/E3 (absorbance at 250 nm to that at 365 nm) and E4/E6 (absorbance at 465 nm to that at 665 nm) ratios of the residual HA in solution were lower than that of the original HA solution. This indicates that the HA fractions with high polar functional groups, low molecular weight (MW), and aromaticity had a stronger tendency for adsorption onto SMNZ with bilayer HTAB coverage. Results show that HTAB-modified natural zeolite is a promising adsorbent for removal of HA from aqueous solution.

Keywords: Adsorption, Bentonite, Bilayer Surfactant-Modified Zeolite, Carbon, Chitosan, Coagulation, Drinking-Water, Fulvic-Acid, Hexadecyltrimethyl Ammonium Bromide (HTAB), Humic Acid (HA), Kinetic Model, Langmuir, pH, Removal, Sorption, Substances, Surfactant-Modified Zeolite

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JCR Abbreviated Title: Fruits

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Publisher Address:

Subject Categories:

: Impact Factor

? Leiser, H., Aventurier, P., Fournier, D., Dosba, F. and Jeannequin, B. (2009), Tools for producing indicators from a bibliometric study of scientific production: The case of fruit and vegetable publications by the French National Institute for Agricultural Research (INRA). *Fruits*, **64** (5), 305-312.

Full Text: [2009\Fruits64, 305.pdf](2009/Fruits64,%20305.pdf)

Abstract: Introduction. The fruit and vegetable sector group of the French National Institute for Agricultural Research (INRA) undertook a bibliometric analysis of INRA scientific academic literature on fruits and vegetables for the 2000-2006 period. This study made it possible to produce quantitative and qualitative indicators that will shed light on the institute’s scientific position in relation to the fruit and vegetable sectors. Materials and methods. Different steps were taken to constitute and process a corpus of INRA researcher publication data. The citation corpus gathering bibliographic data was constituted using the Web of Science. The Sphinx data processing program allowed the constituted databases to be structured and manipulated. Results. After the data were cleaned, there was a total of 1463 articles published by INRA authors between 2000 and 2006; this constituted the “fruit and vegetable corpus” studied, which represented 8% of the total number of INRA publications during this period. The typology of fruits and vegetables studied at INRA, the INRA research centres involved, the main subjects addressed by INRA research divisions and the national and international partnerships of INRA authors were analysed. Conclusion. The analysis presented highlights the overall magnitude of research dedicated to fruits and vegetables at INRA. This research is undertaken in the principal research centres of horticulture and/or fruit regions, with a high level of involvement of Southeast centres of France. Partnerships with other French and foreign organisations are numerous. This assessment allows an understanding of the rapid evolution of research that has occurred over the past several years in the fruit and vegetable field, notably the growing involvement of nutrition and consumer sciences. The development of multi-disciplinary and integrated approaches must also be emphasised.

Keywords: Bibliometric Analysis, Bibliometrics, Data Collection, France, Fruits, Information Processing, Information Science, Public Research, Research, Research Institutions, Scientific Production, Vegetables

? Tatry, M.V., Fournier, D., Jeannequin, B. and Dosba, F. (2011), Tools for analyzing and mapping scholarly publications not indexed by the Web of Science: The case of fruit and vegetable publications by the French National Institute for Agricultural Research (INRA). *Fruits*, **66** (2), 131-140.

Full Text: [2011\Fruits66, 131.pdf](2011/Fruits66,%20131.pdf)

Abstract: Introduction. The fruit and vegetable sector group of the French National Institute for Agricultural Research (INRA) carried out a bibliometric analysis of INRA publications on fruits and vegetables produced between 2002 and 2006. While a previous study focused on scientific publications indexed by the Web of Science, this study took into account the remaining INRA publications, i.e., gray literature, technical papers and scientific papers not indexed by the Web of Science. Materials and methods. Different steps were taken to constitute and process a corpus of INRA researchers’ publication data. The citation corpus gathering bibliographic data was mainly constituted using the INRA institutional repository (ProdINRA). To ensure exhaustivity, a survey was carried out to collect INRA researchers’ publications. Due to the different types of publications involved, we had to develop an original method to constitute a complete database which could allow bibliometric analysis. The Sphinx Plus(2) Survey program was used to analyze publications and Pajek software was used to visualize networks. Results. A total of 2,224 publications were authored by INRA between 2002 and 2006. We analyzed the typology of fruits and vegetables studied at INRA, the INRA research centers and research divisions involved, the main research topics, and the national and international partners of INRA authors. Graphic visualizations allowed an attractive presentation of relationships between authors within and outside INRA. Conclusion. This study led to the mapping of INRA fruit and vegetable research publications. It confirmed that INRA plays an active role in the field of fruit and vegetable research. French research is carried out in the main INRA research centers located in horticultural and/or fruit regions, particularly in South-Eastern France. Despite the fact that the nature of these publications provides less opportunity for co-publication, this study highlights the relationships between INRA and French partners or foreign countries.

Keywords: Analysis, Authors, Bibliometric, Bibliometric Analysis, Bibliometrics, Citation, Data, Data Collection, Database, Field, France, Fruits, Gray Literature, Information Processing, Information Science, International, Literature, Mapping, Mar, Methods, Networks, Papers, Partnerships, Presentation, Publication, Publications, Research, Research Centers, Research Institutions, Role, Science, Scientific Production, Scientific Publications, Sector, Software, Survey, Vegetables, Web of Science

# Title: Fudan Xuebao (Yixuekexueban)

Full Journal Title: Fudan Xuebao (Yixuekexueban)

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Subject Categories:

: Impact Factor

? Shi, W., Wang, Y., Li, D., Li, S., Yan, M., Chen, B. and Cheng, N. (2004), Analysis of adverse drug reaction of NSAIDs reported in domestic medical journals within past 43 years. *Fudan Xuebao (Yixuekexueban)*, **31** (5), 527-531.

Abstract: Purpose To explore the rules and characteristics of adverse drug reaction(ADR) of nonsteroidal anti-inflammatory drugs(NSAIDs). Methods A metrological analysis was conducted on data of ADR of analgesics from Chinese medical journal reports in past 43 years. All reports were evaluated according to the ADR guidance of state food and drug administration bureau (SFDA). Results The amounts of ADR were not statistically different among groups of different sex and age strata. The ADRs commonly appeared within 3 months after taken medicine. Gastrointestinal reactions was the most frequent injured. Followed were skin injury, respiratory system injury, nervous system injury and hepototoxicity. The outcome of ADR was well, 98.3% patients could fay recover or improve, but also quite a number of patients left sequela or death. Conclusions NSAIDs are widely used in clinical therapy and their ADR is comprehensive. Some of them belong to over the counter (OTC) drugs, so it is important to enhance the clinical monitoring and improve educations in common population.

# Title: Fuel

Full Journal Title: [Fuel](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5726&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=4e523308cb5ed36d049b9168d774092c)

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? Eskenazy, G. (1967), Adsorption of gallium on peat and humic acids. *Fuel*, **46** (3), 187-192.

Full Text: Fuel46, 187.pdf

? Eskenazy, G. (1970), Adsorption of beryllium on peat and coals. *Fuel*, **49** (1), 61-68.

Full Text: [1960-80\Fuel49, 61.pdf](1960-80/Fuel49,%2061.pdf)

Abstract: The adsorption and desorption of ionic beryllium has been investigated for seven samples (mainly peat and coal macerals), as a function of solution concentration and pH. High pH favours the adsorption of beryllium, which appears to be chemisorbed on acidic groups.

? Eskenazy, G. (1972), Adsorption of titanium on peat and coals. *Fuel*, **51** (3), 221-223.

Full Text: [1960-80\Fuel51, 221.pdf](1960-80/Fuel51,%20221.pdf)

Abstract: Adsorption of titanium on humic acids, peat and coal macerals has been studied at pH values ranging from 0.8 to 2.0. Higher pH favours adsorption. An adsorption isotherm has been plotted. The rate of adsorption, the desorption, and the degree of adsorption in the presence of extraneous electrolytes have been examined. It is concluded that titanium is attached to peat and coals predominantly by an ion-exchange mechanism.

Harris, J.A. and Evans, D.G. (1975), Low-temperature oxidation of brown coal. 2. Elovich adsorption kinetics and porous materials. *Fuel*, **54** (4), 276-278.

Full Text: [F\Fuel54, 276.pdf](F/Fuel54,%20276.pdf)

Abstract: Computer-generated diffusion data are shown to be fitted closely for long periods by the Elovich equation. The graphs obtained also show the discontinuities that frequently occur in Elovich plots of experimental adsorption data. Use of the Elovich equation to interpret sorption on porous materials is therefore a dubious procedure.

Allen, S.J. (1987), Equilibrium adsorption isotherms for peat. *Fuel*, **66** (9), 1171-1175.

Full Text: [F\Fuel66, 1171.pdf](F/Fuel66,%201171.pdf)

Abstract: The adsorptive capacity of sphagnum moss peat for a range of adsorbates has been studied. The adsorption of acid dyes, basic dyes and zinc ions is reported. The adsorption isotherms are described by means of the Freundlich and Langmuir isotherms. High adsorptive capacities for some basic dyes were found.

Keywords: Peat, Adsorption Isotherms, Dyes

McKay, G., Allen, S.J. and McGookin, C. (1988), Montan wax extraction from Northern Ireland lignite. *Fuel*, **67** (12), 1703-1705.

Full Text: [F\Fuel67, 1703.pdf](F/Fuel67,%201703.pdf)

Abstract: In preliminary studies of the extraction of wax from Northern Ireland (Crumlin deposit) lignite, a number of extractions were carried out with three solvents for different contact times and two extraction temperatures. Exhaustive extraction with toluene shows that Crumlin lignite contains 16.6 wt% wax on a dry basis.

Keywords: Lignite, Solvent Extraction, Wax

Diamond, N.C., Magee, T.R.A. and McKay, G. (1990), The effect of temperature and particle size on the fluid bed drying of Northern Ireland lignite. *Fuel*, **69** (2), 189-193.

Full Text: [F\Fuel69, 189.pdf](F/Fuel69,%20189.pdf)

Abstract: This paper investigates fluid-bed drying of lignite, in a batch-wise laboratory scale dryer. Based on experimental data, the rate controlling step was partly characterized by determining the observed activation energy for the process. The effects of temperature and particle size on drying rate were studied to obtain information relating to optimum operating conditions. The boundary layer resistance was also shown to affect the rate of evaporation of moisture from the particulate solid.

Keywords: Lignite, Fluidized Beds, Particle Size

Jaroniec, M., Lu, X., Madey, R., Choma, J. and Klinik, J. (1990), Use of argon adsorption-isotherms for characterizing microporous activated carbons. *Fuel*, **69** (4), 516-518.

Full Text: [F\Fuel69, 516.pdf](F/Fuel69,%20516.pdf)

Abstract: Argon adsorption isotherms measured at 77.5 K on various microporous activated carbons were analysed to characterize the structural heterogeneities of these sorbents. It was found that the adsorption isotherms could be described by an isotherm equation associated with the gamma micropore-size distribution. Parameters of this distribution function characterized the structural heterogeneity of the microporous activated carbon studied. Comparison of these parameters for various activated carbons showed the dependence of the microporosity of these carbons on the kind of raw material used and on the preparation conditions.

Keywords: Carbon, Microporosity, Adsorption Isotherm

Aho, M.J., Hämäläinen, J.P. and Tummavuori, J.L. (1991), Catalytic effects of metals on peat combustion. *Fuel*, **70** (10), 1143-1145.

Full Text: [F\Fuel70, 1143.pdf](F/Fuel70,%201143.pdf)

Abstract: A comparison was made of the effects of Fe, Mn, Cr, Ni, Co, Zn, Al, Mg and Ca on slow and rapid peat combustion. The concentrations used were 100–200 mmol kg−1 and lower and higher concentrations were also used for Fe. The order of the catalytic effects of the metals on the combustion of peat particles (100–125 μm diameter) in an entrained flow reactor (particle heating rate 15000 ± 5000 °Cs−1) was: *Cr* > *Mn*, *Fe* > *Co*, *Ni* > *Ca* > *Zn*, *Mg* > *Al*. In the presence of 100 mmol kg−1 Cr, the combustion time decreased by 26% compared with acid-washed peat having a low content of inorganic material. The decrease was only 4% with Al. Thermogravimetric experiments predicted the order: Fe, *Cr* > *Mn*, *Ni* > *Co* > *Ca* > *Mg* > *Zn* > *Al* (heating rate 0.17 °Cs−1). Experiments with Fe in the entrained flow reactor showed an increase in concentration from 105 to 330 mmol kg−1 to have little effect, but a decrease from 105 to 42mmol kg−1 weakened the catalytic effect markedly. The thermogravimetric experiments predicted that concentrations between 105 mmol kg−1 and 330 mmol kg−1 would strengthen the catalytic effect. Catalytic effects of metals on combustion can be predicted on the basis of atomic structure. Transition metals are good catalysts and the best of them have five or six electrons in d orbitals, whereas metals with only one stable oxidation state and completely occupied or empty s, p and d orbitals are poor catalysts. These effects probably prevail in the combustion of coals. In the case of dried Finnish bog peat, the catalytic effects of cations are mainly due to Fe, because the contents of other strong catalysts (Cr and Mn) are very low relative to Fe; Ca causes some additional effects.

Keywords: Combustion, Peat, Metal Catalysts

Aho, M.J. and Pirkonen, P.M. (1993), Efficiency and environmental effects of peat dewatering by mechanical pressing. *Fuel*, **72** (2), 239-243.

Full Text: [F\Fuel72, 239.pdf](F/Fuel72,%20239.pdf)

Abstract: Changes in the chemical and physical structures of three types of Finnish peat (C, B and S) were studied during mechanical pressing. The effects of these changes on the efficiency of pressing and on the emissions into the pressing water were also investigated. Pressing was done at pH 3.2 by using Fennopol A3006 (a weakly anionic polyacrylamide-type chemical), a combination previously found inexpensive and effective. The dry solids load was 2.4 kg m−2. Clear differences were found in the water-binding capacities of the peats. The dry solids contents (wt%) of the peats after pressing for 500 s at 2.0 MPa by a computer-controlled piston press with two-way water outlet were: C, 37.0, B 33.5, S 27.5. A high content of humic substances and < 10 μm particles increased the water binding capacity of the peats. A large amount of Fennopol was bound to the peat during flocculation, making its recovery difficult. 20–40% of Ca and Mg were released from the peat owing to the low pH, and > 80% of Fe and Al remained in the peat. Most of the S of the H2SO4 used for pH lowering was found in the pressing water. Neutralization of the pressing water by Ca(OH)2 to pH 7 costs ~US$8 per 1000 m3. The chemical costs of pressing are ~US$5 per tonne of dried peat.

Keywords: Peat, Dewatering, Environmental Effects

Heschel, W. and Klose, E. (1995), On the suitability of agricultural by-products for the manufacture of granular activated carbon. *Fuel*, **74** (12), 1786-1791.

Full Text: [F\Fuel74, 1786.pdf](F/Fuel74,%201786.pdf)

Abstract: An investigation of several agricultural by-products revealed that their suitability for activated carbon production is not determined by general material-specific features (elemental composition) but by type-specific features. A coarse-cellular structure (as in wood), which is indicated by porosities of the raw materials higher than ~35% is disadvantageous. A specific change in the properties of cokes (porosity, density, hardness) is possible by varying the conditions of pyrolysis. By rapid heating in the pyrolysis step, for instance, macroporous residues are produced. Temperature and burnoff have the greatest influence on the quality of the activated carbon during the activation step. Of the investigated materials, coconut shells yield granular activated carbon of the highest quality. The following order of suitability of raw materials for activated carbon production was established: coconut shells> peach stones> plum stones> hazelnut shells> walnut shells> cherry stones.

Keywords: Activated Carbon, Agricultural By-Products, Pyrolysis

Bayat, O. (1998), Characterisation of Turkish fly ashes. *Fuel*, **77** (9-10), 1059-1066.

Full Text: [F\Fuel77, 1059.pdf](F/Fuel77,%201059.pdf)

Abstract: The mineralogical, morphological, physical and chemical properties of seven different fly ashes from eastern, central and western lignite and bituminous coal fields in Turkey are compared in this study. The mineral matter in the fly ashes, determined by means of X-ray diffraction, is dominated mainly by anhydrite, lime, quartz and hematite + ferrite spinel. The three low-calcium ashes-Soma, Seyitomer and Catalagzsmall i without dot-have the typical, relatively simple, crystalline phases Q, M, H and FS. The high-calcium fly ashes-Yenikoy and Afsin-Elbistan-have the most complex assemblage of crystalline phases. The much higher calcium concentrations in these samples result in the formation of lime (CaO), melilite [(Ca, Na)2(Mg, Al, Fe)(Si, Al)2O7] and merwinite (possible phase) [Ca3Mg(SiO4)2]. The presence of anhydrite in all samples indicates that the high activity of calcium not only promotes the formation of sulfates (Ah and SO) from calcite (in the presence of sulfur and oxygen), but also the dehydration of gypsum during and after combustion, which occurs at temperatures above 400-500°C. It is very important to understand the interaction of high-calcium fly ashes with water occurring in Portland cement (C3A, C2S), Ah, which hydrates to give gypsum and lime, with the latter hydrating to give the Ca(OH)2 solutions that promote pozzolonic reactions. It was clear from the microscopy data that some of the particles comprised predominantly irregularly formed, vesicular particles with some well-formed individual spheres in Catalagzsmall i without dot and Tuncbilek fly ashes. About 55-80 wt% was less than 45 μm in size for Yatagan, Soma, Yenikoy and Afsin-Elbistan fly ashes. Chemical analyses of the fly ashes showed that they were mainly composed of CaO, SiO2 and Al2O3. These fly ashes have a potential use in wastewater treatment since they can be easily obtained in large quantities at low price or even without price. The chemical and mineralogical compositions of the high-calcium Turkish fly ashes investigated make them a good binding agent and a possible substitute for slags, pozzolana and gypsum in the amelioration of clinker. Moreover, the fly ashes could be also used as a liming material to raise the low pH of acid soils in humid regions, such as around the Black Sea coast of Turkey.

Keywords: Coal, Fly Ash, Utilization, Cement, Leaching

Ayala, J., Blanco, F., García, P., Rodriguez, P. and Sancho, J. (1998), Asturian fly ash as a heavy metals removal material. *Fuel*, **77** (11), 1147-1154.

Full Text: [F\Fuel77, 1147.pdf](F/Fuel77,%201147.pdf)

Abstract: Coal-burning plants produce large amounts of fly ash as a residue. Fly ash has been used in construction, agriculture, metal recovery and water pollution control. This paper considers the efficiency of fly ash in the removal of heavy metals (Cd and Cu). The fly ash is shown to be an effective metal adsorbent for these two metals. Adsorption capacity increases as metal initial concentration decreases.

The removal phenomenon appears to be that the fly ash neutralises the metal solution due to its alkaline nature. The presence of high ionic strength, or appreciable quantities of Ca and Cl ions does not have a significant effect on the adsorption of these metals by fly ash.

Keywords: Fly Ash, Removal, Heavy Metal

Manz, O.E. (1999), Coal fly ash: A retrospective and future look. *Fuel*, **78** (2), 133-136.

Full Text: [F\Fuel78, 133.pdf](F/Fuel78,%20133.pdf)

Abstract: To accommodate the many new subbituminous fly ashes, the American Society for Testing and Materials (ASTM) established two classes of fly ash, Class F from bituminous coal and Class C from subbituminous and lignite coal. However, the wide variability of the Class C ashes from location to location led to extensive X-ray diffraction studies, with the conclusion that the mineralogy was more important than the chemical analysis and that the classification by type of coal was erroneous. A need exists to produce a performance-oriented standard rather than a prescriptive one. Recently, the installation of NO*x* burners has increased the carbon content of fly ash and, consequently, the instability of entrained air in concrete. This paper presents a retrospective and future look on the use of fly ash for concrete production in the United States and makes suggestions for future research.

Keywords: Fly Ash, Concrete, Mineralogy

Héquet, V., Ricou, P., Lecuyer, I. and Le Cloirec, P. (2001), Removal of Cu2+ and Zn2+ in aqueous solutions by sorption onto mixed fly ash. *Fuel*, **80** (6), 851-856.

Full Text: [F\Fuel80, 851.pdf](F/Fuel80,%20851.pdf)

Abstract: Disposal of a growing amount of fly ash creates environmental problems due to the leachability of their heavy metal content. However, fly ash is shown to be efficient in the removal of heavy metallic ions in the aqueous phase, for example, in the polluted wastewater resulting from desulfurization treatment in power plants. The objectives of this work were to study the removal of Cu2+ and Zn2+ in water by sorption onto fly ash and fly ash mixture. The stability of the resulting cake was also approached in terms of leaching capability. Experimental design methodology was used in order to identify influential parameters and to evaluate their interactions. Temperature, fly ash to ion concentration ratio, and ash quality were particularly studied. Different ashes and a fly ash mixture were investigated. They each have alkaline reaction with water to a different extent, and this allows the control of the pH solution without lime addition. Final metal ion concentration in solution, sorption capacity and ion leaching were determined. The results are discussed in order to get the optimal operating parameters in terms of ion control to develop industrial techniques to remove and stabilize heavy metal ions present in wastewater. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Fly Ash, Sorption, Metallic Ions, Water Treatment, Heavy Metal

? Lakatos, J., Brown, S.D. and Snape, C.E. (2002), Coals as sorbents for the removal and reduction of hexavalent chromium from aqueous waste streams. *Fuel*, **81** (18), 691-698.

Full Text: [2002\Fuel81, 691.pdf](2002/Fuel81,%20691.pdf)

Abstract: The aim of this study is to demonstrate the potential of coals as a low-cost reactive barrier material for environmental protection applications, with the ability to prevent leaching of toxic Cr(VI) and other transition metals. Depending upon the type of ion and the surface functionalities, the uptake can involve ion sorption, ion exchange, chelation and redox mechanisms with the surface functionalities being considered as partners in electron transfer processes. The capacity for Cr(VI) uptake of low rank coals and oxidized bituminous coals has been found to lie within the range 0.2-0.6 mM g-1. Air oxidation of bituminous coals can increase their Cr(VI) removal capacities. The effect of air oxidation of coals on uptake capacity was more pronounced for Cr(VI) than Cr(III), but less than for Hg(II) and the other ions (Ca2+, Ba2+, Zn2+, Cd2+) investigated. As previously found for Hg(II), redox mechanisms play an important role in Cr(VI) uptake, with sorption of the resultant Cr(III) being aided by the functionalities arising from oxidation of the coal surface. In acidic media, much of the resultant Cr(III) is exchanged back into solution by hydrogen ions, but some of the sorbed chromium is irreversibly bound to the coal. The reduction of Cr(VI) alone is often considered a satisfactory solution in view of Cr(III) being essentially non-toxic. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Coal, Chromium Removal, Redox Capacity, Water Purification, Humic Acids, Cr(VI) Reduction, Heavy-Metals, Adsorption, Temperature, Substances, Chromate, Behavior, Cations, Fe(III)

? Tseng, H.H., Wey, M.Y., Chen, J.C. and Lu, C.Y. (2002), The adsorption of PAHs, BTEX, and heavy metals on surfactant-modified desulfurization sorbents in a dry scrubber. *Fuel*, **81** (18), 2407-2416.

Full Text: [2002\Fuel81, 2407.pdf](2002/Fuel81,%202407.pdf)

Abstract: The injection of dry Ca-based sorbents for removing acid gases had been investigated previously. However, the utilization of Ca-based sorbents for adsorbing other air pollutants was rarely examined. The objective of this study was to investigate the reduction of organic compounds polycyclic aromatic hydrocarbons (PAHs) and benzene, toluene, ethylbenzene, and xylene (BTEX) and heavy metals by using the desulfurization sorbents in a dry scrubber integrated with a fabric filter. Four surfactants, calcium lignosulfonate, sodium lignosulfonate, alkyl naphthalene sodium sulfonate and beta-naphthalene sodium sulfonate condensates, were used as additives to modify the surface characteristics of desulfurization sorbent calcium hydroxide (Ca(OH)(2)). Modifying the desulfurization sorbents with surfactants showed different effects on removal of PAHs, BTEX, and heavy metals, and exploited the potential of Ca-based sorbents for adsorbing air pollutants other than SO2. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Acid Gases, Additives, Adsorption, Air, Air Pollutants, Aromatic, Aromatic Hydrocarbons, Benzene, Btex, Calcium, Desulfurization Sorbents, Ethylbenzene, Fabric, Gases, Heavy Metal, Heavy Metals, Hydrocarbons, Injection, Metals, Organic, Organic Compounds, Pahs, Pollutants, Polycyclic Aromatic Hydrocarbons, Reduction, SO2, Sodium, Surface, Surface Characteristics, Surfactant, Surfactants, Toluene, Utilization

Shawabkeh, R., Al-Harahsheh, A., Hami, M. and Khlaifat, A. (2004), Conversion of oil shale ash into zeolite for cadmium and lead removal from wastewater. *Fuel*, **83** (7-8), 981-985.

Full Text: [F\Fuel83, 981.pdf](F/Fuel83,%20981.pdf)

Abstract: A by-product fly ash from oil shale processing was converted into zeolite by alkali hydrothermal activation using sodium hydroxide. The activation was performed at different activation temperatures using 8 M sodium hydroxide. The obtained cation exchange capacity (CEC) showed that the best condition for synthesis of zeolite performed in a closed reactor at 160°C for 24 h. Powder patterns of X-ray diffraction analysis have shown that zeolite of type Na-PI was successfully synthesized at 29.5, 32.2 and 34.4°. The produced zeolite was used as an ion exchanger for the treatment of wastewater for metal ions. Lead and cadmium were chosen as target metal ions. The adsorption capacity was estimated to be 70.58 mg lead/g-zeolite and 95.6 mg cadmium/g-zeolite when the initial concentration for both ions was 100 mg/l. The results were correlated using Redlich-Peterson and Sips models. For cadmium the best fit was obtained with the Sips model while, for lead the Sips models fits the experimental data adequately. Based on such results, it is concluded that the treated ash may possess strong potentials for zeolite production used in wastewater treatment. (C) 2003 Elsevier Ltd. All fights reserved.

Keywords: Oil Shale, Ash, Zeolite, Cadmium and Lead Removal, Fly-Ash, Metal-Ions, Adsorption, Sorption, Equilibrium, Nickel

? Roldan, P.S., Alcantara, I.L., Padilha, C.C.F. and Padilha, P.M. (2005), Determination of copper, iron, nickel and zinc in gasoline by FAAS after sorption and preconcentration on silica modified with 2-aminotiazole groups. *Fuel*, **84** (2-3), 305-309.

Full Text: [2005\Fuel84, 305.pdf](2005/Fuel84,%20305.pdf)

Abstract: Silica gel chemically modified with 2-aminotiazole groups (SiAT), was used for preconcentration of cupper, zinc, nickel and iron from gasoline, normally used as a engine fuel. Surface characteristics and surface area of the silica gel were obtained before and after chemical modification using FT-IR, Kjeldhal and surface area analysis (B.E.T.). The retention and recovery of the analyte elements were studied by applying batch and column techniques. The experimental parameters, such as shaking time in batch technique, flow rate and concentration of the eluent (HCl-0.25-2.00 mol 1-1) and the amount of silica, on retention and elution, have been investigated. Detection limits of the method for cupper, iron, nickel and zinc are 0.8, 3, 2 and 0.1 mug 1-1, respectively. The sorption-desorption of the studied metal ions made possible the development of a preconcentration method for metal ions at trace level in gasoline using flame AAS for their quantification. (C) 2004 Published by Elsevier Ltd.

Keywords: AAS, Adsorption, Analysis, Cations, Chemical, Chemical Modification, Chemisorption, Concentration, Copper, Development, Elements, Ethanol, FAAS Determinations, Flow, FT-IR, FTIR, Gasoline, Gel, Iron, Made, Metal Ions, Metal-Ions, Modification, Modified, Nickel, Parameters, Preconcentration, Quantification, Recovery, Retention, Silica, Silica Gel, Sorption, Surface, Surface Area, Techniques, Zinc

? Burns, C.A., Boily, J.F., Crawford, R.J. and Harding, I.H. (2005), Cd(II) sorption onto chemically modified Australian coals. *Fuel*, **84** (12-13), 1653-1660.

Full Text: [2005\Fuel84, 1653.pdf](2005/Fuel84,%201653.pdf)

Abstract: Cadmium(II) adsorption onto chemically modified Australian coals has been studied as a function of p[H+] at 25°C. The low rank Collie and Loy Yang coals and the bituminous Norwich Park and Mount Arthur coals were modified with hydrogen peroxide. While both treated bituminous coals showed little affinity for Cd(II) the adsorption properties of the two low rank coals were drastically modified by treatment with hydrogen peroxide. NICA-Donnan model calculations for the treated Collie coal indicated an increase in functionality (ca. 5-fold) which was reflected in the important increase in Cd(II) adsorption obtained from batch adsorption experiments. On the other hand, the modified Loy Yang coal underwent a ca. 6.25 decrease in surface functionality and decomposition of the coal structure itself. These changes were reflected in the DRIFT spectra in bands characteristic of the oxygen-containing functional groups. The Cd(II) adsorption capacity of this modified coal was consequently substantially decreased. The two low rank coals were also treated with ammonia at p[H+] 7.5 and 9.5. This treatment did not, however, induce any substantial change in the adsorption of Cd(II). DRIFT spectra showed that the predominant functional groups present in both Collie and Loy Yang coal remained essentially unchanged after treatment with aqueous ammonia. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Activation, Adsorption, Adsorption, Adsorption Properties, Ammonia, Ammoniacal Solutions, Binding, Bituminous Coal, Brown Coals, Capacity, Cd(II), Chemistry, Coal, Coals, Decomposition, Drift, Functional Groups, Heavy-Metals, Hydrogen, Hydrogen Peroxide, Low-Rank Coals, Model, Modification, Modified, Oxidation, Peroxide, Properties, Sorption, Structure, Surface, Surface Functionality, Treatment

? Bartoňová, L., Klika, Z. and Spears, D.A. (2007), Characterization of unburned carbon from ash after bituminous coal and lignite combustion in CFBs. *Fuel*, **86** (3), 455-463.

Full Text: [2007\Fuel86, 455.pdf](2007/Fuel86,%20455.pdf)

Abstract: This paper deals with the characterisation of carbon (UC) from bottom ash (BA) and fly ash (FA) samples from two fluidised-bed power stations burning bituminous coal and lignite. The laboratory results for the carbon determinations and its mass balances are evaluated. Chemical and mineral analyses and textural characteristics (specific surface area and pore-size distribution) are presented. Depletion/enrichment of selected elements (S, Cl, V, Cr, Ni, Cu, Zn, As, Se, Sb, Hg, and Ph) in carbon from the bottom ash are compared with both ash compostions. The strong positive relationships between the concentrations of some trace element contents (Hg, Se, As, Cu, Ni, V and Cl) in fly ash with the content of carbon and the specific surface area of FA are presented and expressed by regression equations with very high correlation coefficients. Laser ablation-ICP-MS has been used to obtain an insight into element distributions within carbon grains from the bottom ash. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Coal Combustion, Unburned Carbon, Trace Elements, Fly-Ash, Mercury Capture, Residual Carbon, Particles, Behavior, Elements, Burnout, Samples, Boiler, Forms

? Alinnor, I.J. (2007), Adsorption of heavy metal ions from aqueous solution by fly ash. *Fuel*, **86** (5-6), 853-857.

Full Text: [2007\Fuel86, 853.pdf](2007/Fuel86,%20853.pdf)

Abstract: The removal characteristics of lead and copper ions from aqueous solution by fly ash were investigated under various conditions of contact time, pH and temperature. The influence of pH of the metal ion solutions on the uptake levels of the metal ions by fly ash were carried out between pH 4 and 12. The level of uptake of Pb2+ and Cu2+ ions by the fly ash generally increased, but not in a progressive manner, at higher pH values. The effect of temperature on the uptake of Pb2+ and Cu2+ ions was investigated between 30°C and 60°C, the adsorption of being enhanced at the lowest temperature. Rate constants were evaluated in terms of a first-order kinetics. The rate constant, k for uptake of Pb2+ and Cu2+ ions were 1.77×10-2 s-1 and 2.11×10-2 s-1, respectively. The experimental results underline the potential of coal fly ash for the recovery of metal ions from waste water. The main mechanisms involved in the removal of heavy metal ions from solution were adsorption at the surface of the fly ash and precipitation. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Kinetics, Mechanism, Waste-Water, Coal Ash, Removal, Cadmium, Copper(II), Sorption

? Hsu, T.C., Yu, C.C. and Yeh, C.M. (2008), Adsorption of Cu2+ from water using raw and modified coal fly ashes. *Fuel*, **87** (7), 1355-1359.

Full Text: [2008\Fuel87, 1355.pdf](2008/Fuel87,%201355.pdf)

Abstract: In this study, we found that both raw and modified coal fly ashes effectively adsorb Cu2+ from wastewater. The adsorption capacities followed the order CFA> CFA-600> CFA–NaOH. The adsorption isotherms for Cu2+ on the raw and modified coal fly ashes fit the Langmuir, Freundlich, and DKR isotherms quite well. These adsorptions were endothermic in nature; the values of E (between 1.3 and 9.6 kJ mol−1) were consistent with an ion-exchange adsorption mechanism. The adsorptions of Cu2+ onto CFA, CFA-600, and CFA–NaOH followed pseudo-second-order kinetics.

Keywords: Sugar-Industry Waste, Aqueous-Solutions, Heavy-Metals, Red Mud, Removal, Zinc, Adsorbents, Behavior, Kinetics, Sorption

? Hsu, T.C. (2008), Adsorption of an acid dye onto coal fly ash. *Fuel*, **87** (13-14), 3040-3045.

Full Text: [2008\Fuel87, 3040.pdf](2008/Fuel87,%203040.pdf)

Abstract: In this study, we found the raw coal fly ash (CFA) that had not been subjected to any pretreatment process had superior adsorbing ability for the anionic dye Acid Red 1 (AR1) than did two modified coal fly ashes (CFA-600 and CFA-NaOH). The adsorption capacities followed the order CIA > CFA-600 > CFA-NaOH, and they each increased upon increasing the temperature (60°C > 45°C > 30°C). The adsorptions of AR1 onto CFA, CFA-600, and CFA-NaOH all followed pseudo-second-order kinetics. The isotherms for the adsorption of AR1 onto the raw and modified coal fly ashes fit the Langmuir isotherm quite well; the adsorption capacities of CFA, CFA-600, and CFA-NaOH for AR1 were 92.59-103.09, 32.79-52.63, and 12.66-25.12 mg g-1, respectively. According to the positive values of ΔH° and ΔS°, these adsorptions were endothermic processes. The ARE and EABS error function methods provided the best parameters for the Langmuir isotherms and pseudo-second-order equations, respectively, in the AR1-CFA adsorption system. (C) 2008 Elsevier Ltd. All rights reserved.

Keywords: Acid Dye, Activated Carbon, Adsorption, Aqueous-Solutions, AR1, Basic-Dyes, Bottom Ash, Coal Fly Ash, Dye, Endothermic, Error, Fly Ash, Function, Industry Waste, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherms, Low-Cost Adsorbents, Malachite Green, Methods, Methylene-Blue, Pretreatment, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Red Mud, Rhodamine-B, Rights, Temperature

? Yagmur, E., Ozmak, M. and Aktas, Z. (2008), A novel method for production of activated carbon from waste tea by chemical activation with microwave energy. *Fuel*, **87** (15-16), 3278-3285.

Full Text: [2008\Fuel87, 3278.pdf](2008/Fuel87,%203278.pdf)

Abstract: This study presents the production of activated carbon from waste tea. Activated carbons were prepared by phosphoric acid activation with and without microwave treatment and carbonisation of the waste tea under nitrogen atmosphere at various temperatures and different phosphoric acid/precursor impregnation ratios. The surface properties of the activated carbons were investigated by elemental analysis, BET surface area, SEM, FTIR. Prior to heat treatment conducted in a furnace, the mixture of the waste tea and H3PO4 Was treated with microwave heating. The maximum BET surface area was 1157 m2/g for the sample treated with microwave energy and then carbonised at 350°C. In case of application of conventional method, the BET surface area of the resultant material was 928.8 m2/g using the same precursor and conditions. According to the Dubinin-Radushkevich (DR) method the micropore surface area for the sample treated with microwave energy was higher than the sample obtained from the conventional method. Results show that microwave heating reasonably influenced the micropore surface area of the samples as well as the BET surface area.

The samples activated were also characterised in terms of the cumulative pore and micropore volumes according to the BJH, DR and t-methods, respectively. (c) 2008 Elsevier Ltd. All rights reserved.

Keywords: Activated Carbon, Biomass, Chemical Activation, Microwave Energy, Carbonization, Phosphoric-Acid Activation, Porosity Development, Apple Pulp, Pyrolysis, Wood, Biomass, Carbonization, Regeneration, Impregnation, Adsorption

? Kumagai, S., Ishizawa, H. and Toida, Y. (2010), Influence of solvent type on dibenzothiophene adsorption onto activated carbon fiber and granular coconut-shell activated carbon. *Fuel*, **89** (2), 365-371.

Full Text: [2009\Fuel89, 365.pdf](2009/Fuel89,%20365.pdf)

Abstract: The adsorption behavior of dibenzothiophene (DBT) on an activated carbon fiber (ACF) and a granular coconut-shell activated carbon (GCSAC) in the solvents n-hexane, n-decane, toluene, and mixture of n-decane and toluene was investigated. The DBT adsorption onto both samples was more active in n-hexane than in n-decane. The lowest DBT adsorption was observed in toluene. Regardless of the type of activated carbons and solvents, all the isotherms fit the Freundlich equation better than the Langmuir equation. At low equilibrium concentrations of <2 mass ppm-S, GCSAC displayed greater capacity for DBT adsorption than did ACF in all the tested solvents. The adsorption kinetics of ACF and GCSAC in all the tested solvents were governed by a pseudo-second-order model. (c) 2009 Elsevier Ltd. All rights reserved.

Keywords: ACF, Activated Carbon, Activated Carbon Fiber, Activated Carbons, Adsorption, Adsorption Behavior, Adsorption Kinetics, Behavior, Capacity, Carbon, Coconut Shell, Deep Desulfurization, Desulfurization, Dibenzothiophene, Diesel Fuel, Dye, Equilibrium, Freundlich, Freundlich Equation, Fuel Oil, Fuel-Cell Applications, Hydrodesulfurization, Isotherms, Kinetics, Langmuir, Langmuir Equation, Model, Oil, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Rights, Toluene

? Gonzalez, A., Moreno, N., Navia, R. and Querol, X. (2010), Study of a Chilean petroleum coke fluidized bed combustion fly ash and its potential application in copper, lead and hexavalent chromium removal. *Fuel*, **89** (10), 3012-3021.

Full Text: [2010\Fuel89, 3012.pdf](2010/Fuel89,%203012.pdf)

Abstract: This work deals with the characterization of a circulated fluidized bed combustion (CFCB) Chilean petroleum coke fly ash (FA) from a petroleum coke power plant, and its potential use in neutralization and heavy metals removal from acid wastewaters. FA presents a high Ca and SO42- content, being anhydrite the major crystalline mineral phase, with minor proportions of calcite, portlandite and lime. Regarding to environmental characterization of this fly ash, leaching tests allowed concluding that FA is a non-hazardous residue. Heavy metals removal tests indicate that FA is able to remove Cu2+ and Pb2+ mainly due to a precipitation process, while Cr(VI) is being removed probably due to a reduction process to Cr(III), at high liquid to solid ratios. Cu-2+, Pb-2+ and Cr(VI) kinetic experimental data present acceptable fit to a pseudo-second order kinetic model. According to these results, FA may be used to remove heavy metals and neutralize acid wastewaters, suggesting a possible replacement of pure and costly alkaline materials. (c) 2010 Elsevier Ltd. All rights reserved.

Keywords: Acid-Mine Drainage, Adsorption, Application, Aqueous-Solution, Calcite, Characterization, Chromium, Chromium Removal, Circulating Fluidized Bed Combustion, Coal, Combustion, Copper, Cr(III), Cr(VI), Cu2+, Data, Environmental, Experimental, Fluidized Bed, Fly Ash, Fly Ashes, Heavy Metals, Hexavalent Chromium, Kinetic, Kinetic Model, Leachability, Leaching, Leaching Tests, Lead, Lime, Liquid, Low-Cost Adsorbents, Metals, Metals Removal, Minor, Model, Neutralization, Pb2+, Petroleum Coke, Plant, Potential, Power, Power Plant, Power-Plant, Precipitation, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Reduction, Removal, Rights, Sewage-Sludge, Volcanic Soil, Waste-Water, Wastewaters, Work

? Qu, R.J., Sun, C.M., Ma, F., Cui, Z.Z., Zhang, Y., Sun, X.Y., Ji, C.N., Wang, C.H. and Yin, P. (2012), Adsorption kinetics and equilibrium of copper from ethanol fuel on silica-gel functionalized with amino-terminated dendrimer-like polyamidoamine polymers. *Fuel*, **92** (1), 204-210.

Full Text: [2012\Fuel92, 204.pdf](2012/Fuel92,%20204.pdf)

Abstract: The adsorption kinetics and equilibrium of silica-gel functionalized with amino-terminated dendrimer-like polyamidoamine (PAMAM) polymers SiO2-G1.0, SiO2-G2.0 and SiO2-G3.0 for Cu2+ in ethanol fuel were investigated by using batch method. The results indicated that the all the adsorptions of the three adsorbents followed well the pseudo second-order model. The adsorption isotherms were fitted by Langmuir model, Freundlich model and Dubinin-Radushkevich (D-R) model. The results showed that Langmuir model was more suitable to describe the equilibrium data than the Freundlich model. From the D-R isotherm model, the mean free energy E calculated of the three adsorbents showed that the adsorptions were taken place by physical processes. Thermodynamic parameters, ΔG(0), ΔH(0) and ΔS(0) indicated the Cu2+ adsorption to be endothermic and spontaneous with decreased randomness at the solid-solution interface, resulting in their higher adsorption capacities at higher temperature. The effect of generation number of PAMAM polymers loaded on silica-gel, contact time, initial concentration and temperatures on the adsorption capabilities were studied in detail. Moreover, the adsorption mechanism of copper from ethanol fuel was also presumed. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Activated Carbon, Adsorption, Adsorption Kinetics, Aqueous-Solutions, Atomic-Absorption-Spectrometry, Copper Ion, Cu, Cu2+ Adsorption, Dubinin-Radushkevich, Equilibrium, Ethanol Solution, Freundlich, Gasoline, Isotherm, Kinetics, Langmuir, Metal-Ions, Plasma-Mass Spectrometry, Preconcentration, Si Engine, Silica-Gel Functionalized With Polyamidoamine, Sorption, Thermodynamic, Thermodynamic Parameters

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Namasivayam, C. and Yamuna, R.T. (1995), Waste biogas residual slurry as an adsorbent for the removal of Pb(II) from aqueous solution and radiator manufacturing industry wastewater. *Fuel and Energy Abstracts*, **36** (5), 377.

Full Text: [F\Fue Ene Abs36, 377.pdf](F/Fue%20Ene%20Abs36,%20377.pdf)

Abstract: Waste biogas residual slurry (BRS) was used for the adsorption of Pb(II) from aqueous solution, over a range of initial metal ion concentrations (20-100 mg litre-1), agitation times (5-70 min), adsorbent doses (0.4-5.0 g litre-1) and initial pH values (1.5-6.0). The amount of Pb(II) adsorbed (mg g-1 adsorbent) increased with increases in the initial concentration of Pb(II). The applicability of the Lagergren rate equation was also investigated.

Periasamy, K. and Namasivayam, C. (1995), Removal of nickel(II) from aqueous solution and nickel plating industry wastewater using an agricultural waste: Peanut hulls. *Fuel and Energy Abstracts*, **36** (5), 385.

Full Text: [F\Fue Ene Abs36, 385.pdf](F/Fue%20Ene%20Abs36,%20385.pdf)

Abstract: Activated carbon prepared from peanut hulls (PHC), an agricultural waste by-product, has been used for the adsorption of Ni(II) from aqueous solution. The process of uptake obeys both Freundlich and Langmuir adsorption isotherms. The applicability of Lagergren kinetic model has also been investigated.

Ho, Y.S. (1995), Batch nickel removal from aqueous solution by sphagnum moss peat. *Fuel and Energy Abstracts*, **36** (6), 457.

Full Text: [F\Fue Ene Abs36, 457.pdf](F/Fue%20Ene%20Abs36,%20457.pdf)

Abstract: The batch adsorption of Ni(II) onto sphagnum moss peat was studied. The reaction was pH dependent with an optimum 4.0-7.0. Langmuir and Freundich isotherms, established for various initial Ni concentrations and for a range of pH, were used to obtain a single relation between initial metal concentration, metal removal, and initial pH. The latter controlled efficiency of Ni removal.

Kapoor, A. and Viraraghavan, T. (1996), Fungal biosorption - An alternative treatment option for heavy metal bearing wastewaters: A review. *Fuel and Energy Abstracts*, **37** (2), 140.

Full Text: [F\Fue Ene Abs37, 140.pdf](F/Fue%20Ene%20Abs37,%20140.pdf)

Abstract: Rapid industrialization has led to increased disposal of heavy metals and radio nuclides into the environment. Removal of heavy metals and radio nuclides from metal-bearing wastewater is usually achieved by physicochemical processes before discharging the effluents into natural waterbody systems. This paper reviews the removal of heavy metals and radio nuclides by fungi.

Dudarchik, V.M. (1998), Structure and properties of water-soluble humic substances of peat. *Fuel and Energy Abstracts*, **39** (1), 29.

Full Text: [F\Fue Ene Abs39, 29.pdf](F/Fue%20Ene%20Abs39,%2029.pdf)

Abstract: 13C NMR spectroscopy was used to examine the structure of humic acids in peat and products of their oxidation destruction. Water-soluble products of oxidation destruction are highly oxidized fragments of humic acids enriched with O-containing functional groups and having a high cation-absorption capacity.

Shao, Y. (1998), Study on activated fly ash as an adsorbent for Weak Acid Brilliant Green GS. *Fuel and Energy Abstracts*, **39** (1), 29.

Full Text: [F\Fue Ene Abs39, 29.pdf](F/Fue%20Ene%20Abs39,%2029.pdf)

Abstract: Original fly ash was mixed with slaked lime and then heated to produce activated fly ash. The effect of lime content and temperature on the ability of the product to adsorb Weak Acid Brilliant Green GS dye was studied. The saturation adsorption capacity of the best product was 47 times that of inactivated fly ash. The removal of COD in wastewater was 90% and the decolorization was > 90%. The structure of the activated fly ash and its adsorbing mechanism were studied by TGA, DTA and IR.

# Title: Fuel Processing Technology

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Martinez-Tarazona, M.R. and Spears, D.A. (1996), Fate of trace elements and bulk minerals in pulverized coal combustion in a power station. *Fuel Processing Technology*, **47** (1), 79-92.

Full Text: [F\Fue Pro Tec47, 79.pdf](F/Fue%20Pro%20Tec47,%2079.pdf)

Arpa, C., Başyilmaz, E., Bektaş, S., Genç, Ö. and Yürüm, Y. (1996), Cation exchange properties of low rank Turkish coals: Removal of Hg, Cd and Pb from waste water. *Fuel Processing Technology*, **68** (2), 111-120.

Full Text: [F\Fue Pro Tec68, 111.pdf](F/Fue%20Pro%20Tec68,%20111.pdf)

Abstract: The removal of contaminant heavy-metal ions from spiked aqueous samples 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 coals surface were the adsorption site to remove cations from solution via ion exchange. The equilibrium pH of the coal/solution mixture has been shown to be the principal factor controlling the extent of removal of Hg(II), Cd(II), and Pb(II) ions from aqueous solutions. The optimum pH was measured to be 4.0 for Hg and Cd, and 5.0 for Pb and it was found that the system reached equilibrium in 20 min. The maximum adsorption capacities of the metal ions from their single solutions were 0.039 mmol for Hg(LI), 0.008 mmol for Cd(II) and 0.041 mmol for Pb(II) per gram of coal. The order of affinity on; a mole basis was as follows: Pb(II) > Hg(II) > Cd(II). The same behavior was observed during the competitive adsorption, that is in the case of adsorption from their ternary solutions. Waste water samples were obtained from a mining industry plant located within Aegean Region, Turkey. It was observed that the use of low rank coal was considerably effective in removing Hg, Cd and Pb cations from water. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Turkish Low Rank Coal, Heavy-Metal Ions, Ion Exchange, Monodisperse Polystyrene Microspheres, Adsorption, Sorbents

Gurses, A., Yalcin, M., Sozbilir, M. and Dogar, C. (2003), The investigation of adsorption thermodynamics and mechanism of a cationic surfactant, CTAB, onto powdered active carbon. *Fuel Processing Technology*, **81** (1), 57-66.

Full Text: [F\Fue Pro Tec81, 57.pdf](F/Fue%20Pro%20Tec81,%2057.pdf)

Abstract: In this study, the adsorption mechanism of cethyltrimethylammonium bromide (CTAB), a cationic surfactant, onto powdered active carbon (PAC) from aqueous solution was investigated and also some thermodynamic quantities such as isosteric adsorption enthalpy and entropy for this system were determined. In addition, the mechanistic and thermodynamic results of the experiments were supported with the surface zeta potential measurements. It was found that 5 min is sufficient in order to reach adsorption equilibrium. The adsorption of CTAB onto active carbon/water interface mainly takes place through ion exchange, the ion pairing and hydrophobic bonding. The predominant mechanisms in the lower CTAB concentrations are probably ion exchange and ion pairing. The hydrophobic bonding mechanism predominates with the increasing CTAB concentration. It was determined that the signs of isosteric adsorption enthalpy (ΔH(zeta)) and isosteric adsorption entropy (ΔS(zeta)) for adsorption of CTAB onto PAC are negative and positive, respectively. As temperature increases, the amount of CTAB adsorbed is decreased indicating the exothermic nature of adsorption process. This decreasing verifies the negative sign expected of (ΔH(ads))(zeta). As a result of the adsorption, since the number of the water molecules surrounding the hydrocarbon tails of CTAB molecules decreases and thus the degree of freedom of the water molecules increases, the positive sign of (ΔS(ads))(zeta) points out the hydrophobic bonding mechanisms. (C) 2003 Elsevier Science B.V. All rights reserved.

Keywords: Adsorption, CTAB, Powdered Active Carbon, Zeta Potential, Hydrophobic Interaction, Cetyltrimethylammonium Bromide, Silica, Coadsorption, Interface, Stability, Micelles

? Pimentel, P.M., Melo, M.A.F., Melo, D.M.A., Assunção, A.L.C., Henrique, D.M., Silva, Jr., C.N. and González, G. (2008), Kinetics and thermodynamics of Cu(II) adsorption on oil shale wastes. *Fuel Processing Technology*, **89** (1), 62-67.

Full Text: [2008\Fue Pro Tec89, 62.pdf](2008/Fue%20Pro%20Tec89,%2062.pdf)

Abstract: The oil shale waste material, retorted shale, was utilized as an adsorbent for Cu(II) removal from aqueous solution. The kinetics and thermodynamic adsorption was investigated during a series of batch adsorption experiments. The removal efficiency was controlled by solution pH, temperature, initial ion concentration and contact time. Two simple kinetic models, pseudo-first-and second-order, were used to investigate the adsorption mechanisms. The pseudo-second-order chemical reaction kinetics provides the best correlation with the experimental data. Langmuir and Freundlich models were used to fit the equilibrium data, which showed that Langmuir best-fitted these data. Thermodynamic parameters such as free energy, enthalpy and entropy were calculated to predict the nature of the adsorption process. (c) 2007 Published by Elsevier B.V.

Keywords: Adsorbent, Adsorption, Adsorption Isotherms, Aqueous Solution, Binding, Cadmium, Cooper(II), Copper(II), Cu(II), Equilibrium, Heavy-Metal Ions, Kinetic, Kinetic Models, Kinetics, Langmuir, Parameters, pH, Reaction Kinetics, Removal, Removal Efficiency, Retorted Shale, Shale, Solution, Temperature, Thermodynamics

Notes: highly cited

? Pavlish, J.H., Sondreal, E.A., Mann, M.D., Olson, E.S., Galbreath, K.C., Laudal, D.L. and Benson, S.A. (2003), State review of mercury control options for coal-fired power plants. *Fuel Processing Technology*, **82** (2-3), 89-165.

Full Text: [2003\Fue Pro Tec82, 89.pdf](2003/Fue%20Pro%20Tec82,%2089.pdf)

Abstract: This paper presents an overview of research related to mercury control technology for coal-fired power plants and identifies areas requiring additional research and development. It critically reviews measured mercury emissions; the chemistry of mercury transformation and control; progress in the development of promising control technologies: sorbent injection, control in wet scrubbers, and coal cleaning; and projects costs for mercury control. Currently, there is no single best technology that can be broadly applied. Combinations of available control methods may be able to provide up to 90% control for some plants but not others. In August 2000, the National Research Council completed a study that determined that the U.S. Environmental Protection Agency’s (EPA) conservative exposure reference dose of 0.1 mug mercury/ kg body weight/day was scientifically justified to protect against harmful neurological effects during fetal development and early childhood. Subsequently, in December 2000, EPA made its regulatory decision that mercury emissions from coal-fired electric generating plants will need to be controlled on a schedule that calls for a proposed rule by December 2003, a final rule by December 2004, and full compliance by the end of 2007. Coal-fired utility boilers are currently the largest single-known source of mercury emissions in the United States. EPA’s Information Collection Request (ICR) to coal-burning utilities indicated that there were 75 tons of mercury in the 900 million tons of coal used in U.S. power plants during 1999. Estimates of total mercury emissions from coal-fired plants based on ICR data range from 40 to 52 tons. On average, about 40% of the mercury entering a coal-fired power plant is captured and 60% emitted. Percentage emissions of mercury for individual plants tested under the ICR varied widely depending on coal type and emission control equipment. Western subbituminous coals on average contain only about half as much mercury as Appalachian bituminous coals, but the higher chlorine content of the latter promotes mercury oxidation and results in a higher percentage of mercury capture. Some iron minerals found in coal also catalyze mercury oxidation, whereas calcium and sulfur tend to impede oxidation. Review of ICR data on mercury capture in boilers and existing control devices indicates very little mercury removal within a pulverized coal-fired boiler, and the level of mercury oxidation at the exit of the boiler was increased for higher coal chlorine contents and lower exit temperatures. Mercury removals across cold-side electrostatic precipitators (ESPs) averaged 27%, compared to 4% for hot-side ESPs. Removals for fabric filters (FFs) were higher, averaging 58%, owing to additional gas-solid contact time for oxidation. Both wet and dry flue gas desulfurization (FGD) systems removed 80% to 90% of the gaseous mercury(II), but elemental mercury (Hg0) was not affected. High mercury removals, averaging 86%, in fluidized-bed combustors with FFs were attributed to mercury capture on high-carbon fly ash. Tests on the two coal-fired integrated gasification combined-cycle plants in the United States suggest that about half of the coal mercury was emitted predominantly in elemental form. ICR tests on selective catalytic reduction and selective noncatalytic reduction used for NO, control were inconclusive, and additional full-scale tests are in progress. The mechanisms responsible for varied levels of mercury oxidation and capture are beginning to be understood. Mercury in coal occurs in association with pyrite and other sulfide minerals and may also be organically bound. Coal mercury is converted to gaseous Hg0 in the combustion flame and is subsequently partially oxidized (35% to 95%) as the combustion gases cool. Mercury oxidation in boiler systems is kinetically controlled; homogeneous oxidation reactions are promoted by chlorine and atomic chlorine, and heterogeneous oxidation is promoted by fly ash and sorbents. Acid gases critically influence the heterogeneous oxidation of mercury, particularly as it affects capture on sorbents. HCl, NO, and NO, all promote oxidation and capture both individually and in combination. However, the combination of SO2 with NO2 greatly reduces capture of Hg0 on activated carbon, whereas oxidation continues on the solid surface. Mass transfer of gaseous mercury by diffusion from the bulk gas to the solid surface can also limit heterogeneous oxidation and capture of mercury, but diffusion within a porous sorbent is not believed to be rate-limiting. Reducing the size of the sorbent particles and increasing their dispersion can greatly enhance control where mass transfer is limiting. To achieve 90% control of a mercury concentration of 10 mug/scm in 2-s residence time by activated carbon injection requires a minimum carbon-to-mercury (C/Hg) mass ratio of about 3000:1 for 4-mum particles compared to 18,000:1 for 10-mum particles. Mercury removals in some tests performed to characterize sorbents have been mass transfer-limited by the large particle size of the sorbents used. Mercury sorption capacities between about 200 and 5000 mug Hg/g C have been reported for conditions applying to coal combustion. However, higher measured capacities do not always correlate with higher removal levels in practice because of the effect of other variables. What is important is that several of the activated carbons tested have sufficient capacity to capture mercury at carbon injection rates below a C/Hg mass ratio of 10,000, based on both laboratory and field sorption tests. Since capacity is defined in reference to an assumed sorption equilibrium, the equilibrium capacity of a sorbent determined over a period of hours in the laboratory may have limited relevance to the amount of mercury captured in a few seconds’ time of flight or in minutes of contact time on an FF. Laboratory tests that are more representative of the conditions in an actual control device are needed to determine more useful capacity factors. Injection of activated carbon upstream of either an ESP or an FF baghouse is a retrofit control technology that has potential application to 75% of all coal-fired power plants in the United States that are not equipped with FGD scrubbers. Field and pilot-scale tests on activated carbon injection for mercury control have resulted in mercury removals between about 25% and 95% over the range of 2000-15,000 C/Hg mass ratio. The mercury removal data from some tests could be correlated with carbon injection rates by assuming that the removal was mass transfer-limited, whereas in tests on other coals, removals appeared to be controlled by catalytic oxidation and capture on fly ash. Mercury capture on sorbents, therefore, depends on the properties of the coal being burned, and pilot-scale tests on particular coals should be performed before a full-scale sorbent injection system is designed. Development of low-cost, ultrafine sorbents with high effective sorption capacities and rapid reaction kinetics would revolutionize injection technology. Engineering development is also needed to improve sorbent dispersion and to optimize gas-solid contact time. Wet FGD units currently installed on about 25% of the U.S. coal-fired utility boilers remove nearly 90% of the mercury(II) entering but essentially none of the Hg0. Research to enhance mercury removal in scrubbers focuses on converting Hg-0 to an oxidized form in or ahead of the scrubber using proprietary reagents. Palladium and carbon-based catalysts have shown the most promise for oxidizing Hg0. Mercury removals from near 0% to about 60% are reported for the physical washing methods of the type that are widely used to remove pyritic sulfur and ash from 77% of all bituminous coal used in the United States. Advanced cleaning methods and hydrothermal treatment offer higher removals, but no coal-cleaning method is likely to reliably meet a 70% or greater removal requirement. Coal cleaning could, however, contribute to overall mercury control under a cap-and-trade form of mercury regulation. Concerns over the release of mercury from coal combustion by-products by leaching or atmospheric reemission will be heightened with the installation of mercury control technologies. Concentrations of mercury in leachates from fly ashes, FGD materials, and activated carbon saturated with mercury are very low and usually below detection limits. Essentially, no mercury emission from these materials into air has been measured at ambient temperature. However, mercury is released from saturated sorbents upon heating above 135°C. Preliminary results on the stability of mercury on fly ash, FGD materials, and saturated carbons are encouraging, but more testing is needed before the concerns are fully resolved. Published by Elsevier Science B.V.

Keywords: Activated Carbon, Activated Carbons, Atmospheric Mercury, Carbon, Coal-Fired, Combustion, Combustion Flue-Gas, Elemental Mercury, Emission Control, Equilibrium, Fluorescence Spectrometry, Fly-Ash, Incineration, Kinetics, Mass Transfer, Mercury, Mercury Control, Particles, Power Plants, Review, SO2, Sorption, Speciation, Trace-Elements, Transformations

? Wang, S.B., Ma, Q. and Zhu, Z.H. (2009), Characteristics of unburned carbons and their application for humic acid removal from water. *Fuel Processing Technology*, **90** (3), 375-380.

Full Text: [2009\Fue Pro Tec90, 375.pdf](2009/Fue%20Pro%20Tec90,%20375.pdf)

Abstract: Two unburned carbons (UCs) were separated from coal fly ash and their physicochemical properties were characterised using N-2 adsorption, XRD, SEM, XPS, FT-IR and potentiometric mass titration. Chemical treatments using HNO3 and KOH were also conducted on one of the unburned carbons. The adsorption of humic acid from aqueous solution was performed on these untreated and chemically treated UCs. It was found that the UCs showed different porous structure and surface chemical properties, which influenced their adsorption behaviour. UCs exhibited high adsorption capacity for humic acid. After chemical treatment. the textural structure and surface functional groups of the unburned carbon were changed and the adsorption behaviour showed significant difference. Acid treatment did not change the surface area but reduced the functional groups while basic treatment significantly enhanced the surface area in microporous section but still reduced the surface functional groups. Particle size and pH solution will also influence the adsorption capacity. The adsorption will increase with decreasing particle size for humic acid. Higher pH solution will reduce humic acid adsorption on unburned carbon. Ionic strength will also affect humic acid adsorption showing positive effect on adsorption capacity. (c) 2008 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Capture, Chemical Treatment, Combustion, Dye Adsorption, Fly-Ash, Humic Acid, Kinetics, Mercury, Sorption, Substances, Unburned Carbon

? Dehkordi, A.M., Kiaei, Z. and Sobati, M.A. (2009), Oxidative desulfurization of simulated light fuel oil and untreated kerosene. *Fuel Processing Technology*, **90** (3), 435-445.

Full Text: [2009\Fue Pro Tec90, 435.pdf](2009/Fue%20Pro%20Tec90,%20435.pdf)

Abstract: An experimental investigation was conducted on the oxidative desulfurization of model sulfur compounds such as dibenzothiophene and benzothiophene in toluene as a simulated light fuel oil with a mixture of hydrogen peroxide as the oxidant and various acids as the catalyst. The influences of various parameters including reaction temperature (T), acid to sulfur molar ratio (Acid/S), oxidant to sulfur molar ratio (O/S), type of acid, and the presence of sodium tungstate and commercial activated carbon as a co-catalyst on the fractional conversion of the model sulfur compounds were investigated. The experimental data obtained were used to determine the reaction rate constant of the model sulfur compounds and the corresponding activation energy. Moreover, the adsorption of model sulfur compounds on the commercial activated carbons supplied by Jacobi Co. (Sweden, AquaSorb 101) was studied and the effects of different parameters such as temperature, and various chemical treatments on the adsorption of the sulfur compounds were investigated. Furthermore. the oxidative desulfurization of untreated kerosene with the total sulfur content of 1700 ppmw produced by an Iranian refining company (Isfahan refinery) was successfully investigated. These experiments were performed using formic acid as the catalyst and hydrogen peroxide as the oxidant at the mild operating conditions of T=50°C, O/S=5, and the Acid/S=10. It was realized that about 87% of the total sulfur content of untreated kerosene could be removed after 30 min oxidation followed by liquid-liquid extraction. (c) 2008 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Benzothiophene, Cell Applications, Chemical Oxidation, Deep Desulfurization, Deep Desulfurization, Dibenzothiophene, Diesel Fuel, Gas Oil, Hydrogen-Peroxide, Metal-Ions, Organosulfur Compounds, Oxidation, Oxidative Desulfurization, Tert-Butyl Hydroperoxide

? Wajima, T. and Sugawara, K. (2011), Adsorption behaviors of mercury from aqueous solution using sulfur-impregnated adsorbent developed from coal. *Fuel Processing Technology*, **92** (7), 1322-1327.

Full Text: [2011\Fue Pro Tec92, 1322.pdf](2011/Fue%20Pro%20Tec92,%201322.pdf)

Abstract: Adsorption of mercury from aqueous solution on sulfur-impregnated adsorbent has been studied. Raw coal was mixed with K2S powder, and then heated at 800-1000ºC for 30 min in nitrogen to produce sulfur-impregnated adsorbent. The sulfur content and specific surface area of the adsorbent were determined, and the ability of the adsorbent to adsorb mercury in aqueous solution was examined. With increasing temperature of sulfur-impregnation, specific surface area of the adsorbent increases, while sulfur content of the adsorbent is almost constant. The adsorbent obtained at 900ºC shows the highest and fastest adsorption of mercury from aqueous solution at 25ºC, and the elution extents of adsorbed mercury are negligible in distilled water and 10% in 0.1 M HCl solution, respectively. Adsorption kinetics was tested for pseudo-first order and pseudo-second order reactions, and the rate constants of adsorption for these kinetic models were calculated. Adsorption experiments demonstrate that the adsorption process corresponds to pseudo-second-order kinetic model than pseudo-first-order model. With increasing temperature of aqueous solution, the kinetics of adsorption becomes faster and the amount of mercury adsorbed on the adsorbent increases. The thermodynamic values, ΔGº, ΔHº and ΔSº, indicated that adsorption was an endothermic and spontaneous process. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Adsorption Kinetics, Aqueous Solution, Coal, Extraction, Gas-Phase Mercury, Heavy-Metals, Ion-Exchange, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Kinetics, Mercury, Mercury Adsorption, Removal, Sulfur-Impregnation, Temperature, Thermodynamic, Thiol-Groups, Truex Process Solvent, Waste-Water, Water

? Stavropoulos, G.G. (2011), A fundamental approach in liquid phase adsorption kinetics. *Fuel Processing Technology*, **92** (10), 2123-2126.

Full Text: [2011\Fue Pro Tec92, 2123.pdf](2011/Fue%20Pro%20Tec92,%202123.pdf)

Abstract: Liquid-solid adsorption kinetic data are mostly interpreted by a limited number of rate equations, (pseudo-first, pseudo-second order and Elovich). Besides, a fundamental tool in heterogeneous reactions, the Langmuir theory of adsorption, is used almost exclusively to model equilibrium isotherms but, surprisingly, not kinetics. Considering the limited applicability of the mentioned kinetic models, especially in estimating kinetic constants and predicting adsorption mechanism, it seems more reasonable to apply the Langmuir kinetic equation in modeling the liquid phase adsorption. In the diffusion-free regime, by constructing the experimental equilibrium isotherm of a system, one can easily check the validity of the Langmuir model. Afterwards, kinetic constants can be readily calculated and used to predict adsorption performance under different operating conditions. The proposed procedure was tested in the experimental results of cyanide adsorption in activated carbon to verify the applicability of the Langmuir adsorption mechanism and estimate the equilibrium and kinetic constants. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Activated Carbon, Adsorption, Adsorption Kinetics, Equilibrium, Equilibrium Isotherms, Isotherm, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Mechanism, Modeling, Models, Removal

# Title: Fuel Science & Technology International

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: Impact Factor

? Zhang, P.Z., Li, L.Y. and Ye, C.H. (1994), Study of structural feature of peat, lignite and humic-acid by solid-state C-13 NMR-spectroscopy. *Fuel Science & Technology International*, **12** (4), 631-648.

Abstract: Four low rank coals (peat and lignite) and their derived humic acids have been investigated by the C-13 CP/MAS/TOSS NMR technique. The NMR analysis indicates that the peat contains a significant amount of unaltered plant components including cellulose, hemicellulose, lignin, waxes, and resins.

Variable contact time and dipolar dephasing experiments were performed on each sample. The data from above experiments, together with normal CP/MAS integration over selected chemical shift range, were used to derive 12 parameters of carbon skeletal structure including the aromaticity.

From the ratio of aromatic bridgehead carbons, f(a)B, to the aromatic peripheral carbons, f(a)CP, x(BP), as measured by NMR, the aromatic cluster size may be estimated for each coal.

Keywords: High-Resolution, Cellulose, Spectra

# Title: Fullerenes Nanotubes and Carbon Nanostructures

Full Journal Title: [Fullerenes Nanotubes and Carbon Nanostructures](http://taylorandfrancis.metapress.com/(lzgo3tetaosmd445ohso5j55)/app/home/journal.asp?referrer=backto&backto=linkingpublicationresults,1:107832,1;&absoluteposition=1#A1)

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? Terekhov, A.I., Efremenkova, V.M., Stankevich, I.V., Krukovskaya, N.V. and Terekhov, A.A. (2006), Information resources for evaluating the development of research direction - ‘Fullerenes’. *Fullerenes Nanotubes and Carbon Nanostructures*, **14** (2-3), 579-584.

Full Text: [2006\Ful Nan Car Nan14, 579.pdf](2006/Ful%20Nan%20Car%20Nan14,%20579.pdf)

Abstract: The intent of the paper is to evaluate the progress of R&D in the field of fullerene science in Russia in comparison with the world trends. With that end in view we use the databases (DBs) of Scientific and Technical Network International (STN) and also less known Russian DBs: of the Russian Foundation for Basic Research (applications and grants received, research teams, titles and abstracts of the papers, published by projects participants); of ROSPATENT (patents), and of the Russian Higher Certification Commission (dissertation abstracts). Together with bibliometric statistics, institutional structure and socioeconomic problems of the scientific field development are considered.

Keywords: Applications, Bibliometric, Bibliometric Analysis, Databases, Development, Fullerenes, Paper, Patents, Research, Research and Development, Russia, Science, Socioeconomic Appraisal, Statistics, Structure, Trends

? Moradi, O., Zare, K., Monajjemi, M., Yari, M. and Aghaie, H. (2010), The Studies of Equilibrium and Thermodynamic Adsorption of Pb(II), Cd(II) and Cu(II) Ions from Aqueous Solution onto SWCNTs and SWCNT-COOH Surfaces. *Fullerenes Nanotubes and Carbon Nanostructures*, **18** (3), 285-302.

Full Text: [2010\Ful Nan Car Nan18, 285.pdf](2010/Ful%20Nan%20Car%20Nan18,%20285.pdf)

Abstract: The equilibrium and thermodynamics of Pb(II), Cd(II) and Cu(II) ions adsorption from aqueous solution onto single-walled carbon nanotube (SWCNT) and carboxylate group functionalized single-walled carbon nanotube (SWCNT-COOH) surfaces were studied by atomic absorption spectroscopy. The effect of contact time, pH, initial concentration of ion, ionic strength and temperature on the adsorption of ion was investigated. The results indicated that Langmuir model fits adsorption isotherm data better than the Freundlich model. The results also demonstrated that SWCNT-COOH surfaces can more effectively adsorb mentioned ions than a SWCNT surface. Maximum adsorption capacities (qm) for Pb(II), Cu(II) and Cd(II) ions onto SWCNT-COOH were obtained as 96.02, 77.00 and 55.89 mg/g, respectively, and by SWCNTs as 33.55, 24.29 and 24.07 mg/g, respectively. Thermodynamic parameters values showed that the adsorption of ions on SWCNT-COOH and SWCNTs at 283-313 K is spontaneous and endothermic.

Keywords: Adsorption, Adsorption Isotherm, Cadmium, Copper(II), Equilibrium, Granular Activated Carbon, Heavy Metal Ions, Isotherm, Isotherm Models, Langmuir, Lead, Metal-Ions, Natural Organic-Matter, Pb(II), pH, Removal, Single-Walled Carbon Nanotube, Sorption, Thermodynamic, Thermodynamic Functions, Thermodynamics, Walled Carbon Nanotubes, Water

# Title: Functional Ecology

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Publisher Address: PO Box 88, Osney Mead, Oxford OX2 0NE, Oxon, England

Subject Categories:

Ecology: Impact Factor

Jones, D.T. and Hopkin, S.P. (1996), Reproductive allocation in the terrestrial isopods porcellio scaber and oniscus asellus in a metal polluted environment. *Functional Ecology*, **10** (6), 741-750.

Full Text: [F\Fun Eco10, 741.pdf](F/Fun%20Eco10,%20741.pdf)

Abstract: Terrestrial isopods (woodlice) exposed to toxic concentrations of metals can suffer early mortality and reduced body size, suggesting that the cost of metal detoxification causes trade-offs in resource allocation. This study investigates whether woodlice from populations that persist in sites heavily polluted with metals have a level of reproductive success different from that of woodlice from less polluted sites. Two species of woodlice, Porcellio scaber Latreille and Oniscus asellus L., were collected from eight sites at different distances from an industrial smelting works at Avonmouth, England. The sites represented a continuum of concentrations of Zn, Cd, Pb and Cu in the woodlice, from background concentrations to a grossly contaminated site close to the smelter. Gravid females were reared in the laboratory until the release of the brood. For both species there was no significant difference among sites in the number of live offspring per adult mass, the degree of brood-pouch mortality in affected adults, or the reproductive allocation. Significant differences were found among sites in the proportion of adults experiencing some degree of brood-pouch mortality and in the mean dry mass of offspring per adult mass. However, these differences could not be attributed to contamination by metals. Females of both species that survive to reproduce in the most polluted sites around the smelter show no evidence of detrimental effects on reproduction. However, high concentrations of Zn at these sites causes early mortality of woodlice and therefore reduces the size of the breeding population.

# Title: Functional Manufacturing Technologies and Ceeusro I

Full Journal Title: Functional Manufacturing Technologies and Ceeusro I

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: Impact Factor

? Wang, Z., Zhang, L.S. and Jing, Z.Q. (2010), Study the Adsorption of Phenol on Attapulgite-zeolite Nano-structure Adsorbent from Aqueous Solution. *Functional Manufacturing Technologies and Ceeusro I*, **426-427**, 118-121.

Abstract: Attapulgite-zeolite composite nano-structure adsorbent was manufactured using natural attapulgite and zeolite. The obtained adsorbent was characterized by scanning electron microscope, energy dispersive X-ray spectrometer and mercury porosimeter. After elementary characterization of this adsorbent, batch tests were carried out to examine its removal mechanism of phenol. The influence of pH, contact time and initial phenol concentration were investigated. The pH variation studies showed that the optimum pH for adsorption of phenol was found to be 7. Adsorption equilibrium attained within 1 h time. The adsorption process followed pseudo-second-order kinetic model. Adsorption isotherm studies showed that Langmuir model fitted the experimental data better than Freundlich model. The attapulgite-zeolite composite nano-structure adsorbent in this study shows very good promise for practical applicability of phenol removal from aqueous solution.

Keywords: Adsorbent, Adsorption, Adsorption Isotherm, Attapulgite, Composite Nano-Structure Adsorbent, Equilibrium, Isotherm, Kinetic, Kinetics, Langmuir, Mechanism, Phenol, Sepiolite, Sorption, Zeolite

# Title: Functional Materials and Devices Materials Science Forum

Full Journal Title: Functional Materials and Devices Materials Science Forum

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: Impact Factor

? Hanafiah, M.A.K.M., Shafiei, S., Harun, M.K. and Yahya, M.Z.A. (2006), Kinetic and thermodynamic study of Cd2+ adsorption onto rubber tree (Hevea Brasiliensis) leaf powder. *Functional Materials and Devices Materials Science Forum*, **517**, 217-221.

Abstract: A batch adsorption system was applied to study the adsorption of Cd2+ ions from aqueous solution by Hevea Brasiliensis, HB leaf powder. The adsorption capacities and rates of Cd2+ ions onto HB leaf powder were evaluated. Langmuir and Freundlich models were applied to describe the isotherms and isotherms constants. Equilibrium data agreed well with the Freundlich model. The kinetic experimental data correlated well with the pseudo-second-order kinetic model, indicating that the chemical sorption was the rate-limiting step.

Keywords: Hevea Brasiliensis (HB), Cd2+, Chemical Sorption, Sorption, Ions

# Title: Functions of Language

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ISO Abbreviated Title:

JCR Abbreviated Title:

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Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lee, S.H. (2010), Attribution in high-and low-graded persuasive essays by tertiary students. *Functions of Language*, **17** (2), 181-206.

Abstract: This paper explores cross-cultural and grade-based differences in the use of intertextual resources in persuasive essays written by tertiary students. Expressions of explicit intertextuality are analysed using the model of Attribution, an element of the ENGAGEMENT system formulated within the interpersonal metafunction of Systemic Functional Linguistics. The text analysis, supported by interview results, reveals that while there are some differences in the overall use of Attribution between native English speaking and ESL students, the most significant grade-based differences were found in expressions of Attribution and in the Attribution patterns adopted in the presentation of intersubjective claims supported by evidence. The differences identified are interpreted in terms of dialogic literacy perspectives. Pedagogical implications are discussed in terms of the contribution of the differences to the success of the essays, and the need to support academic literacy.

Keywords: Academic Literacy, Essays, Literacy, Plagiarism, Students

# Title: Fundamental and Applied Biohydeometallurgy

Elsevier, Amsterdam

? Townsley, C.C., Ross, I.S. and Atkins, A.S. (1986), Biorecovery of metallic residues from various industrial effluents using filamentous fungi. in *Fundamental and Applied Biohydeometallurgy*, (Edited by Lawrence, R.W., Branion, R.M.R. and Ebner, H.G.), Elsevier, Amsterdam, 279.

# Title: Fundamental and Applied Toxicology

Title: Fundamental and Applied Toxicology: Official Journal of the Society of Toxicology

Full Journal Title: [Fundamental and Applied Toxicology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6803&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=9e24fd4aca0192dc76de07f359f3ecab)

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Subject Categories:

Toxicology: Impact Factor

Pennanen, S., Tuovinen, K., Huuskonen, H. and Komulainen, H. (1992), The developmental toxicity of 2-ethylhexanoic acid in Wistar rats. *Fundamental and Applied Toxicology*, **19** (4), 505-511.

Full Text: [F\Fun App Tox19, 505.pdf](F/Fun%20App%20Tox19,%20505.pdf)

Abstract: The developmental toxicity of 2-ethylhexanoic acid (2-EHA), a wood preservative and a mammalian metabolite of di-(2-ethylhexyl) phthalate was examined in Wistar rats (20-21 pregnant females/dose). Mated animals were exposed to 2-EHA in their drinking water at doses of 100, 300, or 600 mg/kg/day on Days 6-19 of gestation. Control animals received vehicle water. The fetuses were examined (on Gestational Day 20) for external, visceral, and skeletal malformations and variations. 2-EHA was marginally toxic to the dams at 600 mg/kg, but not at lower doses, since the mean near term body weight was reduced by 11%. This dose level was also slightly fetotoxic as indicated by a 5 to 8% decrease in the mean fetal body weight both in males and females. No treatment-related effects were observed in the number of implantations or live fetuses. At doses of 100 mg/kg and above, 2-EHA caused skeletal malformations (clubfoot, absence of fibula, polydactyly), while the development of visceral tissues was less affected. The number of affected fetuses increased in a dose-dependent way (4.9, 8.9, and 15.3% of treated offspring at 100, 300, and 600 mg/kg/day, respectively, vs 2.4% control). These results indicate that 2-EHA is teratogenic in rats already at doses which are not yet maternally toxic. The skeleton appears to be the main target of 2-EHA in developing rats.

Keywords: Valproic Acid, Species-Differences, Weak Acids, Mice, Di-(2-ethylhexyl)Phthalate, Pharmacokinetics, Teratogenicity, Phthalate, Metabolism, Esters

Houben, G.F., Penninks, A.H., Seinen, W., Vos, J.G. and van Loveren, H. (1993), Immunotoxic effects of the color additive caramel color III: Immune function studies in rats. *Fundamental and Applied Toxicology*, **20** (1), 30-37.

Full Text: [F\Fun App Tox20, 30.pdf](F/Fun%20App%20Tox20,%2030.pdf)

Abstract: Administration of the color additive caramel color III (AC) may cause a reduction in total white blood cell counts in rats due to reduced lymphocyte counts. Beside lymphopenia, several other effects in rat have been described. The effects are caused by the imidazole derivative 2-acetyl-4 (5)-(1),2,3, 4-tetrahydroxybutyl)imidazole (THI) and occur in rats fed a diet low in vitamin B6. In the present paper, immune function studies on AC and THI with rats fed a diet low, but not deficient in vitamin B6 are presented and discussed. Rats were exposed to 0.4 or 4% AC or to 5.72 ppm THI in drinking water during and for 28 days prior to the start of immune function assays. Resistance to Trichinella spiralis was examined in an oral infection model and clearance of *Listeria* monocytogenes upon an intravenous infection was studied. In addition, natural cell-mediated cytotoxicity of splenic and nonadherent peritoneal cells and the antibody response to sheep red blood cells were studied. From the results it is concluded that exposure of rats to AC or THI influenced various immune function parameters. Thymus-dependent immunity was suppressed, while parameters of the nonspecific resistance were also affected, as shown by a decreased natural cell-mediated cytotoxicity in the spleen and an enhanced clearance of L. monocytogenes.

Pennanen, S., Tuovinen, K., Huuskonen, H., Kosma, V.M. and Komulainen, H. (1993), Effects of 2-ethylhexanoic acid on reproduction and postnatal development in Wistar rats. *Fundamental and Applied Toxicology*, **21** (2), 204-212.

Full Text: [F\Fun App Tox21, 104.pdf](F/Fun%20App%20Tox21,%20104.pdf)

Abstract: Reproductive toxicity of 2-ethylhexanoic acid (2-EHA) was studied in Wistar rats. The animals (24 animals per sex per group) were given 2-EHA as a sodium salt in drinking water at daily doses of 100, 300, or 600 mg/kg. Control animals received plain water. Male rats were exposed to 2-EHA for 10 weeks and females for 2 weeks prior to mating, both sexes during the mating period and females during the entire gestation and lactation period. 2-EHA caused a slight but dose-dependent decrease in fertility; time to mating increased at 300 and 600 mg/kg and even total infertility ensued. 2-EHA slightly decreased sperm quality in males. The spermatozoa were significantly less motile at 100 and 600 mg/kg and abnormal sperm occurred more frequently at the two highest dose levels. The average litter size was reduced by 16% in the dose group receiving 600 mg/kg. The birth weights of the pups were unaffected but the body weight gain was transiently slower during lactation at 600 mg/kg. Several pups appeared abnormal (kinky tail, lethargic, slightly paralyzed legs) and the physical development assessed by several landmarks (opening of eyes, eruption of teeth, hair growth) and reflexes (grip reflex, cliff avoidance) was delayed at 300 and 600 mg/kg. In another experiment, a single dose of 600 mg/kg 2-EHA was given to pregnant females by gavage on Gestational Day 4, 5, 6, or 7 and the number of implantations were counted on Gestational Day 10. Administration on Day 6 decreased the number of implantations and caused resorptions. (ABSTRACT TRUNCATED AT 250 WORDS)

Bull, R.J., Birnbaum, L.S., Cantor, K.P., Rose, J.B., Butterworth, B.E., Pegram, R. and Tuomisto, J. (1995), Water chlorination: Essential process or cancer hazard? *Fundamental and Applied Toxicology*, **28** (2), 155-166.

Full Text: [F\Fun App Tox28, 155.pdf](F/Fun%20App%20Tox28,%20155.pdf)

Abstract: Chlorine has been successfully used for the control of waterborne infectious disease for nearly a century. In the 1970s it was found that chlorine reacted with natural organic matter present in surface waters to produce disinfection by-products (DBP). Concern focused initially on the trihalomethanes (THM), but a wide variety of DBPs are now known to result from chlorination. Chlorination of drinking water has been one of the most effective public health measures ever undertaken. There are a number of alternatives to chlorination that are in active use in many parts of the world, but the risks associated with their by-products are even less well established than for chlorination. Moreover, the use of these alternatives vary in their effectiveness and some require greater sophistication in their application. This can mean less protection to public health as a result of inappropriate application and control. Therefore, hazards associated with the use of such a clearly beneficial process as chlorination must be carefully considered not only in an absolute sense, but also in the context of alternative approaches for producing a safe drinking water. The key question is whether the hazards associated with by-products have been sufficiently well established to warrant regulations that will undoubtedly have both positive and negative impacts on the public health. This symposium examined the toxicological and epidemiological data on chemical hazards associated with chlorination and attempted to measure this hazard against competing microbial risks. The first presentation discussed the available analytical epidemiological studies. A second presentation dealt with the importance of chlorination to the prevention of waterborne infectious disease. Pharmacokinetic, mechanistic, and modeling information on the prototypical DBP, chloroform, were discussed and contrasted with data on brominated THMs to determine if it was scientifically appropriate to regulate THMs as a single toxicological class. The fifth presentation dealt with the carcinogenic properties of a potent mutagen that is produced by chlorination. The final presentation discussed the haloacetates, carcinogenic DBPs whose concentrations approach and occasionally exceed those of the THMs. Clearly, there is a need to carefully weigh these different types and sometimes competing risks when considering the delivery of drinking water to ever-increasing populations for which there are finite sources of fresh water.

Abernathy, C.O., Chappell, W.R., Meek, M.E., Gibb, H. and Guo, H.R. (1996), Is ingested inorganic arsenic a “Threshold” Carcinogen? *Fundamental and Applied Toxicology*, **29** (2), 168-175.

Full Text: [F\Fun App Tox29, 168.pdf](F/Fun%20App%20Tox29,%20168.pdf)

Abstract: Ingested inorganic arsenic (As) is known to be a human carcinogen. An intriguing question is whether there is a threshold for the carcinogenic effects of As, i.e., is there a level below which it does not induce the development of cancer(s)? This Roundtable will discuss the United States Environmental Protection Agency’s As risk assessment using the Taiwan data from different viewpoints. It will also consider the hypothesis that there is a threshold for As and data for or against this hypothesis. For example, some scientists believe that epidemiological data cannot answer this question, while others feel that different study designs and larger sampling will provide adequate data. Reasons for each position are given. This Roundtable discussion demonstrates the controversy surrounding the use of the Taiwan data for risk assessment. (C) 1996 Society of Toxicology

Keywords: Disease Endemic Area, Well Water, Malignant Neoplasms, Drinking-Water, Skin-Cancer, Toxicity, Exposure, Bladder, Taiwan

# Title: Fundamental & Clinical Pharmacology

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Aronson, J.K., Derry, S. and Loke, Y.K. (2002), Adverse drug reactions: Keeping up to date. *Fundamental & Clinical Pharmacology*, **16** (1), 49-56.

Full Text: [2002\Fun Cli Pha16, 49.pdf](2002/Fun%20Cli%20Pha16,%2049.pdf)

Abstract: The amount of published literature on adverse drug reactions is overwhelming; for example, the serial publication Side Effects of Drugs Annual lists and critically discusses over 3000 references each year. As a group, pharmacotherapeutics journals publish more papers on adverse drug reactions than journals that cover other fields, but even so they publish a minority of the total number of papers, and no single journal or group of journals can be highlighted as being a frequent source of primary information. Non-specialists must therefore rely on secondary literature (reviews) and tertiary literature (critical summaries) for information. Most of the primary published literature is in the form of anecdotal reports (30%) and formal studies or randomized controlled trials (35%). The anecdotal reports vary in quality; a new serial publication devoted to this type of article would bring some of the literature together and would improve the quality of reporting. Although many of the randomized controlled trials are of good quality and large enough to reveal benefit, most are too small to provide robust information about adverse drug reactions. Systematic reviews are too few in number (only 1.25% of publications on adverse drug reactions cited in Side Effects of Drugs Annual); more are needed.

Keywords: Adverse Drug Reactions, Drug, Information, Journal, Journals, Literature, Papers, Primary, Publication, Publications, Quality, Quality of, Randomized, Randomized Controlled Trials, Reporting, Reviews, Small, Source

? Robert, C., Wilson, C.S., Donnadieu, S., Gaudy, J.F. and Arreto, C.D. (2008), Snapshot of the European Union contribution to pain research: A 2006-bibliometric study. *Fundamental & Clinical Pharmacology*, **22** (S1), 17.

Full Text: [2008\Fun Cli Pha22, 17.pdf](2008/Fun%20Cli%20Pha22,%2017.pdf)

Keywords: European Union, Pain, Research

? Robert, C., Saenz-Feijoo, R., Gaudy, J.F. and Arreto, C.D. (2009), Quantitative analysis of the scientific literature on acetaminophen in medicine and biology: A 2003-2005 study. *Fundamental & Clinical Pharmacology*, **23** (2), 159-168.

Full Text: [2009\Fun Cli Pha23, 159.pdf](2009/Fun%20Cli%20Pha23,%20159.pdf)

Abstract: This study quantifies the utilization of acetaminophen in life sciences and clinical medicine using bibliometric indicators. A total of 1626 documents involving acetaminophen published by 74 countries during 2003-2005 in the Thompson-Scientific Life sciences and Clinical Medicine collections were identified and analyzed. The USA leads in the number of publications followed by the UK, and industrialized countries, including France, Japan and Germany; the presence of countries such as China, India and Turkey among the top 15 countries deserves to be noticed. The European Union stands as a comparable contributor to the USA, both in terms of number of publications and in terms of profile of papers distributed among subcategories of Life Sciences and Clinical Medicine disciplines. All documents were published in 539 different journals. The most prolific journals were related to pharmacology and/or pharmaceutics. All aspects of acetaminophen (chemistry, pharmacokinetics, metabolism, etc.) were studied with primary interest for therapeutic use (42%) and adverse effects (28%) comprising a large part of publications focusing on acetaminophen hepatotoxicity. This quantitative overview provides as to the interest of the scientific community in this analgesic and completes the various review documents that regularly appear in the scientific literature.

Keywords: Acetaminophen, Acute Liver-Failure, Adverse Effects, Analgesic, Analgesics, Analysis, Bibliometric, Bibliometric Analysis, Bibliometric Indicators, Bibliometrics, Biology, Care, Chemistry, China, Clinical, Community, Disciplines, Distributed, Effects, European Union, European-Union, France, Germany, Hepatotoxicity, India, Indicators, Japan, Journals, Life, Life Sciences, Literature, Management, Medicine, Metabolism, Number of Publications, Osteoarthritis, Pain, Papers, Paracetamol, Pharmacokinetics, Pharmacology, Presence, Primary, Publications, Research Profile, Review, Sciences, Scientific Literature, Therapeutic, Turkey, UK, United-States, USA, Utilization

# Title: Fundamentals of Adsorption

Elsevier, Amsterdam, London, New York, Tokyo

Chiang, A.S.T., Lin, K.S. and Fun, L.Y. (1992), Adsorption of multicomponent aromatics on Y zeolite and silicalite. in *Fundamentals of Adsorption Proceedings of the Fourth International Conference on Fundamentals of Adsorption*, (Edited by Suzuki, M.), Elsevier, Amsterdam, London, New York, Tokyo, 81-88.

Fukuchi, K., Kobuchi, S. and Arai, Y. (1992), Measurement and prediction of adsorption equilibria of quaternary organic solues from dilute aqueous solutions on activated carbon. in *Fundamentals of Adsorption Proceedings of the Fourth International Conference on Fundamentals of Adsorption*, (Edited by Suzuki, M.), Elsevier, Amsterdam, London, New York, Tokyo, 177-184.

? Do, D.D., Hu, X., Gray, P. and Mayfield, P. (1993), Adsorption and desorption dynamics of hydrocarbons, SO2 and CO2 onto activated carbon: Rate mechanisms. *Fundamentals of Adsorption*, (Edited by Suzuki, M.), Kodansha, Tokyo, 145-152.

Suzuki, M. (1996), Application of adsorption technology for environmental control. in *Fundamentals of Adsorption Proceedings of the Fifth International Conference on Fundamentals of Adsorption*, (Edited by LeVan, M.D.), Kluwer Academic Publishers, Boston, Dordrecht, London, 3-14.

Bharat, G.K., Yenkie, M.K.N. and Natarajan, G.S. (1996), Influence of physico-chemical characteristics of adsorbent and adsorbate on competitive adsorption equilibrium and kinetics. in *Fundamentals of Adsorption Proceedings of the Fifth International Conference on Fundamentals of Adsorption*, (Edited by LeVan, M.D.), Kluwer Academic Publishers, Boston, Dordrecht, London, 91-99.

Calleja, G., Pau, J., Pérez, P. and Calles, J.A. (1996), Binary and ternary adsorption equilibria at high pressure on molecular sieves. in *Fundamentals of Adsorption Proceedings of the Fifth International Conference on Fundamentals of Adsorption*, (Edited by LeVan, M.D.), Kluwer Academic Publishers, Boston, Dordrecht, London, 147-154.

? Hu, X. and Do, D.D. (1996), Effect of pore size distribution on the prediction of multicomponent adsorption equilibria. in *Fundamentals of Adsorption Proceedings of the Fifth International Conference on Fundamentals of Adsorption*, (Edited by LeVan, M.D.), Kluwer Academic Publishers, Boston, Dordrecht, London, 385-392.

? Hu, X. and Do, D.D. (1996), Sorption kinetics of gases in heterogeneous solids. in *Fundamentals of Adsorption Proceedings of the Fifth International Conference on Fundamentals of Adsorption*, (Edited by LeVan, M.D.), Kluwer Academic Publishers, Boston, Dordrecht, London, 393-400.

Staudt, R., Dreisbach, F. and Keller, J.U. (1996), Generalized isotherms for mono-and multicomponet adsorption. in *Fundamentals of Adsorption Proceedings of the Fifth International Conference on Fundamentals of Adsorption*, (Edited by LeVan, M.D.), Kluwer Academic Publishers, Boston, Dordrecht, London, 865-872.

# Title: Fusion Engineering and Design

Full Journal Title: [Fusion Engineering and Design](http://www.sciencedirect.com/science/journal/09203796)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0920-3796

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Badawi, A. (2008), Determination of the order of surface reactions in Li2O. *Fusion Engineering and Design*, **83** (1), 39-44.

Full Text: [2008\Fus Eng Des83, 39.pdf](2008/Fus%20Eng%20Des83,%2039.pdf)

Abstract: An analysis of the different surface reactions taking place in Li2O was performed in order to determine whether adsorption and desorption of tritium are first or second order reactions. Data from BEATRIX-II Phase I and CRITIC-I were used as basis for calculations. It was found that only second order adsorption/desorption on the surface of Li2O can predict the tritium behavior observed experimentally. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Analysis, Desorption, Inventory, Li2O, Lithium Ceramics, Model, Surface Processes, Transport, Tritium Release

# Title: Future Generation Computer Systems

Full Journal Title: [Future Generation Computer Systems](http://www.sciencedirect.com/science/journal/0167739X)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Huang, Z.X. and Qiu, Y.H. (2010), A multiple-perspective approach to constructing and aggregating Citation Semantic Link Network. *Future Generation Computer Systems*, **26** (3), 400-407.

Full Text: [2010\Fut Gen Com Sys26, 400.pdf](2010/Fut%20Gen%20Com%20Sys26,%20400.pdf)

Abstract: Various kinds of semantic relationships exist among scientific literatures which worth to be explored. This paper proposes a Citation Semantic Link Network (C-SLN) to describe the semantic information over the literature citation networks. A framework of the construction of C-SLN is represented by integrating several NLP methods. The methods of aggregating a C-SLN and the algorithms of discovering opinion communities in a C-SLN are also discussed. Based on a multi-perspective exploration on the C-SLN, we can effectively find articles of high importance, aggregate the function of citations and detect opinion communities among scientific documents.

Keywords: Semantic Link Network, Opinion Mining, Sentiment Analysis, Community Identification

# Title: Futures

Full Journal Title: Futures

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Niiniluoto, I. (2001), Futures studies: science or art? *Futures*, **33** (5), 371-377.

Full Text: [F\Futures33, 371.pdf](F/Futures33,%20371.pdf)

Abstract: In this paper, I make an attempt to clarify the nature of futures studies with the distinction between descriptive science and design science. Instead of the dichotomy between basic and applied research, this distinction seems to be helpful in the task of understanding the nature of many new “practical” and “professional” disciplines. It also serves to clarify the question raised in my title: the opposition between “science” and “art” is not here the one between natural science and the humanities, but rather the Latin distinction between *scientia* (as a form of knowledge) and *ars* (as a form of skill). As *ars* is a translation of the Greek term *techne*, the question can be reformulated as the query whether futures studies is a science or a form of social technology.

# Title: Fuzzy Sets and Systems

Full Journal Title: [Fuzzy Sets and Systems](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5637&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=4a54757212ce8b680b88ff678ef9befb)

ISO Abbreviated Title: Fuzzy Sets Syst.

JCR Abbreviated Title: Fuzzy Set Syst

ISSN: 0165-0114

Issues/Year: 24

Journal Country/Territory: Netherlands

Language: English

Publisher: Elsevier Science BV

Publisher Address: PO Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Computer Science, Theory & Methods Mathematics, Applied Statistics & Probability: Impact Factor

Lee, C.S. and Wen, C.G. (1996), River assimilative capacity analysis via fuzzy linear programming. *Fuzzy Sets and Systems*, **79** (2), 191-201.

Full Text: [F\Fuz Set Sys79, 191.pdf](F/Fuz%20Set%20Sys79,%20191.pdf)

Abstract: The assimilative capacity of a river, that is the so-called allowable pollution loading in a river basin, is a problem of water quality management involving optimization subject to constraints of standards of water quality and their models. This study is an up-to-date evaluation of assimilative capacity in a river basin with consideration of the imprecision of the water environment, i.e. water quality and river flowrate. The purposes of this study, in comparison with crisp linear programming (LP), is to select and evaluate four well-known fuzzy linear programming (FLP) approaches and to apply them to the assimilative capacity of a river basin. Tou-Chen River Basin in Taiwan. The results show the models of assimilative capacity of FLP are better than those of a crisp one, which reflect the flexible characteristics of the former approaches. The emphases in this paper are on how to formulate problems of assimilative capacity of a river according to FLP models and on how to solve them according to algorithms of crisp LP. Furthermore, the results of river analysis serve as criteria for regulatory agencies to implement the control of pollution sources and to accomplish finally the sustainable use of water resources.

Lee, C.S. and Wen, C.G. (1997), Fuzzy goal programming approach for water quality management in a river Basin. *Fuzzy Sets and Systems*, **89** (2), 181-192.

Full Text: [F\Fuz Set Sys89, 181.pdf](F/Fuz%20Set%20Sys89,%20181.pdf)

Abstract: Two fuzzy goal programming (FGP) approaches are applied to water quality management in a river basin for solving multiobjective optimization problems involving vague and imprecise information. Several FGP models, including equal weight and unequal weight, nonpreemptive priority and preemptive priority, are proposed to assist water quality management involving multiple conflicting goals. Optimal water quality management involves obtaining optimal analysis of assimilative capacity (also referred to as allowable pollution loading) and treatment cost of wastewater based on models and standards of water quality, as well as an equitable removal of wastewater in a river basin. Two FGP schemes that are capable of maximizing achieved membership function and minimizing the deviation from a set of preferred target assimilative capacity and treatment cost are considered. Moreover, methodologies using two fuzzy decision theories in FGP approaches, i.e., max-min operator and compensatory operator, are also proposed. Those methodologies are illustrated in a case study of multiobjective water quality management in the Tou-Chen River Basin, Taiwan. The case study demonstrates the capability of the two FGP approaches based on variable fuzzy decision theories to work suitably in water quality management in a river basin.

? van Wezenbeek, W. (1999), A selection of the most cited papers in *Fuzzy Sets and Systems* - Publisher’s note. *Fuzzy Sets and Systems*, **100** (S1), IX.

Full Text: [1999\Fuz Set Sys100, IX.pdf](1999/Fuz%20Set%20Sys100,%20IX.pdf)

Keywords: Papers, S

# Title: Gaceta Sanitaria

Full Journal Title: [Gaceta Sanitaria](http://www.sciencedirect.com/science/journal/02139111)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Vilagut, G., Ferrer, M., Rajmil, L., Rebollo, P., Permanyer-Miralda, G., Quintana, J.M., Santed, R., Valderas, J.M., Ribera, A., Domingo-Salvany, A. and Alonso, J. (2005), The Spanish version of the Short Form 36 Health Survey: A decade of experience and new developments. *Gaceta Sanitaria*, **19** (2), 135-150.

Full Text: [2005\Gac San19, 135.pdf](2005/Gac%20San19,%20135.pdf)

Abstract: OBJECTIVE: The Short Form-36 Health Survey (SF-36) is one of the most widely used and evaluated generic health-related quality of life (HRQL) questionnaires. After almost a decade of use in Spain, the present article critically reviews the content and metric properties of the Spanish version, as well as its new developments. METHODS: A review of indexed articles that used the Spanish version of the SF-36 was performed in Medline (PubMed), the Spanish bibliographic databases IBECS and IME. Articles that provided information on the measurement model, reliability, validity, and responsiveness to change of the instrument were selected. RESULTS: Seventy-nine articles were found, of which 17 evaluated the metric characteristics of the questionnaire. The reliability of the SF-36 scales was higher than the suggested standard (Cronbach’s alpha) of 0.7 in 96% of the evaluations. Grouped evaluations obtained by meta-analysis were higher than 0.7 in all cases. The SF-36 showed good discrimination among severity groups, moderate correlations with clinical indicators, and high correlations with other HRQL instruments. Moreover, questionnaire scores predicted mortality and were able to detect improvement due to therapeutic interventions such as coronary angioplasty, benign prostatic hyperplasia surgery, and non-invasive positive pressure home ventilation. The new developments (norm-based scoring, version 2, the SF-12 and SF-8) improved both the metric properties and interpretation of the questionnaire. CONCLUSIONS: The Spanish version of the SF-36 and its recently developed versions is a suitable instrument for use in medical research, as well as in clinical practice.

? Belinchón, I., Ramos, J.M. and Bellver, V. (2007), Scientific production in bioethics in Spain through MEDLINE. *Gaceta Sanitaria*, **21** (5), 408-411.

Full Text: [2007\Gac San21, 408.pdf](2007/Gac%20San21,%20408.pdf)

Abstract: Objective: To describe Spain’s scientific production in the field of bioethics from 1966 to 2003. Methods: Manuscripts published by Spanish authors between 1966 and 2003 and containing key word references to bioethics, ethics, and 22 other related terms were retrieved from the Medline database. Results: 858 documents were selected: 78 (9.1%) were published between 1966 and 1983,163 (19%) between 1984 and 1993, and 617 (71.9%) between 1994 and 2003. The main subject areas treated were laws and rights (15.4%) and research and ethics committees (13.1%). The last of these periods witnessed an increase in publications on genetics and human cloning and a decrease in those treating abortion. Institutional affiliations referred mainly to universities (38.9%) and hospitals (38.5%). Conclusions: There was a progressive increase in the number of scientific publications on bioethics by Spanish authors during the study period.

Keywords: Authors, Bibliometric Indicators, Bibliometrics, Bioethics, Biomedicine, Ethics, Health-Sciences, Publications, Research, Spain

? Vives-Cases, C., Gil-González, D., Carrasco-Portiño, M. and Álvarez-Dardet, C. (2007), Systematic review of studies on the socioeconomic status of men who batter their intimate partners. *Gaceta Sanitaria*, **21** (5), 425-430.

Full Text: [2007\Gac San21, 425.pdf](2007/Gac%20San21,%20425.pdf)

Abstract: Background: Despite the visibility of intimate partner violence against women in low socioeconomic groups, the association of low socioeconomic status and violent behavior is unclear. We performed a systematic review of the empirical evidence on the causal role of batterers’ socioeconomic status in this phenomenon. Methods: We performed a systematic review, using the following databases: Eric (1966-2004), Sociological Abstracts (1963-2005), Science Citation Index (1945-2005), Social Science Citation Index (1956-2005), Medline through Pubmed (1966-2005), Social Service Abstracts (1980-2005), Lilacs (1982-2005) and Psycinfo (1972-2005). We included empirical papers with aims or hypothesis related to the causal relation between low socioeconomic status (employment, education, income) in men and IPV. Results: A total of 251 studies were identified, but only 10 met the inclusion criteria. There was one cohort study, one case-control study, one ecological study and one study based on a series of cases. Two studies calculated odds ratio in the analyses. One of these studies reported an odds ratio of 1.4 (95% Cl, 1.1-1.9) with unemployment and the other study showed no significant positive associations with this factor or with low income or education. Conclusions: More information and better quality data are required to establish conclusive results on the causal role of the socioeconomic status of men who batter their intimate partners. The empirical evidence on the relationship between violent male behavior against.

Keywords: Batterers, Citation, Databases, Domestic Violence, Domestic Violence, Papers, Prevalence, Socioeconomic Status, Systematic Review, Visibility

? Espallargues, M., de Sola-Morales, O., Moharra, M., Tebe, C. and Pons, J.M.V. (2008), The opinion of practitioners and internists on the impact of health technologies introduced in the last 25 years. *Gaceta Sanitaria*, **22** (1), 20-28.

Full Text: [2008\Gac San22, 20.pdf](2008/Gac%20San22,%2020.pdf)

Abstract: Objectives: To identify the most important health technologies (HT) introduced in the last 25 years and their impact on patients’ health according to hospital internists and generalist physicians. Methods: We performed a cross-sectional descriptive study. The 30 HT receiving the highest number of bibliometric citations in the previous 25 years (1977-2002) in generalist and primary care journals were selected. To assess the health impact of HT, a postal survey of the medical heads of 46 hospitals with 100-400 beds and an equal random sample of the directors of primary care centers was carried out in Catalonia, Spain. The professionals surveyed were asked to consider how adverse the effect on their patients’ health would be if each of the HT on the list were unavailable. The personal and professional characteristics of the participating physicians were also collected. Results: A total of 49 physicians answered the survey (53%). Instrumental and diagnostic technologies were considered to have the greatest impact on health, diagnostic imaging being the most highly scored. The lowest impact would be caused if some drugs were not available, hypoglycemic agents receiving the lowest scores. Although assessments were similar regardless of professional/practice characteristics (r >= 0.7), some differences in diagnostic HT were observed, as well as variability in the participants’ responses. Conclusions: Assessment of the impact of HT from the physicians’ point of view varied. However, diagnostic and instrumental-visual technologies seem to be more highly rated than pharmacological innovations. Variability in responses was more closely related to the physicians’ personal characteristics than to practice setting.

Keywords: Bibliometric, Citations, Cost-Effectiveness, General Practitioners and Internists, Health Impact, Health Technologies, Hospital, Impact, Interventions, Journals, Medical, Professional, Spain, Survey

? Davó, M.C., Gil-González, D., Vives-Cases, C., Álvarez-Dardet, C. and La Parra, D. (2008), Research on health education and promotion in Spanish nursery and primary schools. A systematic review of studies published between 1995 and 2005. *Gaceta Sanitaria*, **22** (1), 58-64.

Full Text: [2008\Gac San22, 58.pdf](2008/Gac%20San22,%2058.pdf)

Abstract: Objective: To identify the characteristics of health education and promotion interventions in Spanish nursery and primary schools, through the studies published in scientific journals. Method: We performed a review of studies on health education and promotion interventions in Spanish nursery and primary schools, published from 1995 to 2005. The information sources were Medline (through Pubmed), Cinhal, Eric, Sociological Abstracts, Science Citation Index, and Isooc (CSIC). Studies performed in Spanish nursery and primary schools that incorporated health education and promotion interventions were selected. The studies’ general features, main subject and aims, methodology, the kind of intervention described, and compliance with the criteria for Healthy Schools were analyzed. Results: Only 26 of the 346 articles identified met the inclusion criteria. Health education programs focussed more on disease prevention than on health promotion and only a few studies were performed in nursery and primary schools. The criteria for health promotion in schools were included in 5 articles (119.2%). The importance of health institutions (n = 7; 26.9%) and universities (n = 8; 30.8%) as promoters of programs was notable. The most frequent subject was smoking (n = 11; 42.3%). Conclusions: Teachers play a lesser role in health promotion in schools than health institutions in the implementation and dissemination of health programs. Research into health promotion in nursery and primary schools is scarce.

Keywords: Citation, Health Education, Health Promotion, Journals, Primary School, Review, Spain, Systematic Review

? Casado-Mejia, R., Ruiz-Arias, E. and Solano-Pares, A. (2009), Literature review of the family care provided by immigrant women. *Gaceta Sanitaria*, **23** (4), 335-341.

Full Text: 2009\Gac San23, 335.pdf

Abstract: Objective: To quantity and characterize the scientific production Oil the family care provided by immigrant women. Methods: A literature search was performed in April 2008 with no date limits in the main national and international databases: Web of Science, Current Contents Connect, ISI Proceedings, MEDLINE, CINAHL, PsycoInfo, EMBASE,IME, ISOC and CUIDEN. Summaries were reviewed by excluding those that did not relate to the subject of this Study and those that were not in English, French or Spanish. The references of all included articles were also reviewed to detect other relevant publications. Several variables were identified and analyzed: type of article, main topic, country of the first author. and year of publication. A content analysis was performed, using the topics as categories. Results: A total of 191 articles were retrieved and 178 were excluded. The 13 included articles analyzed differences in formal and informal care (2), determinant factors (4), epistemological needs (3), the benefits of this kind of care (5), the need for health education/training (4), the need for political/institutional Support (2), immigration and health (6), and the carer/cared for relationship (4). There were five non-systematic reviews, six descriptive studies, one qualitative Study and one experience. Two articles were published before 2002, eight between 2003-2005, and three between 2006-2008. Most of the Studies were performed in Spain (9/13). Conclusions: The scarcity of articles confirms that recruitment of immigrants as caregivers is a new and invisible reality. Most of these studies highlight the benefits of this type of care. There is no dominant pattern of topics and the methodology varies widely. The few analytical Studies may indicate that this topic is only beginning to be researched. Investigation into this form of care should be stimulated. (c) 2009 SESPAS. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Analysis, Author, Caregivers, Content Analysis, Databases, Dependence, Descriptive Studies, Family Care, Immigrant, Immigrant Caregivers, ISI, Literature, Literature Review, Methodology, Methods, Publication, Publications, Recruitment, Review, Science, Scientific Production, Spain, Topics, Web of Science, Women

? Peiró, S., Barber-Hueso, C., Rodríguez-Sánchez, Ó. and Cervera-Pérez, I. (2009), Distinguishing between “erroneous citation” and plagiarism. *Gaceta Sanitaria*, **23** (4), 352-353.

Full Text: [2009\Gac San23, 352.pdf](2009/Gac%20San23,%20352.pdf)

? Vioque, J., Ramos, J.M., Navarrete-Munoz, E.M. and De la Hera, M.G. (2010), Spanish scientific production in obesity research published in PubMed (1988-2007). *Gaceta Sanitaria*, **24** (3), 225-232.

Full Text: [2010\Gac San24, 225.pdf](2010/Gac%20San24,%20225.pdf)

Abstract: Objective: To analyse Spanish scientific research output related to obesity during a 20-year period from 1988 to 2007 into context with the European Union productivity Methods: The bibliometric study was based on research of the MEDLINE database in PubMed. Search terms were “obesity” appearing in MeSH. Linear regression was used to estimate trends in number of publications. Results: We retrieved 50,120 documents on obesity in the study period, and 1,407 were by Spanish authors (2.7% of the world production). Spain, accounting for 8.1% of scientific output in this area, was the fifth most productive country in the European Union; 932 (69.1%) of papers were published in English. The average yearly increase in publications was 15%, from 91 documents in the first five-year period to 702 in the last five-period. The most frequent specialty of first author was endocrinology (279 documents, or 22.8%), followed by physiology-nutrition-bromatology (203, or 16.6%), and biochemistry (161, or 13.2%). Journals publishing the largest numbers of papers on obesity were Medicina Clinica (83 or 6.1%), Obesity Surgery (79 or 5.8%), International journal of Obesity (73) and Nutricion Hospitalaria (59). The most productive regions in Spain were Cataluna (338 or 24.9%), Madrid (286 or 20.6%), and Navarra (159 or 11.7%). The most productive institutions were hospitals, with 708 titles (52.1%), followed by universities, with 521 (38.5%). Conclusions: Obesity research in Spain has increased over the last 20 years and accounted for a substantial proportion of European Union research in this field. Half of the papers by Spanish authors were published in international non-Spanish journals. Most of papers were carried out from hospital settings and universities. (C) 2009 SESPAS. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Bibliometric Analysis, Bibliometrics, Biomedicine, European-Union, Impact, Journals, Obesity, Output, Prevalence, Publications, Pubmed, Science-Citation-Index, Scientific Research, Spain

? Pereda, N. and Gallardo-Pujol, D. (2011), Neurobiological consequences of child sexual abuse: A systematic review. *Gaceta Sanitaria*, **25** (3), 233-239.

Abstract: Objective: The results of several studies suggest that there is a critical timeframe during development in which experiences of maltreatment and sexual abuse may lead to permanent or long-lasting neurobiological changes that particularly affect the hypothalamus-pituitary-adrenal axis response. The aim of the present study was to provide an updated review on the main neurobiological consequences of child sexual abuse. Methods: We selected articles published between January 1999 and January 2010 in English or Spanish that focused on the neurobiological consequences of child sexual abuse available through MEDLINE. Scopus and Web of Science. We also examined the references in published articles on the consequences of sexual victimization in childhood. Results: In this review we included 34 studies on neurobiological consequences, indicating different kinds of effects, namely: neuroendocrine, structural, functional and neuropsychological consequences, which affect a large number of victims. Conclusions: The existing body of work on the neurobiological consequences of maltreatment shows the need to consider maltreatment and child sexual abuse as health problems that affect different areas of victims’ lives, which would in turn favor the development of intervention and treatment programs that take these multiple effects into account. (C) 2010 SESPAS. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Anterior Cingulate, Borderline Personality-Disorder, Brain-Development, Child, Child Sexual Abuse, Cortisol, Development, Early Adverse Experiences, Functional, Hippocampal Volume, Impacts On Health, Intervention, Lead, Life Stress, Maltreated Children, Methods, Neurobiology, Posttraumatic-Stress-Disorder, Review, Science, Scopus, Systematic, Systematic Review, Treatment, Web of Science, Women

# Title: GAIA-Ecological Perspectives for Science and Society

Full Journal Title: [GAIA-Ecological Perspectives for Science and Society](http://www.ingentaconnect.com/content/oekom/gaia;jsessionid=703ej077ts742.alice)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Nentwich, M. (2009), Citation indices as distorting mirrors and challenges. *GAIA-Ecological Perspectives for Science and Society*, **18** (4), 281-283.

Full Text: [2009\GAI-Eco Per Sci Soc18, 281.pdf](2009/GAI-Eco%20Per%20Sci%20Soc18,%20281.pdf)

Keywords: Citation, Citation Analysis, Citation Indices, Impact Factor, Lingua Franca, Peer Evaluation, Scientometrics

? Schläpfer, F. (2010), How much does journal reputation tell us about the academic interest and relevance of economic research? Empirical analysis and implications for environmental economic research. *GAIA-Ecological Perspectives for Science and Society*, **19** (2), 140-145.

Full Text: [2010\GAI-Eco Per Sci Soc19, 140.pdf](2010/GAI-Eco%20Per%20Sci%20Soc19,%20140.pdf)

Abstract: Unlike in other disciplines, research output in economics is commonly measured based on the disciplinary reputation of the journals in which an author has published. Here, I examine how much output measures based on journal reputation tell us about the academic interest and relevance of economic papers as measured by frequency of citation. Using data from the 2008 Hondelsblatt ranking of economists in German speaking countries and interdisciplinary citation data from the Web of Science, I find that researcher scores based on journal reputation explain only about 30 percent of the variation (variance) in article citations. When the top 10 (20) percent of the researchers according to journal reputation scores are excluded, the percentage of explained variation in citation frequency drops to 8 (3) percent. Furthermore, using environmental economics journals as an example, I show that the traditional output measures strongly discourage applied and interdisciplinary economic research. The findings confirm that the traditional output measures provide incentives for narrow economic work even if that work is of interest to only few other researchers. Responsible hiring committees and funding institutions should take these problems seriously and re-consider existing standards in the evaluation of economic research.

Keywords: Citation Index, Citation Indexes, Incentives, Interdisciplinarity, Publication, Research Evaluation, Scientometrics

# Title: Gait & Posture

Full Journal Title: [Gait & Posture](http://www.sciencedirect.com/science/journal/09666362)

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Language:

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Subject Categories:

: Impact Factor

? Knudson, D.V. and Chow, J.W. (2008), North American perception of the prestige of biomechanics serials. *Gait & Posture*, **27** (4), 559-563.

Full Text: [2008\Gai Pos27, 559.pdf](2008/Gai%20Pos27,%20559.pdf)

Abstract: Biomechanics is a discipline with many applications and sub-areas so scholars often publish their work in journals in different subject categories used in the ISI Journal Citation Reports (JCR). It is not known whether the quality/prestige of journals in the discipline of biomechanics matches the ISI Impact Factor (IF) ratings reported in JCR. A survey of the membership of the American Society of Biomechanics (ASB) was conducted to rate the quality/prestige of typical papers in serials publishing biomechanics research on a five point scale. Seventy-eight of 610 ASB members responded to the survey. Mean journal prestige ratings were only weakly correlated (r = 0.35) with the IF for 2005, with serial ratings differing across the interest areas of the ASB respondents. It was concluded that IF’s should be used with caution in evaluating the prestige of journals publishing biomechanics research. Furthermore, investigators should consider interest area specific ratings within biomechanics when selecting journals for publishing their research. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: American, Bibliometrics, Biomechanics, Citation, Impact, Impact Factor, ISI, Journal, Journal Citation Reports, Journal Impact Factor, Journal Quality, Journals, North, Papers, Perception, Publishing, Quality, Research, Rights, Scale, Serials, Survey, Work

? Lord, S., Howe, T., Greenland, J., Simpson, L. and Rochester, L. (2011), Gait variability in older adults: A structured review of testing protocol and clinimetric properties. *Gait & Posture*, **34** (4), 443-450.

Full Text: [2011\Gai Pos34, 443.pdf](2011/Gai%20Pos34,%20443.pdf)

Abstract: Gait variability (stride-to-stride fluctuations) is used increasingly as a marker for gait performance and future mobility status, cognitive status, and falls. This structured review explicitly examined literature that reported on the reliability, validity and responsiveness of gait variability in older adults. We searched Medline, Embase, Web of Science, Scopus, CINAHL, PEDRO, Biomechanics, SportDiscus and PsycInfo databases. Two independent reviewers undertook data extraction, with adjudication by a third reviewer in cases of disagreement. Twenty-two full papers were screened and 10 met the predefined inclusion criteria, involving 1036 participants who were mainly community dwelling older adults in their 8th decade. A wide range of gait variability parameters, testing protocols and calculations of gait variability were reported. Reliability estimates varied, but were mostly fair to moderate. Concurrent validity was established for stance time variability and change estimates were reported for stance time and swing time. Standard of reporting was generally poor, with insufficient detail provided for aspects of measurement and testing protocols. Further research is required to standardise testing procedures and establish reliability, responsiveness and validity for confident use of gait variability as a robust measure. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adults, Biomechanics, Databases, Dementia, Dysfunction, Extraction, Falls, Gait, Literature, Measurement, Medline, Mild Cognitive Impairment, Older Adults, Papers, Parameters, Parkinsons-Disease, Pedro, Protocol, Reliability, Reliability, Research, Responsiveness, Review, Risk, Science, Scopus, Validity, Validity, Variability, Walking, Web of Science

# Title: Games and Economic Behavior

Full Journal Title: [Games and Economic Behavior](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6805&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=8d3c3b5711f89c17c46164e2750d5083)

ISO Abbreviated Title: Games Econ. Behav.

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ISSN: 0899-8256

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Journal Country/Territory: United States

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Publisher: Academic Press Inc Elsevier Science

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Economics: Impact Factor 0.887, 41/166 (2002)

# Title: Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms

[Gas adsorption Equilibria: Experimental Methods and Adsorptive Isotherms](http://books.google.com/books?id=ZxrHRZc4SDcC&printsec=frontcover&dq=GAS+ADSORPTION+EQUILIBRIA&source=bl&ots=Cqtg50Vf8Y&sig=VyVwl1zQrOIYifPi8Yq3wd3V_uE&hl=zh-TW&ei=nFpzS-jzOMuknQfC_dGTCw&sa=X&oi=book_result&ct=result&resnum=1&ved=0CAwQ6AEwAA#v=onepage&q=&f)

[Gas adsorption Equilibria index](2005/Gas%20adsorption%20Equilibria%20index.pdf)

Springer Science + Business Media, Boston

? Keller, J.U. and Staudt, R. (2005), Introduction. in *Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms*, Springer Science + Business Media, Boston, 1-15.

Full Text: [2005\Gas Ads Equ, 1.pdf](2005/Gas%20Ads%20Equ,%201.pdf)

? Keller, J.U. and Staudt, R. (2005), Chapter 1: Basic Concepts. in *Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms*, Springer Science + Business Media, Boston, 17-78.

Full Text: [2005\Gas Ads Equ, 17.pdf](2005/Gas%20Ads%20Equ,%2017.pdf)

? Keller, J.U. and Staudt, R. (2005), Chapter 2: Volumetry/Manometry. in *Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms*, Springer Science + Business Media, Boston, 79-116.

Full Text: [2005\Gas Ads Equ, 79.pdf](2005/Gas%20Ads%20Equ,%2079.pdf)

? Keller, J.U. and Staudt, R. (2005), Chapter 3: Gravimetry. in *Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms*, Springer Science + Business Media, Boston, 117-179.

Full Text: [2005\Gas Ads Equ, 117.pdf](2005/Gas%20Ads%20Equ,%20117.pdf)

? Keller, J.U. and Staudt, R. (2005), Chapter 4: Volumetric – Gravimetric Measurements. in *Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms*, Springer Science + Business Media, Boston, 181-234.

Full Text: [2005\Gas Ads Equ, 181.pdf](2005/Gas%20Ads%20Equ,%20181.pdf)

? Keller, J.U. and Staudt, R. (2005), Chapter 5: Oscillometry. in *Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms*, Springer Science + Business Media, Boston, 235-285.

Full Text: [2005\Gas Ads Equ, 235.pdf](2005/Gas%20Ads%20Equ,%20235.pdf)

? Keller, J.U. and Staudt, R. (2005), Chapter 6: Impedance Spectroscopy. in *Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms*, Springer Science + Business Media, Boston, 287-357.

Full Text: [2005\Gas Ads Equ, 287.pdf](2005/Gas%20Ads%20Equ,%20287.pdf)

? Keller, J.U. and Staudt, R. (2005), Chapter 7: Adsorption Isotherms. in *Gas Adsorption Equilibria: Experimental Methods and Adsorptive Isotherms*, Springer Science + Business Media, Boston, 359-413.

Full Text: [2005\Gas Ads Equ, 359.pdf](2005/Gas%20Ads%20Equ,%20359.pdf)

# Title: Gas Separation & Purification

Full Journal Title: [Gas Separation & Purification](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5244&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=b9c5e2caaca136dcdc06e1bba6c6a453)

ISO Abbreviated Title: Gas Sep. Purif.

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ISSN:

Issues/Year:

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Language:

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Subject Categories:

: Impact Factor

Kapoor, A. and Yang, R.T. (1991), Correlation of equilibrium adsorption data of condensible vapours on porous adsorbents. *Gas Separation & Purification*, **3** (4), 187-192.

Full Text: [G\Gas Sep Pur3, 187.pdf](G/Gas%20Sep%20Pur3,%20187.pdf)

Abstract: A modified Dubinin-Astakhov equation is presented which can describe the adsorption of condensible vapours on porous adsorbents. The equation has five parameters and can be used to correlate adsorption of types I, IV and V according to BDDT classification. It has a finite Henry’s Law limit, and is simpler than two other models available in the literature. It can also be used to obtain qualitative information about the energetic heterogeneity of the adsorbent.

Keywords: Adsorption, Porous Adsorbents, Equilibrium Data

Do, D.D., Hu, X. and Mayfield, P.L.J. (1991), Multicomponent adsorption of ethane, n-butane and n-pentane in activated carbon. *Gas Separation & Purification*, **5** (1), 35-48.

Full Text: [G\Gas Sep Pur5, 35.pdf](G/Gas%20Sep%20Pur5,%2035.pdf)

Abstract: A model of combined pore and surface diffusivity, with the surface diffusivity following the Darken-type relationship, is presented in this paper. The model is tested with single component adsorption data of ethane, n-butane and n-pentane onto activated carbon, and with binary adsorption data of ethane/n-butane, ethane/n-pentane and n-butane/n-pentane. The experimental data are obtained using a differential adsorption bed, which is found to be a very useful device in studying dynamics of multicomponent systems., Comparison of this model with a model assuming constant surface diffusivity shows that the proposed model herein is a superior model in predicting the multicomponent adsorption dynamics data.

Keywords: Adsorption, Activated Carbon, Ethane

Hu, X., Rao, G.N. and Do, D.D. (1993), Multicomponent sorption kinetics of ethane and propane in activated carbon: Simultaneous adsorption. *Gas Separation & Purification*, **7** (1), 39-45.

Full Text: [G\Gas Sep Pur7, 39.pdf](G/Gas%20Sep%20Pur7,%2039.pdf)

Abstract: Extensive experimental data of binary adsorption kinetics of ethane and propane onto Ajax activated carbon are collected by using a ‘differential adsorption bed’ over a range of particle sizes and shapes, bulk concentrations and temperatures. A multicomponent model incorporating macropore, surface and micropore diffusion mechanisms recently proposed by Hu and Do (Chem Eng Sci (in press)) is used to predict the binary adsorption dynamic data by using information of single-component isotherms and dynamics. The multicomponent adsorption equilibrium is calculated by using the ideal adsorbed solution theory (IAST), with the single-component isotherm described by a Unilan equation. The model is found to describe the binary adsorption kinetics well and in particular it accurately predicts the degree of the overshoot of the fast-diffusing/less-strongly adsorbed species.

Keywords: Activated Carbon, Adsorption Dynamics, Ideal Adsorbed Solution Theory

Hu, X., Rao, G.N. and Do, D.D. (1993), A mathematical model for multicomponent adsorption, desorption and displacement kinetics of ethane, propane and n-butane in activated carbon. *Gas Separation & Purification*, **7** (4), 197-206.

Full Text: [G\Gas Sep Pur7, 197.pdf](G/Gas%20Sep%20Pur7,%20197.pdf)

Abstract: A mathematical model allowing for macropore, surface and micropore diffusions is used to predict the multicomponent adsorption, desorption and displacement kinetics of gases on activated carbon using only information of single-component mass transfer and equilibrium. This model assumes the chemical potential gradient as the driving force for diffusion so that the concentration dependency of the surface diffusivity can be accounted for. The adsorbed species diffuse in both particle and microparticle (grain) coordinates. The local diffusion flux of the adsorbed species inside the microparticle is computed with the aid of the concept of an imaginary gas-phase concentration. The multicomponent adsorption equilibrium is calculated using the ideal adsorbed solution theory (IAST) and a single-component isotherm equation. To validate the model, experiments on equilibria as well as dynamics are carried out. Single-component adsorption equilibrium data are obtained by using a volumetric measurement rig. The dynamic responses of single and binary systems are collected via a differential adsorption bed, with ethane, propane and n-butane as adsorbates. The model predictions are found to be in good agreement with the experimental results and the role of concentration dependency of the diffusion of the adsorbed species is significant.

Keywords: Activated Carbon, Multicomponent Sorption Dynamics, Ideal Adsorbed Solution Theory

Rao, G.N., Hu, X. and Do, D.D. (1994), Multicomponent sorption kinetics of hydrocarbons in activated carbon: Simultaneous desorption and displacement. *Gas Separation & Purification*, **8** (2), 67-76.

Full Text: [G\Gas Sep Pur8, 67.pdf](G/Gas%20Sep%20Pur8,%2067.pdf)

Abstract: Binary desorption and displacement kinetics of ethane and propane in Ajax activated carbon are studied in this paper to further understand the multicomponent adsorption of light hydrocarbons onto activated carbon. The experimental data are collected using a differential adsorption bed over a range of temperatures, bulk concentration combinations, particle sizes and shapes. A macropore, surface and micropore diffusion (MSMD) model recently proposed by Hu and Do (*Chem Eng Sci* (1993) 48 1317) is used in the analysis of experimental data. This model takes into account the concentration dependency of the surface diffusivity. Both diffusions of free and adsorbed species are allowed for in the theory. The adsorbed species are assumed to diffuse in the particle as well as in the microparticle (grain) coordinates. An imaginary gas-phase concentration concept is used to calculate the local diffusion flux of the adsorbed species inside the microparticle. The local multicomponent adsorption equilibrium at any point within the particle is calculated using the ideal adsorbed solution theory (IAST), with the single-component adsorption equilibrium data described by a Unilan equation.

Keywords: Activated Carbon, Multicomponent Sorption Kinetics, Diffusion, Ideal Adsorbed Solution Theory

Hu, X., King, B. and Do, D.D. (1994), Ternary adsorption kinetics of gases in activated carbon. *Gas Separation & Purification*, **8** (3), 175-186.

Full Text: [G\Gas Sep Pur8, 175.pdf](G/Gas%20Sep%20Pur8,%20175.pdf)

Abstract: Ternary adsorption kinetic experiments of ethane (light species), propane (intermediate species) and n-butane in activated carbon are collected under various concentration combinations, temperatures and particle sizes. The effects of these parameters on the ternary adsorption dynamics are investigated. All the experimental data are compared with the predictions by a multicomponent heterogeneous macropore, surface and micropore diffusion (HMSMD) model recently proposed by Hu and Do (*AIChE J* (1993) 39 1628) using only single-component equilibrium and mass transfer parameters. The model can accurately predict the adsorption rates of ethane, propane and n-butane, but a small error in the calculation of the adsorbed amount of propane at ternary equilibrium is observed.

Keywords: Activated Carbon, Adsorption Kinetics, Energy Distribution, Micropore and Surface Diffusion, Multicomponent

Hu, X., King, B. and Do, D.D. (1994), Ternary desorption and displacement kinetics of gases in activated carbon. *Gas Separation & Purification*, **8** (3), 187-190.

Full Text: [G\Gas Sep Pur8, 187.pdf](G/Gas%20Sep%20Pur8,%20187.pdf)

Abstract: Both desorption and displacement kinetic experimental data of gases in activated carbon are presented in this article for ternary systems of ethane, propane and n-butane. Experiments are carried out under various temperatures, particle sizes and shapes. The collected data are compared with the predictions obtained from a multicomponent heterogeneous diffusion model proposed by Hu and Do (*AIChE J* (1993) 39 1628) using single-component equilibrium and mass transfer parameters.

Keywords: Activated Carbon, Adsorption Kinetics, Energy Distribution, Micropore and Surface Diffusion, Multicomponent

# Title: Gastroenterologia y Hepatologia

Full Journal Title: Gastroenterologia y Hepatologia

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ISSN:

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Subject Categories:

: Impact Factor

? Gisbert, J.P. and Panes, J. (2009), Scientific publication, bibliometric indicators, and Hirsch’s h-index. *Gastroenterologia y Hepatologia*, **32** (3), 140-149.

Keywords: Authorship, Bad, Bibliometric, Bibliometric Indicators, h Index, h-Index, Impact Factor, Indicators, Mar, Medical Journals, Numbers, Perish, Publication, Publish, Ranking, Researchers, Time

? Alcaide, G.G., Rincon, J.M.R. and Gisbert, J.P. (2010), Scientific collaboration and research areas in *Gastroenterologia y Hepatologia and Revista Espanola de Enfermedades Digestivas* (2000-2009). *Gastroenterologia y Hepatologia*, **33** (9), 670-680.

Full Text: 2010\Gas Hep33, 670.pdf

Keywords: Bibliometric Analysis, Impact, Japan, Journals, Research, Scientific Collaboration

# Title: Gastroenterologie Clinique et Biologique

Full Journal Title: [Gastroenterologie Clinique et Biologique](http://www.sciencedirect.com/science/journal/03998320)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zerbib, F., Tran, A. and Cellier, C. (2005), Digestive tube and pancreas - Clinical and biological gastroenterology: Editorial statement 2004. *Gastroenterologie Clinique et Biologique*, **29** (3), 229-230.

Full Text: Gas Cli Bio29, 229.pdf

Keywords: Biological, Gastroenterology, Pancreas

# Title: Gastroenterology

Full Journal Title: [Gastroenterology](http://www.sciencedirect.com/science/journal/00165085)

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ISSN: 0016-5085

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Journal Country/Territory: United States

Language: English

Publisher: W B Saunders Co

Publisher Address: Independence Square West Curtis Center, Ste 300, Philadelphia, PA 19106-339

Subject Categories:

Gastroenterology & Hepatology: Impact Factor

? Terui, T., Kato, J., Takimoto, R., Hirayama, A. and Niitsu, Y. (1997), Activation of p53 and induction of apoptosis in human gastric cancer cells by sodium butyrate. *Gastroenterology*, **112** (4 SS), A667.

Full Text: 1997\Gastroenterology112, A667.pdf

? Corley, D.A., Kerlikowske, K., Verma, R. and Buffler, P. (2003), Protective association of aspirin/NSAIDs and esophageal cancer: A systematic review and meta-analysis. *Gastroenterology*, **124** (1), 47-56.

Full Text: [2003\Gastroenterology124, 47.pdf](2003/Gastroenterology124,%2047.pdf)

Abstract: Background & Aims: Esophageal carcinomas have high fatality rates, making chemoprevention agents desirable. We performed a systematic review with meta-analysis of observational studies evaluating the association of aspirin/nonsteroidal anti-inflammatory drug (NSAID) use and esophageal cancer. Methods: We evaluated the MEDLINE, BIOSIS, and Web of Science electronic databases (1980-2001); manually reviewed the literature; and consulted with experts. Studies were included if they: (1) evaluated exposure to NSAIDS, aspirin, or both; (2) evaluated esophageal cancer; and (3) reported relative risks or odds ratios or provided data for their calculation. Data were independently abstracted by 2 investigators. The primary and sensitivity analyses used both fixed and random-effects models. Results: Nine studies (2 cohort, 7 case control) containing 1813 cancer cases were identified. All primary summary estimates were homogeneous. Statistical pooling showed a protective association between any use of aspirin/ NSAID and esophageal cancer (odds ratio [OR] = 0.57; 95% confidence interval [CI], 0.47-0.71). Both intermittent (OR = 0.82; CI, 0.67-0.99) and frequent medication use were protective (OR = 0.54; CI, 0.43-0.67), with greater protection with more frequent use. Stratified by medication type, aspirin use was protective (OR = 0.5; CI, 0.38-0.66), and NSAIDs had a borderline protective association (OR = 0.75; CI, 0.54-1.0). Any use was protective against both esophageal adenocarcinoma (OR = 0.67; CI, 0.51-0.87) and squamous cell carcinoma (OR = 0.58; CI, 0.43-0.78). Conclusions: Pooled results support a protective association between aspirin and NSAIDs and esophageal cancer (of both histological types) and provide evidence for a dose effect. These findings support evaluating these agents in clinical trials of high-risk patients.

Keywords: Barretts-Esophagus, Cancer, Carcinoma, Chemoprevention, Clinical Trials, Control, Controlled Clinical-Trials, Cyclooxygenase-2 Expression, Databases, Drug, Esophagogastric Junction, Familial Adenomatous Polyposis, Gastric Cardia, High-Risk Patients, Increasing Incidence, Literature, Medication, Medline, Meta-Analysis, Methods, Myocardial-Infarction, Nonsteroidal Antiinflammatory Drugs, Observational Studies, Primary, Ratio, Review, Science, Systematic, Systematic Review, United-States, Web of Science

? (2003), Novel coronavirus associated with SARS outbreak. *Gastroenterology*, **124** (7), 1724-1725.

Full Text: [2003\Gastroenterology124, 1724.pdf](2003/Gastroenterology124,%201724.pdf)

? Song, F., Phesse, T.J., Clarke, A.R. and Watson, A.J. (2009), Cited 1 knockout mice have reduced growth of intestinal tumours. *Gastroenterology*, **136** (5), A6.

Full Text: [2009\Gastroenterology136, A6.pdf](2009/Gastroenterology136,%20A6.pdf)

? Rahbari, N.N., Aigner, M., Thorlund, K., Mollberg, N., Motschall, E., Jensen, K., Diener, M.K., Buchler, M.W., Koch, M. and Weitz, J. (2010), Meta-analysis shows that detection of circulating tumor cells indicates poor prognosis in patients with colorectal cancer. *Gastroenterology*, **138** (5), 1714-1U20.

Full Text: [2010\Gastroenterology138, 1714.pdf](2010/Gastroenterology138,%201714.pdf)

Abstract: BACKGROUND & AIMS: The prognostic significance of circulating (CTCs) and disseminated tumor cells in patients with colorectal cancer (CRC) is controversial. We performed a meta-analysis of available studies to assess whether the detection of tumor cells in the blood and bone marrow (BM) of patients diagnosed with primary CRC can be used as a prognostic factor. METHODS: We searched the Medline, Biosis, Science Citation Index, and Embase databases and reference lists of relevant articles (including review articles) for studies that assessed the prognostic relevance of tumor cell detection in the peripheral blood (PB), mesenteric/portal blood (MPB), or BM of patients with CRC. Meta-analyses were performed using a random effects model, with hazard ratio (HR) and 95% confidence intervals (95% CIs) as effect measures. RESULTS: A total of 36 studies, including 3094 patients, were eligible for final analyses. Pooled analyses that combined all sampling sites (PB, MPB, and BM) associated the detection of tumor cells with poor recurrence-free survival (RFS) (HR = 3.24 [95% CI: 2.06-5.101, n = 26, I-2 = 77%) and overall survival (OS) (2.28 [1.55-3.38], n = 21, I-2 = 66%). Stratification by sampling site showed that detection of tumor cells in the PB compartment was a statistically significant prognostic factor (RFS: 3.06 [1.74-5.38], n = 19, I-2 = 78%; OS: 2.70 [1.74-4.20], n = 16, I-2 = 59%) but not in the MPB (RFS: 4.12 [1.01-16.83], n = 8, 12 = 75%; OS: 4.80 [0.81-28.32], n = 5, I-2 = 82%) or in the BM (RFS: 2.17 [0.94-5.03], n = 4, I-2 = 78%; OS: 1.50 [0.52-4.32], n = 3, I-2 = 84%). CONCLUSION: Detection of CTCs in the PB indicates poor prognosis in patients with primary CRC.

Keywords: Antigen Messenger-Rna, Articles, Bone-Marrow Micrometastases, Cancer, Circulating Tumor Cells, Citation, Colorectal Cancer, Cytokeratin-Positive Cells, Databases, Growth-Factor Receptor, Medline, Meta-Analysis, Minimal Residual Disease, Model, Multiple Molecular Markers, Pb, Peripheral Venous-Blood, Polymerase-Chain-Reaction, Primary, Prognosis, Reverse Transcription-PCR, Review, Sampling, Science, Science Citation Index, Solid Epithelial Tumors

? Arvaniti, V., D’Amico, G., Fede, G., Manousou, P., Tsochatzis, E., Pleguezuelo, M. and Burroughs, A.K. (2010), Infections in patients with cirrhosis increase mortality four-fold and should be used in determining prognosis. *Gastroenterology*, **139** (4), 1246-1256.

Full Text: [2010\Gastroenterology139, 1246.pdf](2010/Gastroenterology139,%201246.pdf)

Abstract: BACKGROUND & AIMS: A staged prognostic model of cirrhosis based on varices, ascites, and bleeding has been proposed. We analyzed data on infections in patients with cirrhosis to determine whether it is also a prognostic factor. METHODS: Studies were identified by MEDLINE, EMBASE, COCHRANE, and ISI Web of Science searches (1978-2009); search terms included sepsis, infection, mortality, and cirrhosis. Studies (n = 178) reporting more than 10 patients and mortality data were evaluated (225 cohorts, 11,987 patients). Mortality after 1, 3, and 12 months was compared with severity, site, microbial cause of infection, etiology of cirrhosis, and publication year. Pooled odds ratio of death was compared for infected versus noninfected groups (18 cohorts, 2317 patients). RESULTS: Overall median mortality of infected patients was 38%: 30.3% at 1 month and 63% at 12 months. Pooled odds ratio for death of infected versus noninfected patients was 3.75 (95% confidence interval, 2.12-4.23). In 101 studies that reported spontaneous bacterial peritonitis (7062 patients), the median mortality was 43.7%: 31.5% at 1 month and 66.2% at 12 months. In 30 studies that reported bacteremia (1437 patients), the median mortality rate was 42.2%. Mortality before 2000 was 47.7% and after 2000 was 32.3% (P = .023); mortality was reduced only at 30 days after spontaneous bacterial peritonitis (49% vs 31.5%; P = .005). CONCLUSIONS: In patients with cirrhosis, infections increase mortality 4-fold; 30% of patients die within 1 month after infection and another 30% die by 1 year. Prospective studies with prolonged follow-up evaluation and to evaluate preventative strategies are needed.

Keywords: Amoxicillin-Clavulanic Acid, Case-Fatality Rate, Chronic Liver Disease, Cirrhosis, Embase, Escherichia-Coli, Etiology, Evaluation, Follow-Up, Hospital-Acquired Infections, Infection, Intensive-Care-Unit, Isi, Medline, Model, Mortality, Negative Neutrocytic Ascites, Peritonitis, Prognosis, Prospective Studies, Publication, Ratio, Science, Sepsis, Septic Shock, Short-Term Prognosis, Spontaneous Bacterial Peritonitis, Stage Liver-Disease, Survival, Systematic Review, Web of Science

? Lebwohl, B., Narotsky, D. and Green, P.H. (2011), Temporal and geographic trends in celiac disease research: A bibliometric analysis. *Gastroenterology*, **140** (5), S444

Full Text: [2011\Gastroenterology140, S444.pdf](2011/Gastroenterology140,%20S444.pdf)

Keywords: Bibliometric, Research

# Title: Gastrointestinal Endoscopy

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Journal Country/Territory:

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: Impact Factor

? Jeurnink, S.M., Poley, J.W., Steyerberg, E.W., Kuipers, E.J. and Siersema, P.D. (2008), ERCP as an outpatient treatment: A review. *Gastrointestinal Endoscopy*, **68** (1), 118-123.

Abstract: Background: ERCP on an outpatient basis could be as safe as on an inpatient basis and may also reduce medical costs. Objective: To review the available literature to determine the safety of an ERCP performed on an outpatient basis. Design: A review of the published literature was performed by searching PUBMED, the Cochrane Library, EMBASE, and the Web of Science. Patients: Patients who were undergoing an ERCP. Interventions: An ERCP on an inpatient or outpatient basis. Main Outcome Measurements: Patient and treatment characteristics, complications, and prolonged hospital admissions and readmissions. Results: Eleven studies were included in this review, of which 5 were comparative studies, 5 were prospective studies, and 1 was a retrospective study. In these series, a total of 2483 patients underwent an ERCP on an outpatient basis and 2320 patients were admitted overnight after an ERCP Complications were seen in 184 of 2483 outpatients (7%), of which 72% of complications (107/149) presented within 2 to 6 hours, 10% (15/149) within 6 to 24 hours, and 18% (27/149) more than 24 hours after the ERCP. Three percent of the inpatients (82/2320) developed a complication, of which 95% of complications (78/82) presented within 24 hours and 5% (4/82) presented more than 24 hours after the ERCP. A prolonged hospital stay after an ERCP was indicated in 6% of the designated outpatients (148/2483), whereas 3% of outpatients (74/2149) and < 1% of inpatients (4/2320) were readmitted after discharge. Limitations: Limited data available. Conclusions: This review shows that, with a selective policy, an ERCP on an outpatient basis seems as safe as when performed on an inpatient basis.

Keywords: Acute-Pancreatitis of Choledocholithiasis of Cochrane of Complications of Costs of Embase of Endoscopic Retrograde Cholangiopancreatography of Hospital of Literature of Medical of Policy of Prospective Multicenter of Prospective Studies of Pubmed of Review of Risk-Factors of Safety of Science of Series of Sphincterotomy of Therapeutic ERCP of Treatment of Web of Science

# Title: Gazette Medicale de France

Full Journal Title: Gazette Medicale de France

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Collier, H.R. (1974), New literature information systems in medicine: Science Citation Index and ASCA. *Gazette Medicale de France*, **81** (18), 2313-??.

Keywords: Citation, Science Citation Index

# Title: Geburtshilfe und Frauenheilkunde

Full Journal Title: [Geburtshilfe und Frauenheilkunde](http://www.thieme-connect.com/ejournals/toc/gebfra)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Borkenhagen, A., Meister, U., Finck, C., Stobel-Richter, Y., Brahler, E. and Kentenich, H. (2005), Attitudes, acceptability, concerns and expectations towards preimplantation diagnosis, embryo screening, social sexing by infertile couples and couples at risk. *Geburtshilfe und Frauenheilkunde*, **65** (1), 30-38.

Full Text: Geb Fra65, 30.pdf

Abstract: The literature describing the views of potential users of preimplantation genetic diagnosis (PGD) is small. Overall, the vast majority of previous studies found that PGD and embryo screening are a highly acceptable technology for both consumer groups couples at high risk and infertile couples. Aim of this paper is to give an overview of studies on acceptability, attitudes, concerns and expectations towards PGD, embryo selection and preimplantation diagnosis for social sexing. After a bibliometrical research in Medline, Pubmed and Psyndex and specialist German journals 12 studies were analysed which were published between 1990 and 2003. The analysis showed that the majority of patients expressed an overwhelmingly positive attitude towards PGD and expressed few concerns about the extension of the technology to testing for non-disease states such as sex. But for both user groups there were different factors which had a significant impact on the choice of PGD as a prospective reproductive option: reproductive history, especially the duration of infertility, is the main factor for infertile couples which determines the choice of PGD, whereas for couples at high risk previous experiences with PGD and having an affected child have most impact on the choice of PGD as a future reproductive treatment. However, despite its benefits PGD and embryo screening are associated with many ethical issues including concerns about the ethics of embryo manipulation and, especially, the issue of eugenics. The analysis shows that there is little demand for sex selection services in Western societies.

Keywords: Attitudes, Acceptability, Preimplantation Genetic Diagnosis, Embryo Selection, Social Sexing, Genetic Diagnosis, Representative Survey, Nonmedical Reasons, Selection

? Borkenhagen, A. and Kentenich, H. (2009), Labia Reduction - The newest trend in cosmetic genitoplasty - An overview. *Geburtshilfe und Frauenheilkunde*, **69** (1), 19-23.

Full Text: Geb Fra69, 19.pdf

Abstract: Problem: Women’s concerns about their appearance, fuelled by commercial pressure to undergo surgical improvement, now also include the genitalia. Labiaplasty, which usually involves labia reduction, is becoming as common as other cosmetic procedures, New advancements and techniques in labiaplasty typically lessen scarring, pain, recovery time, and show good results. The aim of this paper is to give an overview of studies on the clinical and psychosocial outcomes of labiaplasty. Material and Methods: After a bibliometric search in Medline and PubMed and German specialist journals, 10 studies published between 1998 and 2008 were analyzed. Results: Most reports refer only to the technical aspects of surgery, and outcome data are sparse. Few psychometrically robust measures exist to evaluate the long-term impact of plastic Surgery in general, let alone genital surgery. The rare reports that exist on patient satisfaction with labiaplasty are generally positive, but assessments are short-term and lack methodological rigor. Conclusion: Labiaplasty carries a risk and has not been shown to result in long-term psychological benefits. These procedures are often not medically indicated, and the safety and effectiveness of these procedures have not been documented. Clinicians who receive requests from patients for such procedures should discuss the reason for the request with the patient and perform an examination for any physical signs or symptoms that may indicate the need for surgical intervention. Women should be informed about the lack of data supporting the efficacy of these procedures and their potential complications, including infection altered sensation, dyspareunia and scarring.

Keywords: Aesthetic Reduction, Assessments, Benefits, Bibliometric, Clinical, Complications, Cosmetic Genitoplasty, Data, Dyspareunia, Effectiveness, Efficacy, Examination, Female Genital Cosmetic Surgery, General, Impact, Improvement, Indication, Infection, Intervention, Journals, Labia Reduction, Labioplasty, Long Term, Long-Term, Minora Reduction, Outcome, Outcomes, Pain, Patient Satisfaction, Patients, Physical, Potential, Pressure, Procedures, Psychological, Psychological Outcome, Psychosocial, Psychosocial Outcomes, Pubmed, Recovery, Reduction, Risk, Safety, Satisfaction, Search, Specialist, Surgery, Symptoms, Techniques, Time

? Griesinger, G., Schultz, L. and Diedrich, K. (2009), Bibliometric analysis of publication activity in reproductive medicine since 1990 in various European countries. *Geburtshilfe und Frauenheilkunde*, **69** (8), 742-743.

Keywords: Bibliometric Analysis

# Title: Gefahrstoffe Reinhaltung der Luft

Full Journal Title: Gefahrstoffe Reinhaltung der Luft

ISO Abbreviated Title: Gefahrst. Reinhalt. Luft

JCR Abbreviated Title: Gefahrst Reinhalt L

ISSN: 0039-077

Issues/Year: 11

Journal Country/Territory: Germany

Language: English

Publisher: Springer Verlag

Publisher Address: 175 Fifth Ave, New York, NY 10010

Subject Categories:

Engineering, Environmental: Impact Factor

Engineering, Civil: Impact Factor

Environmental Sciences: Impact Factor 0.252, 112/126 (1999); Impact Factor 0.190, 115/127 (2000)

? (1997), Decommissioning of a solid waste incinerator. *Gefahrstoffe Reinhaltung der Luft*, **57** (1), 20.

? Broker, G., Oehme, M., Bollmacher, H., Coleman, P., Fraisse, D., de Jong, A., Knoche, M., Lutzke, K. and Marklund, S. (1998), Standardisation of dioxin measurement procedures for incinerator waste gases according to the European Standard EN 1948. *Gefahrstoffe Reinhaltung der Luft*, **58** (4), 141-147.

Abstract: A working group under the European Committee for Standardisation (CEN) has established a European Standard for the measurement of polychlorinated dibenzo-p-dioxins (PCDD) and dibenzofurans (PCDF) in the stationary source emission of waste incinerators. Three different sampling procedures were selected and considered to be equivalent as a result of comparative measurements. The European Standard consists of a framework of quality control measures and requirements which are briefly described and which have to be satisfied by any methodology employed. The applicability of the European Standard has been evaluated and proven by validation measurements. The results are presented in condensed form. They show that a limit of 0.1 ng I-TEQ/m(3) can be measured with an internal variability of±0.01 to 0.1 ng I-TEQ/m(3) and external variability of around±0.05 to 0.1 ng I-TEQ/m3 (all values at 95 % confidence level) depending on the methodology applied and the construction of the waste incinerator.

? Buser, S. and Brandt, G. (1998), HCN and N2O emissions from sewage sludge incineration in a fluidized bed incinerator. *Gefahrstoffe Reinhaltung der Luft*, **58** (4), 161-165.

Keywords: Combustion

? Grodten, T., Schmidt, D. and Dannecker, W. (1998), Separation efficiencies of varying grain size activated lignite cokes in flue gas purification-techniques at waste incinerator plants. *Gefahrstoffe Reinhaltung der Luft*, **58** (5), 205-210.

Abstract: Two activated lignite cokes of varying grain sizes were tested in an extensive investigation regarding their characteristics of simultaneous absorption of various compounds in a waste incineration plant. In this context particular and gaseous pollutants were simultaneously determined before and after the absorber beds. The results indicated that mercury, PCDD/F, PAH as well as polychlorinated hydrocarbon compounds (HCH, PCBz and PCPh) were absorbed so effectively that their concentration in the cleaned flue gas was mainly below the detection limit, independent of the grain size of the coke. The two coke types displayed differing separation efficiencies, concerning both the corrosive gases (HCl, SO2 and the aromatic hydrocarbons. During the time of the experiment benzene and toluene came through the absorber beds thus showing evidently higher contents of benzene in the cleaned flue gas than in the flue gas prior to the absorber. By means of sampling of several layers and subsequent analysis of the coke, it could be shown that mercury as well as the PAH were totally absorbed even on coarse sized coke within the first 20 cm of the bed.

# Title: A general advantage theory of bibliometric and other cumulative advantage processes

? de Solla Price, D.J. (1980), *A general advantage theory of bibliometric and other cumulative advantage processes*, In B.C. Griffith (Ed.), Key papers in information science (pp. 177-199). White Plains, N.Y.: Knowledge Industry.

? de Solla Price, D.J. (1980), *The citation cycle*, In B.C. Griffith (Ed.), Key papers in information science (pp. 195-210). White Plains, N.Y.: Knowledge Industry.

# Title: Gender Medicine

Full Journal Title: Gender Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kiyohara, C. and Ohno, Y. (2010), Sex differences in lung cancer susceptibility: A review. *Gender Medicine*, **7** (5), 381-401.

Abstract: Background: Several epidemiologic and molecular epidemiologic studies have indicated that, for a given number of cigarettes smoked, women may be at higher risk of lung cancer compared with men. Objective: The objective of this article was to address sex differences in lung cancer susceptibility, with special emphasis on genetic, biological, and sex-related hormonal factors. Methods: Using the search terms gender or sex difference in combination with lung cancer, susceptibility, survival, polymorphism, biomarker, and smoking, we conducted a review of the available literature in the MEDLINE, Current Contents, and Web of Science biomedical databases. Relevant English-language publications (January 1966-December 2009) on sex differences in lung cancer were identified. Results: Higher levels of polycyclic aromatic hydrocarbon DNA adducts were observed in female lung cancer patients compared with their male counterparts, even though the level of tobacco carcinogens was lower among women than among men. DNA repair capacity was found to be lower in female lung cancer patients than in their male counterparts. A higher frequency of G-to-T transversion mutations in the tumor suppressor protein p53 gene has been observed in women compared with men. Non-small cell lung tumors in women appeared to be more likely than those in men to harbor K-ras, c-erbB-2, or epidermal growth factor receptor mutations. Sex differences have been identified in the expression of the cytochrome P4501A1 gene and gastrin-releasing peptide receptor gene, with women exhibiting higher gene expression than men for both of these genes. Evidence supporting a possible association between estrogen and lung cancer risk based on epidemiologic studies has not been consistent, but sex hormones may influence susceptibility to lung carcinogenesis. Conclusions: Women may be more susceptible to tobacco smoke and potentially more vulnerable to lung cancer development. If additional studies yield supporting evidence, researchers, the public, and policy makers should focus on ways to reduce the risk of lung cancer for women. (Gend Med. 2010;7:381-401) (C) 2010 Excerpta Medica Inc.

Keywords: Aryl-Hydrocarbon Hydroxylase, Biomedical, Bladder-Cancer, Cancer, Carcinogenesis, Cigarette-Smoking, Databases, Development, Dna, Dna Adduct Levels, Epidemiologic Studies, Epidemiology, Estrogen, Estrogen-Receptor-Beta, Frequency, Gender, Gender-Differences, Gene Expression, Genetic, Genetic Susceptibility, Genetic Susceptibility, Histologic Type, Hormone Replacement Therapy, Literature, Lung Cancer, Medline, Methods, Molecular, P53, Policy, Polymorphism, Publications, Researchers, Review, Risk, Science, Sex, Sex Difference, Sex Hormones, Smoking, Smoking-Related Risk, Survival, Susceptibility, Tobacco, Web of Science, Women

# Title: General and Comparative Endocrinology

Full Journal Title: General and Comparative Endocrinology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Fevold, H.R. and Wright, P.L. (1969), Steroid metabolism by badger (*Taxidea taxus*) ovarian tissue homogenates. *General and Comparative Endocrinology*, **13** (1), 60-67.

Full Text: [1960-80\Gen Com End13, 60.pdf](1960-80/Gen%20Com%20End13,%2060.pdf)

# Title: General Hospital Psychiatry

Full Journal Title: [General Hospital Psychiatry](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=01638343)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Druss, B.G. and Von Esenwein, S.A. (2006), Improving general medical care for persons with mental and addictive disorders: Systematic review. *General Hospital Psychiatry*, **28** (2), 145-153.

Full Text: [2006\Gen Hos Psy28, 145.pdf](2006/Gen%20Hos%20Psy28,%20145.pdf)

Abstract: Objective: To conduct a systematic review of studies of interventions designed to improve general medical care in persons with mental and addictive disorders. Methods: Following Cochrane Collaboration guidelines, a comprehensive search through October 2005 was conducted in multiple bibliometric indexes using search terms related to primary medical care and mental health/addictive disorders. Two assessors independently extracted information on linkage, quality, outcomes and costs of care. Results: Six randomized trials met the preestablished search criteria. The interventions spanned a continuum of approaches for improving treatment, ranging from on-site medical consultation, through team-based approaches, to models involving facilitated referrals to primary care. The studies demonstrated a substantial positive impact on linkage to and quality of medical care; there was evidence of health improvement and improved abstinence rates in patients with greater medical comorbidity. The three studies that assessed expenditures found the programs to be cost-neutral from a health-plan perspective. Conclusion: A small but growing body of research suggests that a range of models may hold potential for improving these patients’ health and health care, at a relatively modest cost. Future work should continue to develop and test approaches to this problem that can be tailored to local system needs and capacities. © 2006 Elsevier Inc. All rights reserved.

Keywords: Bibliometric, Chronic Illness, Collaborative Care, Community Psychiatric-Services, Comorbidity, Cost, Costs, Costs of Care, Disorders, Excess Mortality, Expenditures, General, Guidelines, Health, Health Care, Health Improvement, Health-Care, Impact, Information, Interventions, Local, Major Depression, Medical, Mental, Models, Myocardial-Infarction, Older Patients, Outcomes, Patients, Primary Care, Quality, Randomized, Randomized Controlled-Trial, Range, Research, Review, Substance-Abuse, Systematic Review, Test, Treatment

# Title: Genes Chromosomes & Cancer

Full Journal Title: Genes Chromosomes & Cancer

ISO Abbreviated Title: Gene Chromosomes Cancer

JCR Abbreviated Title: Gene Chromosome Canc

ISSN: 1045-2257

Issues/Year: 12

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:

Oncology Genetics & Heredity: Impact Factor

Borresen, A.L., Andersen, T.I., Eyfjörd, J.E., Cornelis, R.S., Thorlacius, S., Borg, Å., Johansson, U., Theillet, C., Scherneck, S., Hartman, S, Cornelisse, C.J., Hovig, E. and Devilee, P. (1995), *TP53* mutations and breast cancer prognosis: Particularly poor survival rates for cases with mutations in the zinc-binding domains. *Genes Chromosomes & Cancer*, **14** (1), 71-75.

Abstract: Acquired mutations in TP53 as well as immunohistochemically detectable protein expression have been implicated as prognostic factors for breast cancer. We have evaluated the relationship between mutations detected in 119 breast tumours and various clinicohistopathological indices, stratifying the mutations according to the functional domains as defined by the recent elucidation of the crystal structure of the protein. Patients with missense mutations located in regions encoding parts of the protein involved in zinc-binding had significantly decreased disease-free and overall survival relative to patients whose tumours had mutations in other domains. These results indicate that these biochemically defined domains also have biological relevance in terms of breast cancer disease course, and suggest that some mutations in TP53, more than others, can contribute to the development of clinically more aggressive and perhaps treatment resistant breast tumours. When confirmed, this will be of potential importance in predicting the clinical behaviour of breast cancer and its responsiveness to therapy. (C) 1995 Wiley-Liss, Inc.

Keywords: P53 Mutations

# Title: Genetic Counseling

Full Journal Title: Genetic Counseling

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Borry, P., Fryns, J.P., Schotsmans, P. and Dierickx, K. (2005), Attitudes towards carrier testing in minors: A systematic review. *Genetic Counseling*, **16** (4), 341-352.

Abstract: The objective of this article is to review the attitudes of the different stakeholders (minors. healthcare professionals, parents and relatives of affected individuals) towards carrier testing in minors. The databases PUBMED. Google Scholar, Psychinfo, Biological Abstracts, Francis, Anthropological Index online, web of Science, and Sociological Abstracts were searched using key words for the period 1990-2004. Studies were included if they were published in a peer reviewed journal in English and described the attitudes of minors, parents or healthcare professionals towards carrier testing in minors in a family context. The results were presented in a summary form. In total 20 relevant studies were retrieved (2 studies reported the attitudes of two stakeholders). Only one study reported the attitudes of adolescents, two studies reported the attitudes of adults who had undergone carrier testing in childhood. In total six studies have been retrieved discussing the parental attitudes towards carrier testing in their children. Over all studies, most parents showed interest in detecting their children’s carrier status and responded they wanted their child tested before the age of majority: some parents even before 12 years. Eight studies were retrieved that reported the attitudes of relatives of affected individuals. Most were in favor of carrier testing before 18 years. The studies retrieved suggest that most parents are interested in the carrier status of their children and want their children to be tested before they reach legal majority (and some even in childhood). This can lead to tensions between parents and healthcare professionals regarding carrier testing in minors. Guidelines of healthcare professionals advise to defer carrier testing on the grounds that children should be able to decide for themselves later in life to request a carrier test or not.

Keywords: Adolescents, Adults, Ataxia-Telangiectasia, Attitudes, Carrier Testing, Child, Children, Cystic-Fibrosis, Databases, Decision-Making, Disease, Fragile-X-Syndrome, Genetic Testing, Genetics, Google Scholar, Healthcare Professionals, Interest, Journal, Lead, Minors, Obligate Carriers, Parental Attitudes, Parents, Predictive Testing, Prenatal-Diagnosis, Review, Science, Systematic, Systematic Review

# Title: Genetic Engineering News

Full Journal Title: Genetic Engineering News

ISO Abbreviated Title: Genet. Eng. News

JCR Abbreviated Title: Genet Eng News

ISSN: 0270-6377

Issues/Year: 21

Journal Country/Territory: United States

Language: English

Publisher: Mary Ann Liebert Inc Publ

Publisher Address: 2 Madison Avenue, Larchmont, NY 10538

Subject Categories:

Biotechnology & Applied Microbiology: Impact Factor 0.109, / (2001)

Genetics & Heredity: Impact Factor 0.109, / (2001)

? Wong, J.F. (2003), SARS potential epidemic may spark investment - Growing market for infectious disease R&D might invigorate funding. *Genetic Engineering News*, **23** (9), 22-??.

# Title: Genetics in Medicine

Full Journal Title: Genetics in Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Smerecnik, C.M.R., Mesters, I., de Vries, N.K. and de Vries, H. (2008), Educating the general public about multifactorial genetic disease: Applying a theory-based framework to understand current public knowledge. *Genetics in Medicine*, **10** (4), 251-258.

Abstract: The present article describes the application of a theory-based framework to understand current public knowledge of genetic risk factors of multifactorial diseases. The main innovative aspect is the application of E. M. Rogers’ knowledge framework which distinguishes three types of knowledge: “awareness knowledge,” “how-to knowledge,” and “principles knowledge.” We argue that distinguishing these types of knowledge allows for a more sophisticated overview of the general public. To illustrate the application of Rogers’ framework, we performed a literature review of current public knowledge of genetic risk factors of multifactorial genetic diseases. Relevant articles were identified by searching the PUBMED, Web of Science, EMBASE, CINAHL, ERIC, and PsycINFO databases from January 1990 until January 2007 and by performing reference list and author searches. Although this review showed that current public knowledge is limited, it also showed that the knowledge framework may be a useful tool for assessing different types of public knowledge and pinpointing flaws or caveats in public knowledge with more precision and subsequently develop public health campaigns to remedy such flaws. Implications for genetic education are discussed.

Keywords: Attitudes, Author, Awareness, Awareness, Breast-Cancer, Databases, Disease, Education, General Public, Genetic, Genetic Diseases, Genetic Risk, Health, Heart-Disease, Information Needs, Inherited High Cholesterol, Knowledge, Literature, Literature Review, Medical Genetics, Multifactorial Disease, Overview, Population, Public Health, Review, Risk, Risk Factors, Risk-Factors, Science, Web of Science

# Title: Genetics and Molecular Research

Full Journal Title: [Genetics and Molecular Research](http://www.funpecrp.com.br/gmr/all_issues.htm)

ISO Abbreviated Title:

JCR Abbreviated Title: Genet Mol Res

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Leite, M. (2004), Public sphere and the sustainability of the bioinformatics promise. *Genetics and Molecular Research*, **3** (4), 575-581.

Full Text: [2004\Gen Mol Res3, 575.pdf](2004/Gen%20Mol%20Res3,%20575.pdf)

Abstract: The literature about genomics and bioinformatics achievements in high-impact journals such as Nature and Science has raised disproportionate expectations amongst the general public about fast and revolutionary drugs and breakthroughs in biomedicine. However, the yield obtained by database mining activities has been modest, as reported in the February 2001 issues of these journals featuring the completion of human genome draft sequences by the Human Genome Project Consortium and the company Celera. I have compared changes in rethoric employed by molecular biologists in 2001 and in April 2003, when the final sequence was announced. The comparison suggests that researchers are concerned about the sustainability of society’s investment in this field, though not explicitly.

Keywords: Biomedicine, Changes, Comparison, Database, Drugs, Field, General, Genomics, Human, Journals, Literature, Mining, Public, Sustainability

# Title: Genome Biology

Full Journal Title: [Genome Biology](http://genomebiology.com/home)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Cokol, M., Rodriguez-Esteban, R. and Rzhetsky, A. (2007), A recipe for high impact. *Genome Biology*, **8** (5), Article Number: 406.

Full Text: [2007\Gen Bio8, 406.pdf](2007/Gen%20Bio8,%20406.pdf)

Abstract: Our analysis highlights common statistical features of high-impact articles; we also show how information flows among various publication types.

Keywords: Analysis, Publication

# Title: Geochimica et Cosmochimica Acta

Full Journal Title: [Geochimica et Cosmochimica Acta](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5806&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=f52bd1fdc93101933d25222270751cf5)

ISO Abbreviated Title: Geochim. Cosmochim. Acta

JCR Abbreviated Title: Geochim Cosmochim Act

ISSN: 0016-7037

Issues/Year: 24

Journal Country/Territory: United States

Language: Multi-Language

Publisher: Pergamon-Elsevier Science Ltd

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

Subject Categories:

Geochemistry & Geophysics: Impact Factor 2.534, 5/45 (2000)

Luce, R.W., Bartlett, R.W. and Parks, G.A. (1972), Dissolution kinetics of magnesium silicates. *Geochimica et Cosmochimica Acta*, **36** (1), 35-50.

Full Text: [G\Geo Cos Act36, 35.pdf](G/Geo%20Cos%20Act36,%2035.pdf)

Abstract: Kinetic dissolution experiments on serpentine, forsterite and enstatite over a wide pH range at 25°C show that there is an initial rapid exchange of surface magnesium ions with hydrogen ions followed by a longer period of hydrogen exchange and extraction of internal magnesium and silicon, with the amount extracted proportional to *t*1/2. The parabolic exchange kinetics are consistent with either of two rate controlling mechanisms: nonsteady state diffusion of ions within the mineral and quasi-steady state diffusion of ions through a leached shell surrounding the mineral. Diffusion coefficients for magnesium are greater than for silicon for each of the minerals, leading to incongruent dissolution over moderate time periods. The diffusion coefficients decrease in the order forsterite > serpentine > enstatite. Eventually the parabolic exchange rates decrease to the rate of dissolution of all material at the aqueous interface. Hence, over very long periods the amount of silicon and magnesium dissolved is proportional to *t* and dissolution is congruent. In highly acid solutions dissolution rates are fast and this terminal condition is reached much sooner.

Notes: highly cited

Loganathan, P. and Burau, R.G. (1973), Sorption of heavy metal ions by a hydrous manganese oxide. *Geochimica et Cosmochimica Acta*, **37** (5), 1277-1293.

Full Text: [G\Geo Cos Act37, 1277.pdf](G/Geo%20Cos%20Act37,%201277.pdf)

Abstract: Sorption of Co, Zn, Ca and Na by δ-MnO2 was studied at 24.0 ± 0.5°*C* and pH 4. During the sorption of Co and Zn, Mn was released to the solution phase; however, Mn release was not detected during the sorption of Ca and Na. On the basis of crystal field theory, it is proposed that Zn may interchange with Mn2+ in the δ-MnO2 structure, whereas Co may interchange with both Mn2+ and Mn3+. It is suggested that the interchangeable Mn2+ and Mn3+ sites were in the disordered layers in the δ-MnO2 structure.

Sorption of Co, Zn and Ca at pH 4 fitted single-site Langmuir isotherm expressions at all Ca concentrations, but only at concentrations greater than 10−4 M for Co and Zn. Mn release by δ-MnO2 at pH 4 during Co and Zn sorption also fitted single-site Langmuir isotherms. An expression for the case of multisite Langmuir sorption was derived and applied to the cases of Co and Zn sorption and to the case of Mn release during Co sorption. The data of these cases were used to calculate statistically the coefficients of multiple regression equations from which the sum of the capacities of all sites in each case were obtained. From all of these derived capacities, it is proposed that there was only one site where Ca interchanged with surface bound H. Zn was postulated to interchange not only with these bound H sites, but also with another site where it interchanged with structural Mn2+. Co was postulated to interchange with both of these sites, and additionally, with a third site where it interchanged with structural Mn3+.

Using a pH-stat set at pH 4, it was determined that approximately 2 moles of H were released per mole of Co or Zn sorbed at bound H sites.

Alberts, J.J., Schindler, J.E., Nutter, Jr., D.E. and Davis, E. (1976), Elemental infra-red spectrophotometric and electron spin resonance investigation of non-chemically isolated humic material. *Geochimica et Cosmochimica Acta*, **40** (3), 369-372.

Full Text: [G\Geo Cos Act40, 369.pdf](G/Geo%20Cos%20Act40,%20369.pdf)

Abstract: Naturally occurring organic material from a lake in the southeastern United States was isolated by ultrafiltration and analyzed by i.r. spectrophotometry and electron spin resonance spectrometry, and for its elemental composition without chemical pretreatment. The results of the study indicate the isolate is an apparent high molecular weight fulvic acid with associated, hydrated Mn2+ ion which does not appear strongly bound to the organic moiety.

Notes: highly cited

? Murray, J.W. and Dillard, J.G. (1979), Oxidation of cobalt(II) adsorbed on manganese-dioxide. *Geochimica et Cosmochimica Acta*, **43** (5), 781-787.

Full Text: [1960-80\Geo Cos Act43, 781.pdf](1960-80/Geo%20Cos%20Act43,%20781.pdf)

Abstract: X-ray photoelectron spectroscopy (XPS) measurements of cobalt adsorbed on MnO2 reveal strong evidence that Co(II) has been oxidized to Co(III). The manganese spectra are characteristic of Mn(IV). Model calculations suggest that Co(II) cannot be oxidized by O2 to Co(III) in bulk solution at seawater concentrations but that the oxidation can proceed in the presence of the strong electric field at the MnO2-solution interface. Ni(II), however, cannot be oxidized at the interface except at very high concentrations. These calculations suggest that the oxidation of Co(II) can explain the geochemical separation of cobalt from nickel.

Notes: highly cited

? Kerndorff, H. and Schnitzer, M. (1980), Sorption of metals on humic-acid. *Geochimica et Cosmochimica Acta*, **44** (11), 1701-1708.

Full Text: [1960-80\Geo Cos Act44, 1701.pdf](1960-80/Geo%20Cos%20Act44,%201701.pdf)

Abstract: The sorption on humic acid (HA) of metals from an aqueous solution containing Hg(II). Fe(III), Pb, Cu, Al, Ni, Cr(III), Cd, Zn, Co and Mn, was investigated with special emphasis on effects of pH, metal concentration and HA concentration. The sorption efficiency tended to increase with rise in pH, decrease in metal concentration and increase in HA concentration of the equilibrating solution. At pH 2.4. the order of sorption was: Hg Fe Pb Cu=Al Ni Cr=Zn=Cd=Co=Mn. At pH 3.7. the order was: Hg and Fe were always most readily removed, while Co and Mn were sorbed least readily. There were indications of competition for active sites (CO2H and phenolic OH groups) on the HA between the different metals. We were unable to find correlations between the affinities of the eleven metals to sorb on HA and their atomic weights, atomic numbers, valencies, and crystal and hydrated ionic radii. The sorption of the eleven metals on the HA could be described by the equation Full-size image (1K), where Y = % metal removed by HA; X = mgHA; and A and B are empirical constants.

Balistrieri, L.S. and Murray, J.W. (1982), The surface-chemistry of δ-MnO2 in major ion sea-water. *Geochimica et Cosmochimica Acta*, **46** (6), 1041-1052.

Full Text: [G\Geo Cos Act46, 1041.pdf](G/Geo%20Cos%20Act46,%201041.pdf)

Abstract: The surface chemistry of δMnO2 in major ion seawater is defined by determining the stoichiometry of the reactions which describe the association of the surface hydroxyl groups with Na, Mg, Ca, and K ions, the intrinsic equilibrium constants which define these reactions, and the speciation of the surface at pH 8.

The results indicate:

1) that the surface forms monodentate complexes with Na and K ions and bidentate complexes with Mg and Ca ions;

2) that pK2INT = 4.2, *p*\**KINTNa* = 3.0 ± 0.3, *p*\**KINTK* = 2.0 ± 0.2, *p*\**KINT*>*Mg* = 3.9 ± 0.1, and *p*\**KINT*>*Ca* = 3.3; and

3) ion exchange processes other than with H are important and as a result 84.8% of the surface sites of δMnO2 in major ion seawater at pH 8 are complexed by H, 8.4% by Mg, 4.6% by Ca, 1.6% by Na, and 0.6% by K. Chloride and sulphate do not adsorb on δMnO2 in the pH range of natural waters.

Balistrieri, L.S. and Murray, J.W. (1982), The adsorption of Cu, Pb, Zn and Cd on goethite from major ion seawater. *Geochimica et Cosmochimica Acta*, **46** (7), 1253-1265.

Full Text: [G\Geo Cos Act46, 1253.pdf](G/Geo%20Cos%20Act46,%201253.pdf)

Abstract: The adsorption of Cu, Pb, Zn, and Cd on goethite (αFeOOH) from NaNO3 solutions and from major ion seawater was compared to assess the effect of the major ions of seawater (Na, Mg, Ca, K, Cl, and SO4) on the adsorption behavior of the metals. Magnesium and sulphate are the principal seawater ions which enhance or inhibit adsorption relative to the inert system. Their effect, as determined from the site-binding model of Davis *et al*. (1978), was a combination of changing the electrostatic conditions at the interface and decreasing the available binding sites.

The basic differences between the experimental system of major ion seawater and natural seawater were examined. It was concluded that: 1) although the experimental metal concentrations in major ion seawater were higher than those found in natural seawater, estimates of the binding energy of Cu, Zn, and Cd with αFeOOH for natural seawater concentrations could be made from the data, 2) Cu, Pb, Zn, and Cd showed little or no competition for surface sites on goethite, and 3) the presence of carbonate, phosphate, and silicate had little or no effect on the adsorption of Zn and Cd on goethite.

Jean, G.E. and Bancroft, G.M. (1986), Heavy metal adsorption by sulphide mineral surfaces. *Geochimica et Cosmochimica Acta*, **50** (7), 1455-1463.

Full Text: [G\Geo Cos Act50, 1455.pdf](G/Geo%20Cos%20Act50,%201455.pdf)

Abstract: The adsorption of aqueous Hg2+, Pb2+, Zn2+ and Cd2+ complexes on a variety of sulphide minerals has been studied as a function of the solution pH and also as a function of the nature of the ligands in solution. Sulphide minerals are excellent scavengers for these heavy metals. The adsorption is strongly pH dependent, *i.e.* there is a critical pH at which the adsorption increases dramatically. The pH dependence is related to the hydrolysis of the metal ions. Indirect evidence suggests that the hydrolyzed species are adsorbed directly on the sulphide groups, probably as a monolayer. The results also suggest the presence of MCI*n*2−*n* species physisorbed on the adsorbed monolayer. A positive identification of the adsorbed species was not possible using ESCA/XPS.

? George, W. and Luther, I.I.I. (1987), Pyrite oxidation and reduction: Molecular orbital theory considerations. *Geochimica et Cosmochimica Acta*, **51** (12), 3193-3199.

Full Text: [1987\Geo Cos Act51, 3193.pdf](1987/Geo%20Cos%20Act51,%203193.pdf)

Abstract: It is possible to demonstrate a heterogeneous reaction mechanism for both pyrite oxidation and reduction using a molecular orbital theory approach. The mechanism demonstrates that attachment to the FeS2 surface by an oxidant or reductant requires that they have a vacant orbital (solution phase) or site (solid phase) to bind the oxidant or reductant to a sulfur from S2−2 in FeS2. The approach thus requires the formation of a persulfido (disulfide) bridge between the iron in pyrite and the oxidant (e.g. Fe3+) or the reductant (e.g. Cr2+).

The first electron transfer in oxidation occurs from the π\*; orbital (highest occupied molecular orbital, HOMO) of the S2−2 in FeS2 to the π orbital (lowest unoccupied molecular orbital, LUMO) of the oxidant. Electron transfer in reduction occurs from the σ\* orbital (HOMO) of the reductant to the σ\* orbital (LUMO) of the S2−2 in FeS2. The bridge formation between two metals by a common ligand (persulfido), and the electron transfer, is consistent with an inner sphere type mechanism. In FeS2, however, the ligand S2−2 acts as the electron source or sink rather the Fe2+. The strength of the sulfur-sulfur bond in the persulfido bridge after electron transfer is key to the understanding of FeS2 oxidation and reduction.

Additional bridges can be formed on the FeS2 surface during oxidation until the initial oxidation product S2O2−3 is produced. The proposed mechanism allows for facile pyrite oxidation by Fe3+ but not O2. This is consistent with experimental observations. The mechanism does not require the formation of a free radical in solution. It does predict the formation of an ion radical on the pyrite surface. The proposed mechanism gives the same initial intermediate (FeS2O) as recently proposed by Moses et al. (1987), but explains possible surface attachment by an oxidant and subsequent FeS2 oxidation using a molecular orbital theory approach. The proposed surface mechanism is consistent with experimental observations of several investigators (Goldhaber, 1983; McKibben and Barnes, 1986; Wiersma and Rimstidt, 1984).

The importance of thiosulfate formation and reactivity with Fe3+ is discussed in light of pyrite oxidation and of previous reports on the presence of thiosulfate in marine porewaters

Gonzalez-Davila, M. and Millero, F.J. (1990), The adsorption of copper to chitin in seawater. *Geochimica et Cosmochimica Acta*, **54** (3), 761-768.

Full Text: [G\Geo Cos Act54, 761.pdf](G/Geo%20Cos%20Act54,%20761.pdf)

Abstract: The interaction of metal ions with particulate matter is important in limiting their concentration in seawater. Chitin is one of the constituents of the natural particulate organic matter than can interact with metal ions and therefore may serve as a reasonable model for natural organic solids. The adsorption of Cu2+ on the chitin surface has been studied in seawater as a function of pH, temperature, and salinity. The amphoteric properties of the surface of chitin were characterized in 0.7 M NaCl in terms of a two-protic acid-base system (*pHPZC* = 5.4) with acidity constants *p*\**Ka*1*s* = 4.4 ± 0.2 and *p*\**Ka*2*s* = 6.4 ± 0.2. The maximum proton exchange capacity of chitin was found to be 2.3 ± 0.3 mol kg−1, broadly similar to other solids. The rates of the adsorption were quite rapid (*t*1/2 = 8 *min*) and not strongly affected by the presence of other metals such as Cd2+ and Pb2+. The adsorption equilibrium data have been found to correlate well with surface complex-formation equilibria or the mathematically equivalent Langmuir- type adsorption equilibria. The value for the stability constant of Cu2+ on chitin was found to be *log*\**KHs* = 8.95 ± 0.01, and the complexing capacity of chitin was found to be 6.9 and 5.9 μmol g−1, respectively, in the absence and in the presence of Cd2+ and Pb2+. An increase in the salinity and a decrease in the temperature result in greater adsorption of Cu2+ to chitin

Notes: highly cited

? Comans, R.N.J., Haller, M. and Depreter, P. (1991), Sorption of cesium on illite - Nonequilibrium behavior and reversibility. *Geochimica et Cosmochimica Acta*, **55** (2), 433-440.

Full Text: [1991\Geo Cos Act55, 433.pdf](1991/Geo%20Cos%20Act55,%20433.pdf)

Abstract: Adsorption, desorption, and isotopic exchange experiments have been used to investigate the kinetics and reversibility of cesium sorption on illite. Trace concentrations of cesium were used and experimental conditions were kept close to those of many freshwater environments. Initial adsorption of cesium on illite was rapid but was followed by slower uptake processes with time scales of weeks to months. The uptake proceeded faster and reached much higher K(d) values in a Ca2+ environment than in a K+ environment. The apparent reversibility of sorption was affected by both the slow sorption processes and the nature of the competing cation. The desorption equilibration patterns indicate that cesium is released from rapidly accessible sorption sites but that the slow forward reaction continues. On time scales relevant for modelling its transport and retention in aquatic systems, cesium shows partially irreversible behaviour. A mechanistic interpretation for the observed sorption and isotopic exchange behaviour is proposed whereby cesium migrates slowly to energetically favourable interlayer sites from which it is not easily released.

Keywords: Adsorption, Clay, Desorption, Exchange, Fixation, Kinetics, Minerals, Mobilization, Radiocesium, Sediments, Sorption

Notes: highly cited

? Comans, R.N.J. and Hockley, D.E. (1992), Kinetics of cesium sorption on illite. *Geochimica et Cosmochimica Acta*, **56** (3), 1157-1164.

Full Text: [1992\Geo Cos Act56, 1157.pdf](1992/Geo%20Cos%20Act56,%201157.pdf)

Abstract: The behaviour of anthropogenic cesium isotopes in the aquatic environment is controlled by sorption on solid particles, especially illitic clays. We review data previously published and present new results which show that cesium sorption on potassium- and calcium-saturated illite is kinetically controlled. Two kinetic models incorporating Freundlich isotherms and an irreversible process are used to describe sorption data spanning a range of cesium concentrations. Although empirical in nature and origin, the models are consistent with mechanistic hypotheses proposed by earlier workers. The models predict that effectively instantaneous and reversible kinetic processes control cesium sorption over time scales of a few days and less. Irreversible or apparently irreversible sorption is more significant over longer times. The implications of our findings for radiocesium remobilization in anoxic sediments and transport in the water column are discussed.

Keywords: Adsorption, Aquatic Systems, Cadmium, Isotherms, Mobilization, Particles, Radiocesium, Retention, Sediments, Soils, Sorption, Water

Notes: highly cited

? Fuller, C.C., Davis, J.A. and Waychunas, G.A. (1993), Surface-chemistry of ferrihydrite. 2. Kinetics of arsenate adsorption and coprecipitation. *Geochimica et Cosmochimica Acta*, **57** (10), 2271-2282.

Full Text: [1993\Geo Cos Act57, 2271.pdf](1993/Geo%20Cos%20Act57,%202271.pdf)

Abstract: The kinetics of As(V) adsorption by ferrihydrite was investigated in coprecipitation and postsynthesis adsorption experiments conducted in the pH range 7.5-9.0. In coprecipitation experiments, As(V) was present in solution during the hydrolysis and precipitation of iron. In adsorption experiments, a period of rapid (<5 min) As(V) uptake from solution was followed by continued uptake for at least eight days, as As(V) diffused to adsorption sites on ferrihydrite surfaces within aggregates of colloidal particles. The time dependence of As(V) adsorption is well described by a general model for diffusion into a sphere if a subset of surface sites located near the exterior of aggregates is assumed to attain adsorptive equilibrium rapidly. The kinetics of As(V) desorption after an increase in pH were also consistent with diffusion as a rate-limiting process. Aging of pure ferrihydrite prior to As(V) adsorption caused a decrease in adsorption sites on the precipitate owing to crystallite growth. In coprecipitation experiments, the initial As(V) uptake was significantly greater than in post-synthesis adsorption experiments, and the rate of uptake was not diffusion limited because As(V) was coordinated by surface sites before crystallite growth and coagulation processes could proceed. After the initial adsorption, As(V) was slowly released from coprecipitates for at least one month, as crystallite growth caused desorption of As(V). Adsorption densities as high as 0.7 mole As(V) per mole of Fe were measured in coprecipitates, in comparison to 0.25 mole As(V) per mole of Fe in post-synthesis adsorption experiments. Despite the high concentration of As(V) in the precipitates, EXAFS spectroscopy (WAYCHUNAS et al., 1993) showed that neither ferric arsenate nor any other As-bearing surface precipitate or solid solution was formed. The high adsorption densities are possible because the ferrihydrite particles are extremely small, approaching the size of small dioctahedral chains at the highest As(V) adsorption density. The results suggest that the solid solution model proposed by Fox (1989, 1992) for control of arsenate and phosphate concentrations in natural waters may be invalid.

Keywords: Acidic Mountain Stream, Adsorption, Aluminum Hydroxides, Desorption, Equilibrium, EXAFS, Humic Substances, Hydrous Ferric-Oxide, Iron Oxyhydroxides, Kinetics, Lacustrine Sediments, Model, Partial Hydrolysis, Particles, Phosphate Sorption, X-Ray-Scattering

Zachara, J.M., Resch, C.T. and Smith, S.C. (1994), Influence of humic substances on Co2+ sorption by a subsurface mineral separate and its mineralogic components. *Geochimica et Cosmochimica Acta*, **58** (2), 553-566.

Full Text: [G\Geo Cos Act58, 553.pdf](G/Geo%20Cos%20Act58,%20553.pdf)

Abstract: The sorption of Co2+ (10-6 mol/L) was measured on subsurface mineral materials in the absence and presence of a sorbed leonardite humic acid (LHA) to (1) evaluate the sorptive role of mineral-bound humic substances, and (2) establish approaches to model metal ion binding in composite materials. The subsurface materials were a <2.0 µm size fraction of an ultisol saprolite (CP) and this same material treated with dithionite-citrate-bicarbonate (DCB) to remove Fe-oxides (DCP). Comparable experiments (with and without LHA) were also performed with mineral sorbents representing dominant phases in the CP separate (gibbsite, Al-goethite, and kaolinite) to evaluate their potential contributions to Co sorption. The mineral-bound LHA ranged in concentration between 0.1-0.4 mg-C/m2, representing approximately 0.7% of the subsurface isolate by mass. The sorption-desorption of LHA on the mineral surfaces, and its affinity for Co as a aqueous phase complexant were also determined. Batch measurements were employed (sorbents at 20-90 m2/L; LHA-DOC at approximate to 11 mg-C/L) over a range in pH and ionic strength (I) at I = 0.01 and 0.1 in NaClO4. The LHA strongly sorbed to the subsurface mineral isolates (CP and DCP), and to all the specimen sorbents except kaolinite. Maximum sorption of LHA occurred at lower pH (approximate to 4.5). In solid-free suspensions, the affinity of LHA for Co increased with pH and decreasing I(Kd ranging 20-450 L/g). Mineral-bound LHA increased Co sorption on all the sorbents by factors of 10-60%, with the greatest augmentation noted at pH values (4.5-6.5) where (1) maximum LHA sorption occurred, and (2) Co sorption to the mineral phase was weak and dominated by ion exchange. The LHA appeared simply to augment, rather than to change the intrinsic adsorption behavior of the mineral sorbents. Accordingly, predictions of the Kd for Co on the LHA-coated subsurface materials (DCP, CP) based on a linear additivity model agreed well with the experimental data, suggesting that the complex humic-mineral association acted as a noninteractive sorbent mixture at low aqueous Co concentrations.

Keywords: Dissolved Organic-Matter, Goethite Alpha-Feooh, Trace-Metals, Cadmium Sorption, Water Interface, Copper-Binding, Hydrous Oxides, Iron-Oxides, Fulvic-Acid, Adsorption

Coston, J.A., Fuller, C.C. and Davis, J.A. (1995), Pb2+ and Zn2+ adsorption by a natural aluminum- and iron-bearing surface coating on an aquifer sand. *Geochimica et Cosmochimica Acta*, **59** (17), 3535-3547.

Full Text: [G\Geo Cos Act59, 3535.pdf](G/Geo%20Cos%20Act59,%203535.pdf)

Abstract: Pb2+ and Zn2+ adsorption was studied in batch experiments with material collected from a shallow, unconfined aquifer of glacial outwash sand and gravel in Falmouth, Massachusetts, USA. The aquifer solids contain primarily quartz (95% w/w), with minor amounts of alkali feldspars and ferromagnetic minerals. Pb2+ and Zn2+ adsorption experiments with various grain size and mineral fractions of the aquifer solids showed that (1) Zn2+ adsorption was independent of grain size, but Pb2+ was preferentially adsorbed by the <64 μm size fraction and (2) Pb2+ adsorption decreased after removal of the paramagnetic, Fe-bearing mineral fraction, but Zn2+ adsorption was unaffected. Pb2+ and Zn2+ adsorption on mineral separates from the aquifer material compared with metal adsorption on a purified quartz powder indicated that adsorption of both metal ions was dominated by coatings on the quartz fraction of the sediment. Characterization of the coatings by AES, SEM-EDS, and TOF-SIMS demonstrated that the natural quartz grains were extensively coated with Al- and Fe-bearing minerals of variable composition. Thin sections of quartz grains examined by TEM showed that the coatings contained both polycrystalline regions and single mineral crystals. The coating thickness varied from < 10 nm up to 30 μm. The coatings were mostly resistant to dissolution by an extraction protocol designed to dissolve noncrystalline phases. The effect on metal adsorption of dissolving surface coatings from the sediment by chemical extraction was also measured. A hydroxylamine-HCl extraction designed to dissolve crystalline Fe oxide phases decreased Pb2+ and Zn2+ adsorption relative to untreated sediment (extracted Fe/Al ≈1), but Pb2+ and Zn2+ adsorption were not appreciably changed after sediment was extracted with dithionite-citrate (extracted Fe/Al ≈5). Overall, the results suggest that Pb2+ preferred to form complexes with iron hydroxyl sites, while aluminol sites were more important for Zn2+ adsorption. However, a definitive understanding of adsorption reactions in groundwaters will require detailed studies of the extensive coatings formed at mineral-water interfaces by chemical weathering processes. Copyright (C) 1995 Elsevier Science Ltd.

Tessier, A., Fortin, D., Belzile, N., DeVitre, R.R. and Leppard, G.G. (1996), Metal sorption to diagenetic iron and manganese oxyhydroxides and associated organic matter: Narrowing the gap between field and laboratory measurements. *Geochimica et Cosmochimica Acta*, **60** (3), 387-404.

Full Text: [G\Geo Cos Act60, 387.pdf](G/Geo%20Cos%20Act60,%20387.pdf)

Abstract: Diagenetic Fe and Mn oxyhydroxides were isolated in situ by vertically inserting inert collectors into the sediments of two geochemically different lakes located near Sudbury, Ontario. X-ray diffraction and electron microscopic analyses indicated that the Fe-rich material collected was predominantly ferri-hydrite and poorly crystallized lepidocrocite, while the Mn-rich material was a mixture of poorly crystallized Mn oxyhydroxides. Conditional adsorption constants (*K*Fe-*M* and *K*Mn-*M*) were calculated using the concentrations of metals (Ca, Cd, Cu, Mg, Ni, Pb, Zn) associated with the Fe- and Mn-rich material and the measured dissolved concentrations of these metals. Comparison of these in situ derived *K*Fe-*M* and*K*Mn-*M* values were made with: (1) the hydrolysis constants of the metals; (2) laboratory-derived intrinsic surface complexation constants obtained for adsorption of these metals on well-characterized Fe and Mn oxyhydroxides, and (3) predicted *K*Fe-*M* and *K*Mn-*M* values determined using the surface complexation model under the geochemical conditions observed in the lakes. Complexation of these metals with adsorbed natural organic matter was also compared to metal complexation with dissolved natural organic matter. The results are consistent with the scenario that trace metals bind directly to the OH groups of the Fe and Mn oxyhydroxides in circumneutral McFarlane Lake and to the functional groups of organic matter adsorbed on Fe oxyhydroxides in the more acidic (pH = 4.8) Clearwater Lake. Alkaline earth metals Ca and Mg bind, presumably as outer-sphere complexes, to the organic coatings. Our results provide support for the argument that laboratory-derived adsorption datasets may be useful for predicting metal adsorption in the field. Copyright (C) 1996 Elsevier Science Ltd.

Boily, J.F and Fein, J.B. (1996), Experimental study of cadmium-citrate co-adsorption onto α-Al2O3. *Geochimica et Cosmochimica Acta*, **60** (16), 2929-2938.

Full Text: [G\Geo Cos Act60, 2929.pdf](G/Geo%20Cos%20Act60,%202929.pdf)

Abstract: An experimental investigation of metal-organic co-adsorption was conducted using cadmium and citrate in the presence of corundum. The experiments were performed in the pH range 3.0 to 10.0 in a 0.01 M NaCl matrix with citrate:Cd ratios of 0.00 and 10.00. The presence of citrate enhances cadmium adsorption between pH 3.5 and 7.2, and reduces it above pH 7.2. The results from the experiments provide constraints on the thermodynamic properties of the surface complexes. We model the adsorption of Cd by quantifying the competition between aqueous CdCit−1 and the surface species, >AlCitCd0, >AlOCd+ and >AlOCdCl0. The experimentally determined equilibrium constants provide a means to predict Cd mobilities in groundwater systems by describing the relative stabilities of surface and aqueous metal-organic complexes as a function of metal-to-ligand and solute-to-sorbent ratios. Copyright (C) 1996 Elsevier Science Ltd.

Turner, G.D., Zachara, J.M., McKinley, J.P. and Smith, S.C. (1996), Surface-charge properties and UO2+2 adsorption of a subsurface smectite. *Geochimica et Cosmochimica Acta*, **60** (18), 3399-3414.

Full Text: [G\Geo Cos Act60, 3399.pdf](G/Geo%20Cos%20Act60,%203399.pdf)

Abstract: Surface charge and UO2+2 adsorption were measured on a clay-sized, subsurface mineral isolate whose mineralogy was dominated by a ferrogenous beidellite. Experiments were performed in batch at 25°C with N2(g) atmosphere and sorbent suspensions (9.46 g clay/kg suspension) that had been adjusted in pH between 4 and 9. Surface charge was defined by measurements of adsorbed Na by isotopic exchange and of proton adsorption by potentiometric titration in NaClO4 (*I* = 0.1, 0.01, 0.001). Extraction of the clay with La(NO3)3 and aqueous-phase analyses were necessary to establish the contributions of Al and Si dissolution to the proton balance and the total adsorbed cation charge (i.e., Na+ads + 3Al3+ads). The adsorption of UO2+2 (7.5×10−6 mol L−1) was determined in Na+ (0.1, 0.01, 0.001 mol L−1) and Ca2+ (0.05 and 0.005 mol L−1) electrolytes. Adsorption of UO2+2 showed contributions of ion exchange and edge complexation reactions in Na+ electrolyte, but by only edge complexation reactions in Ca2+ electrolyte. A multiple-site surface-complexation model containing fixed- (*X*−) and variable-charge sites (SiOH, AlOH) was fit to adsorbed cation charge data between pH 4 and 10, with the concentrations of AlOH, SiOH, and *X*− as the adjustable parameters. Surface acidity and ion-pair formation constants for gibbsite and silica were used to describe the ionization and electrolyte binding of the AlOH and SiOH sites. The model provided an excellent description of the surface-charge characteristics of the clay as measured by sodium isotopic exchange and potentiometric titration. A composite model was formulated to predict UO2+2 adsorption by incorporating UO2+2 aqueous speciation, competitive ion exchange with background electrolyte cations, and UO2+2 complexation with AlOH and SiOH sites. UO2+2 complexation with AlOH and SiOH was parameterized by UO2+2 sorption on α-Al(OH)3(s) and α-SiO2(s), respectively. The composite model overpredicted UO2+2 sorption across the entire pH range in both electrolytes. Acceptable predictions could be obtained if the UO2+2 affinity for edge AlOH sites were adjusted 2.03 log units below that of gibbsite. Changes in chemical affinity arising from lattice substitutions and edge site morphology are, therefore, concluded to contribute significantly to adsorption, although the potential competitive effects of dissolved Al3+ and H4SiO4 could not be discounted. The adsorption of UO2+2 on the subsurface smectite was similar to that of the reference montmorillonite, SWy-1, with the exception that Al dissolution contributed significantly to adsorbed cation charge. Copyright (C) 1996 Elsevier Science Ltd.

Bargar, J.R., Towle, S.N., Brown Jr, G.E. and Parks, G.A. (1996), Outer-sphere Pb(II) adsorbed at specific surface sites on single crystal α-alumina. *Geochimica et Cosmochimica Acta*, **60** (18), 3541-3548.

Full Text: [G\Geo Cos Act60, 3541.pdf](G/Geo%20Cos%20Act60,%203541.pdf)

Abstract: Solvated Pb(II) ions were found to adsorb as structurally well-defined outer-sphere complexes at specific sites on the α-Al2O3 (0001) single crystal surface, as determined by grazing-incidence X-ray absorption fine structure (GI-XAFS) measurements. The XAFS results suggest that the distance between Pb(II) adions and the alumina surface is approximately 4.2 angst. In contrast, Pb(II) adsorbs as more strongly bound inner-sphere complexes on α-Al2O3 (102). The difference in reactivities of the two alumina surfaces has implications for modeling surface complexation reactions of contaminants in natural environments, catalysis, and compositional sector zoning of oxide crystals. Copyright (C) 1996 Elsevier Science Ltd.

Xia, K., Bleam, W. and Helmke, P.A. (1997), Studies of the nature of binding sites of first row transition elements bound to aquatic and soil humic substances using X-ray absorption spectroscopy. *Geochimica et Cosmochimica Acta*, **61** (11), 2223-2235.

Full Text: [G\Geo Cos Act61, 2223.pdf](G/Geo%20Cos%20Act61,%202223.pdf)

Abstract: The coordination environments of first row transition elements (Co, Ni, Cu, and Zn) complexed by aquatic and soil humic substances were studied using X-ray absorption spectroscopy (XAS). With the assistance of bond network analysis, analysis of X-ray absorption near edge structure (XANES) spectra and radial structure functions (RSF) derived from extended X-ray absorption fine structure (EXAFS) spectra of Co, Ni, Cu, and Zn in humic substances indicate an octahedral binding environment for Co, Ni, and Zn and a tetragonally-distorted octahedral binding environment for Cu. Analysis of EXAFS spectra of each element provides detailed information on the internuclear distances, bond angles, and Debye-Waller factors within the first two atomic shells surrounding Co, Ni, Cu, and Zn bound to humic substances. We interpret the presence of C atoms in the second atomic shell of the metal binding site as further evidence that Co, Ni, Cu, and Zn form innersphere complexes with humic substances. The number and type of ligands involved in the binding are different for different elements. Copyright (C) 1997 Elsevier Science Ltd.

Keywords: Ion-Selective Electrode, Near-Edge Structure, Fulvic-Acid, Multiple-Scattering, Stability-Constants, Fine-Structure, Copper(II) Complexation, Complexing Capacity, Xanes Spectroscopy, Aqueous-Solution

Bargar, J.R., Brown Jr, G.E. and Parks, G.A. (1997), Surface complexation of Pb(II) at oxide-water interfaces: I. XAFS and bond-valence determination of mononuclear and polynuclear Pb(II) sorption products on aluminum oxides. *Geochimica et Cosmochimica Acta*, **61** (13), 2617-2637.

Full Text: [G\Geo Cos Act61, 2617.pdf](G/Geo%20Cos%20Act61,%202617.pdf)

Abstract: Pb(II) sorption on Al2O3 powders was studied as functions of sorption density (from 0.5 to 5.2 μmoles/m2) and [Pb]eq (0.03-1.4 mM) in 0.1 M NaNO3 electrolyte solution using XAFS spectroscopy. At pH 6 and 7, Pb(II) ions were found to be fully hydrolyzed and adsorbed preferentially as mononuclear bidentate complexes to edges of AlO6 octahedra. At higher sorption densities (Γ ≥ 3.4 μmoles.m−2), XAFS results suggest the presence of dimeric Pb(II) surface complexes. A bond-valence model was used in conjunction with these results to constrain the compositions and reaction stoichiometries of adsorption complexes. We conclude that Pb(II) adsorption on alumina is attributable to complexation by [AlAlAlO-1/2] and [Al-OH-1/2] surface functional groups. Several plausible Pb(II) adsorption reactions are proposed, based on these results, which provide a basis for chemically realistic descriptions of surface complexation of Pb(II) on aluminum oxides. Copyright (C) 1997 Elsevier Science Ltd.

Bargar, J.R., Brown Jr, G.E. and Parks, G.A. (1997), Surface complexation of Pb(II) at oxide-water interfaces: II. XAFS and bond-valence determination of mononuclear Pb(II) sorption products and surface functional groups on iron oxides. *Geochimica et Cosmochimica Acta*, **61** (13), 2639-2652.

Full Text: [G\Geo Cos Act61, 2639.pdf](G/Geo%20Cos%20Act61,%202639.pdf)

Abstract: Pb(II) sorption on goethite and hematite powders was studied at room temperature as a function of pH (6-8), sorption density (2-10 μmoles/m2), and [Pb]eq (0.2 μM − 1.2 mM) in 0.1 M NaNO3 electrolyte using XAFS spectroscopy. Pb(II) ions were found to be hydrolyzed and adsorbed as mononuclear bidentate complexes to edges of FeO6 octahedra on both goethite and hematite under all conditions. Hydrolysis of Pb(II) appears to be a primary source of proton release associated with surface complexation of Pb(II). A bond-valence model was used to relate the relative stabilities of iron-oxide surface functional groups and Pb(II) adsorption complexes to their structures and compositions. This combined approach suggests that Pb(II) adsorption occurs primarily at unprotonated [FeFeFeO-1/2] sites and at [Fe—OH2+1/2] sites. Several adsorption reactions are proposed. Comparison to EXAFS results from Pb(II) adsorption on aluminum oxides suggests that the edge lengths of surface AlO6 or FeO6 octahedra partially determine the reactivities and densities of available surface sites. The results of this study provide a basis for constructing chemically realistic descriptions of Pb(II) surface complexation reactions on Fe (hydr) oxides. Copyright (C) 1997 Elsevier Science Ltd

Farquhar, M.L., Vaughan, D.J., Hughes, C.R., Charnock, J.M. and England, K.E.R. (1997), Experimental studies of the interaction of aqueous metal cations with mineral substrates: Lead, cadmium, and copper with perthitic feldspar, muscovite, and biotite. *Geochimica et Cosmochimica Acta*, **61** (15), 3051-3064.

Full Text: [G\Geo Cos Act61, 3051.pdf](G/Geo%20Cos%20Act61,%203051.pdf)

Abstract: The interactions between each of the metal ions copper(II), cadmium(II), and lead(II) in aqueous solution and the surfaces of the minerals muscovite, biotite, and perthitic feldspar have been studied using batch sorption experiments and X-ray photoelectron (XPS) and X-ray absorption (XAS) spectroscopies. The purpose of the work has been to establish the extent of removal from solution of these metal ions by interaction with the mineral surfaces and the mechanisms involved (whether ion exchange, precipitation, or adsorption).

The experiments utilised both powdered samples and flat polished or cleaved surfaces of natural minerals which were characterised compositionally and structurally by electron probe microanalysis and X-ray diffraction. Reaction solutions contained Cu(II), Cd(II), or Pb(II) in a background electrolyte of NaNO3 (0.1 or 0.01 M) at a pH of 5.4 ±0.2 with a wide range of initial concentrations. The extent of uptake of each of the metals by a particular mineral substrate was measured by analysis of the liquid portion separated by centrifugation after a controlled period of exposure (solution analyses were performed by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy as appropriate). The data obtained were used to plot sorption isotherms for the various metal ions and substrates showing the dependence of uptake on initial concentration of metal in solution and background electrolyte concentration. Studies of the reacted mineral surfaces using XPS were used to identify the chemical speciation and bonding environment of Cu, Cd, and Pb present at the surface and to assess surface coverage in planar surface samples and whether significant infiltration of the metal cation into the mineral surface had occurred. Parallel studies using XAS (in particular Extended X-ray Absorption Fine Structure Spectroscopy-EXAFS) were employed to determine the local environments of Cu, Cd, and Pb at the surface of powdered mineral samples. Planar surfaces of muscovite, biotite, and perthitic feldspar exposed to Cu(II) and of muscovite exposed to Cd(II) were also studied using Reflection Extended X-ray Absorption Fine Structure (REFLEXAFS) spectroscopy.

The results show that muscovite, biotite, and perthitic feldspar have surfaces that can strongly interact with (and remove) particularly Cu(II) and Pb(II) in such mildly acidic aqueous solutions. Biotite also strongly interacts with Cd(II) in solution. Generally biotite provides the most reactive mineral surface followed by muscovite, with perthitic feldspar being the least reactive. of the possible mechanisms for removal of metals under the conditions of these experiments, precipitation was not observed, but three other mechanisms (inner-sphere complexation, outer-sphere complexation, and ion exchange) were all observed. The inner-sphere complexation and ion exchange mechanisms often take place in combination: however, Pb(II) forms no outer-sphere complexes on the surfaces of these minerals, and Cd(II) forms only outer-sphere complexes with perthitic feldspar and muscovite. Cu(II) in solution promotes the release of K+ from the surface region of muscovite and, particularly, biotite, and subsequent uptake of Cu(II) by ion exchange.

These findings have important environmental implications and show the significant role that major rock-forming aluminosilicates may play in the geochemical cycling of Cu(II), Cd(II), and Pb(II). Copyright (C) 1997 Elsevier Science Ltd.

Fein, J.B., Daughney, C.J., Yee, N. and Davis, T.A. (1997), A chemical equilibrium model for metal adsorption onto bacterial surfaces. *Geochimica et Cosmochimica Acta*, **61** (16), 3319-3328.

Full Text: [G\Geo Cos Act61, 3319.pdf](G/Geo%20Cos%20Act61,%203319.pdf)

Abstract: This study quantifies metal adsorption onto cell wall surfaces of Bacillus subtilis by applying equilibrium thermodynamics to the specific chemical reactions that occur at the water-bacteria interface. We use acid/base titrations to determine deprotonation constants for the important surface functional groups, and we perform metal-bacteria adsorption experiments, using Cd, Cu, Pb, and Al, to yield site-specific stability constants for the important metal-bacteria surface complexes. The acid/base properties of the cell wall of B. subtilis can best be characterized by invoking three distinct types of surface organic acid functional groups, with pK (a) values of 4.82±0.14, 6.9±0.5, and 9.4±0.6. These functional groups likely correspond to carboxyl, phosphate, and hydroxyl sites, respectively, that are displayed on the cell wall surface. The results of the metal adsorption experiments indicate that both the carboxyl sites and the phosphate sites contribute to metal uptake. The values of the log stability constants for metal-carboxyl surface complexes range from 3.4 for Cd, 4.2 for Pb, 4.3 for Cu, to 5.0 for Al. These results suggest that the stabilities of the metal-surface complexes are high enough for metal-bacterial interactions to affect metal mobilities in many aqueous systems, and this approach enables quantitative assessment of the effects of bacteria on metal mobilities.

Peterson, M.L., Brown, G.E., Parks, G.A. and Stein, C.L. (1997), Differential redox and sorption of Cr(III/VI) on natural silicate and oxide minerals: EXAFS and XANES results. *Geochimica et Cosmochimica Acta*, **61** (16), 3399-3412.

Full Text: [G\Geo Cos Act61, 3319.pdf](G/Geo%20Cos%20Act61,%203319.pdf)

Abstract: Synchrotron-based X-ray absorption fine structure (XAFS) spectroscopy was used to investigate the reduction of aqueous Cr(VI) to Cr(III) in magnetite-bearing soils from Cr-contaminated sites. Soils from two field sites were examined, showing that mixed-valence Cr(III/VI) effluent is reduced to Cr(III) when associated with the magnetite fraction of the soil, whereas the Cr effluent associated with non-Fe(II)-bearing minerals results in mixed Cr(III/VI) adsorbates or precipitated phases. The Fe2+ in magnetite, Fe2+Fe23+O4, may act as an electron source for heterogeneous Cr(VI)-to-Cr(III) reduction, converting magnetite topotactically to maghemite, gamma-Fe23+O3. The ratio of Cr(VI)/total Cr was determined by the height of the Cr(VI) XAFS pre-edge feature, which is due to a 1s to 3d electronic transition. This pre-edge feature was calibrated as a function of Cr(VI)/Cr(III) using mixtures of Cr(III) and Cr(VI) model compounds. Environmental remediation of Cr-contaminated sites requires knowledge of chromium oxidation and speciation, and XAFS spectroscopy may be used to supply both types of information with minimal sample processing or data analysis. Copyright (C) 1997 Elsevier Science Ltd.

Keywords: Ray-Absorption-Spectra, Zero-Valent Iron, Chromate Reduction, Spectroscopy, Chromium, Metals, Groundwater, Adsorption, Interface, Xafs

Huertas, F.J., Chou, L. and Wollast, R. (1998), Mechanism of kaolinite dissolution at room temperature and pressure: Part 1. Surface speciation. *Geochimica et Cosmochimica Acta*, **62** (3), 417-431.

Full Text: [G\Geo Cos Act62, 417.pdf](G/Geo%20Cos%20Act62,%20417.pdf)

Abstract: Surface speciation of Georgia kaolinite was investigated by detailed potentiometric titrations (pH 2-12) at various ionic strengths in KClO4 solutions (0.1, 0.01, 0.001 M) under N2 atmosphere, corrected for Si and Al released due to dissolution. Proton adsorption or desorption was computed according to surface complexation models (nonelectrostatic model and constant capacitance model), assuming the presence of multi-sites at the surface. The behaviour of the surface may be explained by the formation of four active sites (two >AlOH2+ >AlO-, >SiO-). The pH of zero proton charge was found to be similar to 5.5. Below pH 5.5, the positive charge is due to the proton adsorption on aluminium sites of the octahedral sheet. The more acidic group corresponds to the external hydroxyls of the octahedral sheet, whereas the second protonation may take place either at the inner hydroxyl groups or at the edge aluminol groups. The corresponding intrinsic surface dissociation constants for these species (pK(a1)=1.9 acid pK(a1)=4.1, respectively) are substantially lower than that for aluminium oxides (pK(a1)=4.5-8). Above pH 5.5, the kaolinite surface undergoes two successive deprotonations, the first starts at pH around 5.5 and the second at pH approximately equal to 9. In comparison with the pK values for surface dissociation of silica and alumina, it is possible to deduce that the first deprotonation takes place at Si sites, while the second occurs at Al sites. Copyright (C) 1998 Elsevier Science Ltd.

Keywords: Water Interface, Coordination Chemistry, Simple Electrolytes, Cadmium Sorption, Aqueous-Solution, Ion Adsorption, Kinetics, Charge, Montmorillonite, Oxide

Eggleston, C.M. and Jordan, G. (1998), A new approach to pH of point of zero charge measurement: Crystal-face specificity by scanning force microscopy (SFM). *Geochimica et Cosmochimica Acta*, **62** (11), 1919-1923.

Full Text: [G\Geo Cos Act62, 1919.pdf](G/Geo%20Cos%20Act62,%201919.pdf)

Abstract: The pH of point of zero charge (pHpzc) is a fundamentally important property used in modeling the interaction of solid surfaces with aqueous solutions and solutes. The pHpzc is normally measured by acid-base titration of solid suspensions. Here, a scanning force microscope (SFM) is used to measure forces of repulsion or attraction between chemically tailored tips and quartz (101) and hematite (001) surfaces, as a function of tip-surface separation and pH. The force at contact (FAC) is at a minimum near the expected point of pHpzc for a chemically similar tip and sample. The results are compared to predicted interaction forces from a simple DLVO model, which shows that the SFM technique for pHpzc measurement is most promising for surfaces (such as iron oxides) that have not-too-widely spaced pKa1 and pKa2 values for surface site deprotonation. However, improvements in precision will be necessary to fully utilize the technique.

The SFM approach to pHpzc measurement may in future allow the measurement of crystal-face-specific pHpzc, rather than a weighted average of all exposed surface sites, and thus allow us to ask better-defined structure-reactivity questions for mineral surfaces. The approach can in theory be extended to the single-site scale in order to probe the properties (e.g., potential and charge) of individual terrace, step, or kink sites. Copyright (C) 1998 Elsevier Science Ltd

Lenhart, J.J. and Honeyman, B.D. (1999), Uranium(VI) sorption to hematite in the presence of humic acid. *Geochimica et Cosmochimica Acta*, **63** (19-20), 2891-2901.

Full Text: [G\Geo Cos Act63, 2891.pdf](G/Geo%20Cos%20Act63,%202891.pdf)

Abstract: A long-standing problem in aquatic geochemistry has been the incorporation of natural organic matter (NOM) into speciation models. The general effect of NOM on metal ion sorption by particles has been understood for some time, and significant progress has been made in elucidating some of the details of the role of NOM through the use of surrogate organic acids such as citric acid. However, a gap exists between the general observations that have been made of NOM behavior and the inclusion of NOM in surface chemical models for metal ion sorption. In this paper, we report on the results of a study on the sorption of U(VI) by hematite in the absence and presence of Suwannee river humic acid (HA) and over a range of other system conditions (e.g., pH, I). Essential HA characteristics (e.g., its acid/base, metal binding, and surface chemical properties) were “captured” by representing the HA as an assembly of monoprotic acids with assumed pK values and without explicit correction for electrostatic effects. The ternary system (hematite/HA/U(VI)) was simulated through the combination of the binary submodels (i.e., CO32-/hematite, U(VI)/HA, U(VI)/hematite, and HA/hematite) with model constants fixed at the values determined from simulations of the respective experimental systems. However, the “summed-binary” approach undersimulated experimental results, and the ternary system model required the postulation of two ternary surface (Type A) complexes composed of the uranyl ion, hematite surface sites, and the model ligands comprising the HA. Consideration of the HA in this manner permitted the simulation of HA effects on U(VI) sorption by hematite over a range of solution conditions using a general speciation model. Copyright (C) 1999 Elsevier Science Ltd.

Keywords: Oxide-Water Interface, Metal Humate Interactions, Dissolved Organic-Matter, Surface Complexation, Cation Binding, Natural-Waters, Proton Binding, Aluminum-Oxide, Hydrous Oxides, Adsorption

Au, K.K., Penisson, A.C., Yang, S.L. and O’Melia, C.R. (1999), Natural organic matter at oxide/water interfaces: Complexation and conformation. *Geochimica et Cosmochimica Acta*, **63** (19-20), 2903-2917.

Full Text: [G\Geo Cos Act63, 2903.pdf](G/Geo%20Cos%20Act63,%202903.pdf)

Abstract: A conceptual model for the adsorption of linear, flexible weak polyelectrolytes on oxide surfaces is applied to the adsorption and conformation of natural organic matter (NOM) on hematite. The polyelectrolytic nature of NOM and the complexation (specific) interactions between the functional groups of NOM and oxide surface sites are taken into account in this model. Model results are compared with experimental data for adsorption of Suwannee River humic acid on hematite at different pHs and ionic strengths. When the initial surface charge of hematite is positive (termed the oppositely charged case), the experimental adsorption density and adsorbed hydrodynamic layer thickness decrease with increasing pH and with decreasing ionic strength. When the initial surface charge is negative (termed the similarly charged case), the experimental adsorption density decreases with increasing pH and the adsorbed hydrodynamic layer thickness increases with increasing pH. Model results with a reaction represented by >MeOH + L− = >MeOHL− agree with the experimental adsorption density and adsorbed hydrodynamic layer thickness for the oppositely charged case, and the adsorption density for the similarly charged case. This suggests that the adsorption of NOM on hematite is related to the polyelectrolytic nature of NOM and to the complexation interactions between the neutral surface sites of oxides and the deprotonated functional groups of NOM. The effects of solution chemistry on the adsorption of NOM are due to a great extent to its effects on surface and NOM speciation, which can influence the specific interactions between NOM and surface sites. Model calculations also indicate that for the oppositely charged case, the adsorbed NOM overcompensates for the positive charge of the hematite surface. Simulations of electric potential and volume fraction indicate an interrelationship between the adsorption of NOM and interfacial properties.

Bargar, J.R., Persson, P. and, Brown, Jr., G.E. (1999), Outer-sphere adsorption of Pb(II)EDTA on goethite. *Geochimica et Cosmochimica Acta*, **63** (19-20), 2957-2969.

Full Text: [G\Geo Cos Act63, 2957.pdf](G/Geo%20Cos%20Act63,%202957.pdf)

Abstract: Fourier transform infrared (FTIR) and extended X-ray absorption fine structure (EXAPS) spectroscopic measurements were performed on Pb(II)ethylenediaminetetraacetic (EDTA) adsorbed on goethite as a function of pH (4-6), Pb(II)EDTA concentration (0.11-72 µM), and ionic strength (16 µM-0.5 M). FTIR measurements show no evidence for carboxylate-Fe(III) bonding or protonation of EDTA at Pb:EDTA = 1:1. Both FTIR and EXAFS spectroscopic measurements suggest that EDTA acts as a hexadentate ligand, with all four of its carboxylate and both of its amine groups bonded to Pb(II). No evidence was observed for inner-sphere Pb(II)-goethite bonding at Pb:EDTA = 1:1. Hence, the adsorbed complexes should have composition Pb(II)EDTA(2-). Because substantial uptake of PbEDTA(II)(2-) occurred in the samples, we interpret that Pb(II)EDTA(2-) adsorbed as outer-sphere complexes and/or as complexes that lose part of their solvation shells and hydrogen bond directly to goethite surface sites. We propose the term “hydration-sphere” for the latter type of complexes because they should occupy space in the primary hydration spheres of goethite surface functional groups and to distinguish this mode of sorption from common structural definitions of inner- and outer-sphere complexes. The lack of evidence for inner-sphere EDTA-Fe(III) bonding suggests that previously proposed metal/ligand-promoted dissolution mechanisms should be modified, specifically to account for the presence of outer-sphere precursor species. Copyright (C) 1999 Elsevier Science Ltd.

Keywords: X-Ray-Absorption, Bond-Valence Determination, Oxide-Water Interfaces, Metal-Edta Complexes, Boehmite Gamma-Alooh, Surface Functional-Groups, Sorption Products, Fine-Structure, Natural-Waters, Alpha-Feooh

Kraemer, S.M., Cheah, S.F., Zapf, R., Xu, J.D., Raymond, K.N. and Sposito, G. (1999), Effect of hydroxamate siderophores on Fe release and Pb(II) adsorption by goethite. *Geochimica et Cosmochimica Acta*, **63** (19-20), 3003-3008.

Full Text: [G\Geo Cos Act63, 3003.pdf](G/Geo%20Cos%20Act63,%203003.pdf)

Abstract: Hydroxamate siderophores are biologically-synthesized, Fe(III)-specific ligands which are common in soil environments. In this paper, we report an investigation of their adsorption by the iron oxyhydroxide, goethite; their influence on goethite dissolution kinetics; and their ability to affect Pb(II) adsorption by the goethite surface. The siderophores used were desferrioxamine B (DFO-B), a fungal siderophore, and desferrioxamine D-1, an acetyl derivative of DFO-B (DFO-D1). Siderophore adsorption isotherms yielded maximum surface concentrations of 1.5 (DFO-B) or 3.5 (DFO-D1) µmol/g at pH 6.6, whereas adsorption envelopes showed either cation-like (DFO-B) or ligand-like (DFO-D1) behavior. Above pH 8, the adsorbed concentrations of both siderophores were similar. The dissolution rate of goethite in the presence of 240 µM DFO-B or DFO-D1 was 0.02 or 0.17 µmol/g hr, respectively. Comparison of these results with related literature data. on the reactions between goethite and acetohydroxamic acid, a monohydroxamate ligand, suggested that the three hydroxamate groups in DFO-D1 coordinate to Fe(III) surface sites relatively independently. The results also demonstrated a significant depleting effect of 240 µM DFO-B or DFO-D1 on Pb(II) adsorption by goethite at pH > 6.5, but there was no effect of adsorbed Pb(II) on the goethite dissolution rate. Copyright (C) 1999 Elsevier Science Ltd.

Keywords: Water Interface, Coordination Chemistry, Surface Complexation, Iron, Dissolution, Lead, Mechanism

Fowle, D.A. and Fein, J.B. (1999), Competitive adsorption of metal cations onto two gram positive bacteria: Testing the chemical equilibrium model. *Geochimica et Cosmochimica Acta*, **63** (19-20), 3059-3067.

Full Text: [G\Geo Cos Act63, 3059.pdf](G/Geo%20Cos%20Act63,%203059.pdf)

Abstract: In order to test the ability of a surface complexation approach to account for metal-bacteria interactions in near surface fluid-rock systems, we have conducted experiments that measure the extent of adsorption in mixed metal, mixed bacteria systems. This study tests the surface complexation approach by comparing estimated extents of adsorption based on surface complexation modeling to those we observed in the experimental systems. The batch adsorption experiments involved Ca, Cd, Cu, and Pb adsorption onto the surfaces of 2 g positive bacteria: Bacillus subtilis and Bacillus licheniformis. Three types of experiments were performed:

1. Single metal (Ca, Cu, Pb) adsorption onto a mixture of B. licheniformis and B. subtilis;

2. mixed metal (Cd, Cu, and Pb; Ca and Cd) adsorption onto either B. subtilis or B. licheniformis; and

3. mixed or single metal adsorption onto B. subtilis and B. licheniformis.

Independent of the experimental results, and based on the site specific stability constants for Ca, Cd, Cu, and Pb interactions with the carboxyl and phosphate sites on B. licheniformis and B. subtilis determined by Fein et al. (1997), by Daughney et al. (1998) and in this study, we estimate the extent of adsorption that is expected in the above experimental systems.

Competitive cation adsorption experiments in both single and double bacteria systems exhibit little adsorption at pH values less than 4. With increasing pH above 4.0, the extent of Ca, Cu, Pb and Cd adsorption also increaser due to the increased deprotonation of bacterial surface functional groups. In all cases studied, the estimated adsorption behavior is in excellent agreement with the observations, with only slight differences that were within the uncertainties of the estimation and experimental procedures. Therefore, the results indicate that the use of chemical equilibrium modeling of aqueous metal adsorption onto bacterial surfaces yields accurate predictions of the distribution of metals in complex multicomponent systems. Copyright (C) 1999 Elsevier Science Ltd.

Keywords: Amorphous Iron Oxyhydroxide, *Bacillus-Subtilis*, Heavy-Metals, Ion Binding, Cell-Walls, Sorption, Surfaces, Cd, Cu, Zn

Chen, C.C. and Hayes, K.F. (1999), X-ray absorption spectroscopy investigation of aqueous Co(II) and Sr(II) sorption at clay–water interfaces. *Geochimica et Cosmochimica Acta*, **63** (19-20), 3205-3215.

Full Text: [G\Geo Cos Act63, 3205.pdf](G/Geo%20Cos%20Act63,%203205.pdf)

Abstract: Sorption processes typically control trace metal concentrations in aquatic systems. To illustrate the impact of various types of surface sites on metal ion sorption behavior, Co(II) and Sr(II) sorption by several clay minerals under a range pH and background electrolyte conditions was studied. X-ray absorption spectroscopy (XAS) was used to characterize the surface complexes formed to explain the basis for the sorption trends. At low pH, Co(II) could be displaced from the surface by increasing the Na ion concentration. XAS analysis of these samples showed that sorbed Co(II) retained the coordination structure of aqueous phase Co(II), suggesting the formation of weakly associated, outer-sphere, mononuclear Co complexes at permanent charge sites. At high pH, sorbed Co could not be displaced by increasing the Na ion concentration. The XAS analyses of these samples indicated the formation of Co coprecipitates. The results of the Sr(II) sorption experiments suggested weaker bonding between sorbed Sr and the solid surfaces, regardless of solution conditions and adsorbent. XAS analysis of Sr sorption samples revealed the formation of mononuclear, outer-sphere complexes of Sr at clay–water interfaces, similar to the outer-sphere Co sorption samples observed only at low pH. Copyright (C) 1999 Elsevier Science Ltd.

Langmuir, D., Mahoney, J., MacDonald, A. and Rowson, J. (1999), Predicting arsenic concentrations in the porewaters of buried uranium mill tailings. *Geochimica et Cosmochimica Acta*, **63** (19-20), 3379-3394.

Full Text: [G\Geo Cos Act63, 3379.pdf](G/Geo%20Cos%20Act63,%203379.pdf)

Abstract: The proposed JEB Tailings Management Facility (TMF) to be emplaced below the groundwater table in northern Saskatchewan, Canada, will contain uranium mill tailings from McClean Lake, Midwest and Cigar Lake ore bodies, which are high in arsenic (up to 10%) and nickel (up to 5%). A serious concern is the possibility that high arsenic and nickel concentrations may be released from the buried tailings, contaminating adjacent groundwaters and a nearby lake. Laboratory tests and geochemical modeling were performed to examine way!; to reduce the arsenic and nickel concentrations in TMF porewaters so as to minimize such contamination from tailings buried for 50 years and longer. The tests were designed to mimic conditions in the mill neutralization circuit (3 hr tests at 25°C), and in the TMF after burial (5-49 day aging tests). The aging tests were run at, 50, 25 and 4°C (the temperature in the TMF). In order to optimize the removal of arsenic by adsorption and precipitation, ferric sulfate was added to tailings raffinates(1) having Fe/As ratios of less that 3-5. The acid raffinates were then neutralized by addition of slaked lime to nominal pH values of 7, 8, or 9. Analysis and modeling of the test results showed that with slaked lime addition to acid tailings raffinates, relatively amorphous scorodite (ferric arsenate) precipitates near pH 1, and is the dominant form of arsenate in slake limed tailings solids except those high in Ni and As and low in Fe, in which cabrerite-annabergite (Ni, Mg, Fe(II) arsenate) may also precipitate near pH 5-6. In addition to the arsenate precipitates, smaller amounts of arsenate are also adsorbed onto tailings solids. The aging tests showed that after burial of the tailings, arsenic concentrations may increase with time from the breakdown of the arsenate phases (chiefly scorodite). However, the tests indicate that the rate of change decreases and approaches zero after 72 hrs at 25°C, and may equal zero at all times in the TMF at 4°C. Consistent with a kinetic model that describes the rate of breakdown of scorodite to form hydrous ferric oxide, the rate of release of dissolved arsenate to tailings porewaters from slake limed tailings: (1) is proportional to pH above pH 6-7; (2) decreases exponentially as the total molar Fe/As ratio of tailings raffinates is increased from 1/1 to greater than 5/1; and (3) is proportional to temperature with an average Arrhenius activation energy of 13.4±4.2 kcal/mol. Study results suggest that if ferric sulfate and slaked lime are added in the tailings neutralization circuit to give a raffinate Fe/As molar ratio of at least 3-5 and a nominal (initial) pH of 8 (final pH of 7-8), arsenic and nickel concentrations of 2 mg/L or less, are probable in porewaters of individual tailings in the TMF for 50 to 10,000 yrs after tailings disposal. However, the tailings will be mixed in the TMF, which will contain about 35% tailings with Fe/As = 3.0, and 65% tailings with Fe/As = 5.0-7.7. Thus, it seems likely that average arsenic pore water concentrations in the TMF may not exceed 1 mg/L. (C) 1999 Elsevier Science Ltd.

Keywords: Adsorption, Ferrihydrite, Transformation, Hydroxide, Scorodite, Stability, Sorption, Minerals, Kinetics, Oxides

Filius, J.D., Lumsdon, D.G., Meeussen, J.C.L., Hiemstra, T. and van Riemsdijk, W.H. (2000), Adsorption of fulvic acid on goethite. *Geochimica et Cosmochimica Acta*, **64** (1), 51-60.

Full Text: [G\Geo Cos Act64, 51.pdf](G/Geo%20Cos%20Act64,%2051.pdf)

Abstract: The adsorption of fulvic acid by goethite was determined experimentally as a function of concentration, pH, and ionic strength. The data were described with the CD-MUSIC model of Hiemstra and van Riemsdijk (1996), which allows the distribution of charge of the bound fulvate molecule over a surface region. Simultaneously, the concentration, pH, and salt dependency of the binding of fulvic acid can be described. Using the same parameters, the basic charging behavior of the goethite in the absence of fulvic acid could be described well. The surface species used in the model indicate that inner sphere coordination of carboxylic groups of the fulvate molecule is important at low pH, whereas at high pH the outer sphere coordination with reactive groups of the fulvate molecule with high proton affinity is important. Copyright (C) 1999 Elsevier Science Ltd.

Keywords: Dissolved Organic-Matter, Humic Substances, Proton Binding, Surface Complexation, Solution Interface, Aqueous-Solution, Ion Adsorption, Hydrous Oxides, Model, Mechanisms

Wang, Z., Ainsworth, C.C., Friedrich, D.M., Gassman, P.L. and Joly, A.G. (2000), Kinetics and mechanism of surface reaction of salicylate on alumina in colloidal aqueous suspension. *Geochimica et Cosmochimica Acta*, **64** (7), 1159-1172.

Full Text: [G\Geo Cos Act64, 1159.pdf](G/Geo%20Cos%20Act64,%201159.pdf)

Abstract: The reaction kinetics of salicylate with Al(III) in aqueous solution and at the colloidal alumina–water interface was studied by stopped-flow laser fluorescence spectroscopy. Temporal evolution of the fluorescence spectra suggests that formation of a carboxylate monodentate complex was the reaction intermediate that occurs transiently at the beginning of the reaction in aqueous salicylate–Al(III) solution. However, by lowering the pH to 2.0, the formation of such an intermediate can be directly observed as it is the only species formed. The reaction of salicylate with aqueous Al3+ is completed within 10 min at pH 3.3 but is significantly slower at pH 2.0. At both pH the aqueous reaction follows a single pseudo-first order rate law. In alumina suspension the reaction was initially fast but slowed down after http://sdos.ejournal.ascc.net/images/glyphs/BQ1.GIF30 s. Completion of the reaction took up to 12 h, depending on pH and ionic strength. The formation of a carboxylate monodentate surface complex as a transient species is clearly observed in alumina suspensions at near neutral pH. The initial rapid reaction (<30 s), accounting for http://sdos.ejournal.ascc.net/images/glyphs/BQ1.GIF70% of the total reaction, can be best described by the Elovich rate equation and the slower reaction, accounting for http://sdos.ejournal.ascc.net/images/glyphs/BQ1.GIF30% of the total reaction, obeys pseudo-first order kinetics. These results are consistent with a sorption reaction mechanism that is controlled by the leaving group lability at the surface sites (Al–OH2+ and Al–OH). The pseudo-first order rate constant varies little with initial salicylate concentration, ionic strength, or pH > 4, suggesting that the slow reaction pathway involves ligand substitution reactions between salicylate and the hydroxyl groups for which the Al–O binding and activation energy are affected by site heterogeneity or site density to a lesser degree than Al–OH2+ sites.

Yan, X.P., Kerrich, R. and Hendry, M.J. (2000), Distribution of arsenic(III), arsenic(V) and total inorganic arsenic in porewaters from a thick till and clay-rich aquitard sequence, Saskatchewan, Canada. *Geochimica et Cosmochimica Acta*, **64** (15), 2637-2648.

Full Text: [G\Geo Cos Act64, 2637.pdf](G/Geo%20Cos%20Act64,%202637.pdf)

Abstract: Inorganic arsenic species were measured in the porewaters collected from eighteen piezometers installed between 3 and 91.4 m below ground in a thick till and clay-rich aquitard sequence located in southern Saskatchewan to investigate the distribution of, and controls on arsenic speciation in the sequence. Aqueous concentrations of As(V), As(III) and total As are in the range of 0.31-97, 0.71-21 and 3.2-98 ppb, respectively. Profiles of As(III) and As(V) concentration distribution with depth broadly track that of total As: erratic increases to 15.2 m, then more uniform concentrations to 88 m. Aqueous arsenic is accumulated at the upper redox transition zone (6-14 m). The alkaline porewater at 91.4 m contains the highest concentrations of As(V) and total As, which might result from the facilitated desorption of arsenate from the host solid due to decrease of positive surface charge of the oxides in alkaline solution. The ratio of As(V)/As(III) is greater than unity in the uppermost oxidized porewater (3 m), less than unity from 4.6 to 71.6 m, and greater than unity in the lowest four porewaters (76.2 to 91.4 m). In the 3 m porewater low As(III) but high As(V)/As(III) is due to the oxidized nature of the near surface weathered till. The high As(V)/As(III) in the deepest porewater at 91.4 m likely results from the enhanced and heterogeneous oxidation of As(III) to As(V) on clay mineral surfaces in the alkaline solution. Total As and arsenic speciation may not be controlled by As, Fe or Mn concentrations in the host till or clay. Dissolved As(V) and total As positively covary with aqueous chloride, whereas dissolved As(III) is independent of aqueous chloride. Aqueous As(III), and to a less extent As(V) and total As are positively correlated with dissolved Mn in the till. In the clay, aqueous As(V) and total As show strong negative covariation with Mn. However, aqueous As(III), As(V) and total As exhibit almost no correlation with total dissolved Fe in the till. The As(V)/As(III) ratio has strong negative correlation with dissolved Mn, but positive covaration with dissolved chloride. Generally good agreement between the redox potentials (Eh) calculated from aqueous As(V) and As(III) concentrations and those measured by a Pt electrode throughout most of the unoxidized till suggests the suitability of using As(V)-As(III) redox couple as a redox indicator for the studied aquitard system. However, large negative bias of the calculated Eh from the measured Eh in the oxidized till/upper unoxidized till and the clay is attributed to errors associated with the field measurements of Eh. Copyright (C) 2000 Elsevier Science Ltd.

Keywords: Amorphous Iron Hydroxide, Drinking-Water, Groundwater, Speciation, Adsorption, Lake, Geochemistry, Environment, Chemistry, Aquifer

Zhou, Q.H., Maurice, P.A. and Cabaniss, S.E. (2001), Size fractionation upon adsorption of fulvic acid on goethite: Equilibrium and kinetic studies. *Geochimica et Cosmochimica Acta*, **65** (5), 803-812.

Full Text: [G\Geo Cos Act65, 803.pdf](G/Geo%20Cos%20Act65,%20803.pdf)

Abstract: We examined adsorption equilibrium and kinetics of an aquatic fulvic acid (XAD-8 resin extract) onto goethite (alpha-FeOOH). Molecular weight distributions were determined using high-pressure size exclusion chromatography (HPSEC). Overall adsorption isotherms and those of the most abundant intermediate molecular weight (IMW) fraction (1250-3750 Da) fit the Langmuir adsorption equation, as is commonly observed for humic substances. However, this overall fit masked the non-Langmuir isotherm shape of high and low molecular weight (HMW, LMW, respectively) fractions. We observed preferential adsorption of HMW fractions at low pH and of IMW fractions at higher pH. We also observed preferential adsorption of components with higher absorbance normalized to moles C (epsilon (280)), probably reflecting greater aromaticity. Over the first 6 h of adsorption experiments, adsorbed organic carbon increased and weight average molecular weight (M-w) of the organic matter remaining in solution decreased, consistent with slower adsorption of higher molecular weight components. Observations of fractionation upon adsorption agreed well with a field study showing lower M-w and lower epsilon (280) organic matter in deeper ground water relative to surface and shallow ground water. Copyright (C) 2001 Elsevier Science Ltd.

Keywords: Natural Organic-Matter, Aquatic Humic Substances, Molecular-Weight, Iron-Oxide, Polyacrylic-Acid, Mineral Particles, Water, Polydispersity, Displacement, Sorption

Daughney, C.J., Fowle, D.A. and Fortin, D. (2001), The effect of growth phase on proton and metal adsorption by Bacillus subtilis. *Geochimica et Cosmochimica Acta*, **65** (7), 1025-1035.

Full Text: [G\Geo Cos Act65, 1025.pdf](G/Geo%20Cos%20Act65,%201025.pdf)

Abstract: Several recent studies have applied surface complexation models to quantify metal adsorption by bacterial surfaces. Although these models can account for the effects of many abiotic variables (such as pH and ionic strength), to date, the effects of biotic variables (such as growth phase) have not been investigated. In this study, we quantify the effect of growth phase on surface site concentrations, deprotonation constants, and metal-binding constants by performing acid-base titrations and Cd and Fe(III) batch adsorption experiments using suspensions containing *Bacillus subtilis* cultured to exponential, stationary, and sporulated phase. For each type of surface site, concentrations and p*K*a values describing deprotonation decrease as the cells move from exponential to stationary phase, but remain constant from stationary to sporulated phase. Due to the variations in site concentrations and deprotonation constants, Cd and Fe(III) binding constants are largest for stationary-phase cells and smallest for sporulated cells, even though cells in stationary phase adsorb roughly 5% to 10% less metal (per unit weight) than exponential-phase cells, and roughly 10% to 20% more metal than sporulated cells. These variations in surface complexation model parameters indicate that any attempt to predict proton or metal adsorption by bacteria must consider the growth phase of the population. Copyright (C) 2001 Elsevier Science Ltd.

Yee, N. and Fein, J. (2001), Cd adsorption onto bacterial surfaces: A universal adsorption edge? *Geochimica et Cosmochimica Acta*, **65** (13), 2037-2042.

Full Text: [G\Geo Cos Act65, 2037.pdf](G/Geo%20Cos%20Act65,%202037.pdf)

Abstract: In this study, we measure the thermodynamic stability constants for proton and Cd binding onto the Gram-negative bacteria *Escherichia coli* and *Pseudomonas aeruginosa*, and the Gram-positive bacteria *Bacillus megaturium*, *Streptococcus faecalis*, *Staphylococcus aureus*, *Sporosarcina ureae*, and *Bacillus cereus*. Potentiometric titrations and Cd-bacteria adsorption experiments yield average values for the carboxyl site pKa, site concentration, and log stability constant for the bacterial surface Cd-carboxyl complex of 5.0, 2.0×10−3 mol/g and 4.0 respectively. Our results indicate that a wide range of bacterial species exhibit nearly identical Cd adsorption behavior as a function of pH. We propose that metal-bacteria adsorption is not dependent on the bacterial species involved, and we develop a generalized adsorption model which may greatly simplify the task of quantifying the effects of bacterial adsorption on dissolved mass transport in realistic geologic systems. Copyright (C) 2001 Elsevier Science Ltd.

Morton, J.D., Semrau, J.D. and Hayes, K.F. (2001), An X-ray absorption spectroscopy study of the structure and reversibility of copper adsorbed to montmorillonite clay. *Geochimica et Cosmochimica Acta*, **65** (16), 2709-2722.

Full Text: [G\Geo Cos Act65, 2709.pdf](G/Geo%20Cos%20Act65,%202709.pdf)

Abstract: X-ray absorption spectroscopy (XAS) and adsorption-desorption measurements have been performed to assess the relationship between the structure and reversibility of copper complexes on montmorillonite clay. By varying the solution pH and background electrolyte concentration, the adsorption of copper on either the edge sites or permanent charge sites of montmorillonite was controlled. This allowed the structure and reversibility of copper complexes on each of these site types to be assessed independently of each other. XAS analysis of copper adsorbed on the permanent charge sites indicated outer-sphere surface complexes, with these complexes showing sorption reversibility. For copper complexes formed on the edge sites of montmorillonite, XAS data confirmed the presence of monomer and dimer copper surface complexes. Sorption irreversibility at edge sites was noted at copper coverages less than 20 μmoles/g clay at pH=4.2 and at coverages greater than 50 μmoles/g clay at pH=6.8. At pH=6.8, higher Cu-Cu coordination numbers indicated the copper sorption irreversibility may be due, in part, to the formation of dimer surface complexes. The coordination numbers at pH=4.2 indicated the irreversibility could be due to the formation of dimers or due to formation of surface complexes on high energy edge sites. Copyright (C) 2001 Elsevier Science Ltd.

Stack, A.G., Higgins, S.R. and Eggleston, C.M. (2001), Point of zero charge of a corundum-water interface probed with optical second harmonic generation (SHG) and atomic force microscopy (AFM): New approaches to oxide surface charge. *Geochimica et Cosmochimica Acta*, **65** (18), 3055-3063.

Full Text: [G\Geo Cos Act65, 3055.pdf](G/Geo%20Cos%20Act65,%203055.pdf)

Abstract: The *p*H and ionic strength dependence of light generated at a corundum-solution interface by the nonlinear optical process of second harmonic generation (SHG) is reported. A point of zero salt effect occurs in the *p*H range 5 to 6. The *p*H and ionic strength dependence of the SHG is qualitatively consistent with a model describing SHG from a charged mineral/water interface from and, but certain aspects of the model appear inadequate to describe the full range of our data. Atomic force microscopy (AFM) force-distance measurements, though imprecise, were consistent with a point of zero charge (p.z.c.) for the interface also in the *p*H range 5 to 6. The SHG (and AFM) results are different from expectation; the observed p.z.s.e. (and presumably also the p.z.c.) is considerably lower than the accepted point of zero charge of clean alumina powders (*p*H 8–9.4; Although the reasons for this are unclear, SHG holds promise as a probe of oxide-water interfaces that is independent of interpretation of acid-base titration stoichiometry. Copyright (C) 2001 Elsevier Science Ltd.

Fein, J.B., Martin, A.M. and Wightman, P.G. (2001), Metal adsorption onto bacterial surfaces: Development of a predictive approach. *Geochimica et Cosmochimica Acta*, **65** (23), 4267-4273.

Full Text: [G\Geo Cos Act65, 4267.pdf](G/Geo%20Cos%20Act65,%204267.pdf)

Abstract: Aqueous metal cation adsorption onto bacterial surfaces can be successfully modeled by means of a surface complexation approach. However, relatively few stability constants for metal-bacterial surface complexes have been measured. In order to determine the bacterial adsorption behavior of cations that have not been studied in the laboratory, predictive techniques are required that enable estimation of the stability constants of bacterial surface complexes. In this study, we use a linear free-energy approach to compare previously measured stability constants for *Bacillus subtilis* metal-carboxyl surface complexes with aqueous metal-organic acid anion stability constants. The organic acids that we consider are acetic, oxalic, citric, and tiron. We add to this limited data set by conducting metal adsorption experiments onto *Bacillus subtilis*, determining bacterial surface stability constants for Co, Nd, Ni, Sr, and Zn.

The adsorption behavior of each of the metals studied here was described well by considering metal-carboxyl bacterial surface complexation only, except for the Zn adsorption behavior, which required carboxyl and phosphoryl complexation to obtain a suitable fit to the data. The best correlation between bacterial carboxyl surface complexes and aqueous organic acid anion stability constants was obtained by means of metal-acetate aqueous complexes, with a linear correlation coefficient of 0.97. This correlation applies only to unhydrolyzed aqueous cations and only to carboxyl binding of those cations, and it does not predict the binding behavior under conditions where metal binding to other bacterial surface site types occurs. However, the relationship derived in this study permits estimation of the carboxyl site adsorption behavior of a wide range of aqueous metal cations for which there is an absence of experimental data. This technique, coupled with the observation of similar adsorption behaviors across bacterial species, enables estimation of the effects of bacterial adsorption on metal mobilities for a large number of environmental and geologic applications. Copyright (C) 2001 Elsevier Science Ltd.

? Liao, L.B. and Fraser, D.G. (2002), The adsorption of As onto hydroxy-Fe-montmorillonite complexes. *Geochimica et Cosmochimica Acta*, **66** (15A), A455.

Full Text: 2002\Geo Cos Act66, A455.pdf

Keywords: Adsorption

? Purvis, O.W., Bailey, E.H., McLean, J., Kasama, T. and Williamson, B.J. (2003), Uranium biosorption by the lichen Trapelia involuta at a uranium mine. *Geochimica et Cosmochimica Acta*, **67** (18), A385-A385.

Full Text: [2003\Geo Cos Act65, A385.pdf](2003/Geo%20Cos%20Act65,%20A385.pdf)

Geibert, W. and Usbeck, R. (2004), Adsorption of thorium and protactinium onto different particle types: Experimental findings. *Geochimica et Cosmochimica Acta*, **68** (7), 1489-1501.

Full Text: [G\Geo Cos Act68, 1489.pdf](G/Geo%20Cos%20Act68,%201489.pdf)

Abstract: Here we present the results of experiments investigating the adsorption of Protactinium and Thorium onto different particle types in natural seawater. Particle types studied were smectite as a representative of clay, biogenic opal from a cleaned diatom culture, manganese dioxide precipitate, and calcium carbonate. The particles were added to three different types of natural seawater (0.5 mg/L) which were first 0.2 mum-filtered, and the distribution of Pa and Th between dissolved and particulate phase (>0.2 μm) was monitored for 4 to 5 d at increasing time intervals. The tracers applied were the beta-emitters Pa-233 and Th-234. The measurement technique via beta-counting for both nuclides in the same sample is reported here for the first time.

The observed recoveries during the experiment range from 40 to 99 (±5)% for Th and from 51 to 105 (±6)% for Pa. The distribution coefficients (Kd) after establishment of an equilibrium cover a wide range for Th from 0.5 to 107×106 ml/g, and from 0.03 to 166×106 ml/g for Protactinium, depending on particle type and on the type of seawater used.

Thorium revealed a specific affinity for all particle types investigated, with varying degree and adsorption kinetics. The results suggest that all particle types investigated may serve as Th carrier phases in the sediment. Pa was found to be less particle reactive than Th in most cases. Th/Pa fractionation factors (F-Th/Pa) were also obtained. Weakest fractionation was found on MnO2 (F-Th/Pa= 1), followed by the chemically cleaned biogenic opal (2.8) and smectite (5.4). The results for calcium carbonate were highly variable. Our experimental results imply that particle composition is indeed playing a role in the differing marine geochemistry of Th and Pa. We conclude that experiments with filtered natural seawater using particle concentrations on a natural level are a helpful approach when investigating the geochemical behaviour of strongly particle-reactive elements like Th and Pa in the marine environment. Copyright (C) 2004 Elsevier Ltd.

Keywords: Ocean Thermohaline Circulation, Southern-Ocean, Organic-Matter, Complexing Capacity, Pa-231/Th-230 Ratio, Particulate Matter, Pacific Sector, North Pacific, Th-234, Pa-231

Elzinga, E.J., Tait, C.D., Reeder, R.J., Rector, K.D., Donohoe, R.J. and Morris, D.E. (2004), Spectroscopic investigation of U(VI) sorption at the calcite-water interface. *Geochimica et Cosmochimica Acta*, **68** (11), 2437-2448.

Full Text: [G\Geo Cos Act68, 2437.pdf](G/Geo%20Cos%20Act68,%202437.pdf)

Abstract: The interaction of U(VI) species with the calcite surface in pre-equilibrated calcite suspensions at pH 7.4 and 8.3 and P(CO2) = 10(-3.5) bar was characterized in situ using extended X-ray absorption spectroscopy (EXAFS) and luminescence spectroscopies. Results indicate that uranyl triscarbonate-like adsorption complexes dominate at U(VI) solution concentrations < 500 μM, whereas the formation of U(VI) hydroxide and carbonato precipitates is observed at higher concentrations, consistent with isotherm data and aqueous speciation calculations. The EXAFS data indicate weak splitting in the equatorial O shell of the U(VI) adsorption complexes, which may indicate that the adsorption complexes are bound in an inner-sphere fashion at the calcite surface, although no Ca backscattering could be positively identified. The luminescence data indicate the presence of at least two adsorption complexes that change proportion with U(VI) loading. One species, dominating at low-surface coverage, is the uranyl triscarbonate complex. A second species is observed at higher surface loadings with a luminescence spectrum that is intermediate between the triscarbonate species found at the lowest loadings and uranyl incorporated into bulk polycrystalline calcite. The combined EXAFS and luminescence data indicate that the U(VI) adsorption complexes forming at the calcite surface are triscarbonate-like complexes, with a change in interaction with calcite surface sites as the surface loading increases, and the formation of U(VI) hydroxide/carbonato precipitates at high concentrations. Consequently, multiple uranyl species are likely to exist at the calcite surface during interaction of U(VI)containing waters in the near-surface environment. Furthermore, complex sorption/desorption behavior and kinetics may be associated with differing stabilities of sorbed U(VI) species in calcite-containing materials. Copyright (C) 2004 Elsevier Ltd.

Keywords: Uranium(VI) Sorption, Uranyl Incorporation, Aqueous-Solution, Speciation, Surface, Adsorption, XAFS, Complexes, Hematite, Luminescence

? Amirbahman, A., Kent, D.B., Curtis, G.P. and Davis, J.A. (2006), Kinetics of sorption and abiotic oxidation of arsenic(III) by aquifer materials. *Geochimica et Cosmochimica Acta*, **70** (3), 533-547.

Full Text: [2006\Geo Cos Act70, 533.pdf](2006/Geo%20Cos%20Act70,%20533.pdf)

Abstract: The fate of arsenic in groundwater depends largely on its interaction with mineral surfaces. We investigated the kinetics of As(III) oxidation by aquifer materials collected from the USGS research site at Cape Cod, MA, USA, by conducting laboratory experiments. Five different solid samples with similar specific surface areas (0.6–0.9 m2 g−1) and reductively extractable iron contents (18–26 μmol m−2), but with varying total manganese contents (0.5–3.5 μmol m−2) were used. Both dissolved and adsorbed As(III) and As(V) concentrations were measured with time up to 250 h. The As(III) removal rate from solution increased with increasing solid manganese content, suggesting that manganese oxide is responsible for the oxidation of As(III). Under all conditions, dissolved As(V) concentrations were very low. A quantitative model was developed to simulate the extent and kinetics of arsenic transformation by aquifer materials. The model included: (1) reversible rate-limited adsorption of As(III) onto both oxidative and non-oxidative (adsorptive) sites, (2) irreversible rate-limited oxidation of As(III), and (3) equilibrium adsorption of As(V) onto adsorptive sites. Rate constants for these processes, as well as the total oxidative site densities were used as the fitting parameters. The total adsorptive site densities were estimated based on the measured specific surface area of each material. The best fit was provided by considering one fast and one slow site for each adsorptive and oxidative site. The fitting parameters were obtained using the kinetic data for the most reactive aquifer material at different initial As(III) concentrations. Using the same parameters to simulate As(III) and As(V) surface reactions, the model predictions were compared to observations for aquifer materials with different manganese contents. The model simulated the experimental data very well for all materials at all initial As(III) concentrations. The As(V) production rate was related to the concentrations of the free oxidative surface sites and dissolved As(III), as Click to view the MathML sourcewith apparent second-order rate constants of Click to view the MathML sourceand Click to view the MathML sourcefor the fast and the slow oxidative sites, respectively. The As(III) removal rate decreased approximately by half for a pH increase from 4 to 7. The pH dependence was explained using the acid–base behavior of the surface oxidative sites by considering a surface pKa = 6.2 (I = 0). In the presence of excess surface adsorptive and oxidative sites, phosphate diminished the rate of As(III) removal and As(V) production only slightly due to its interaction with the oxidative sites. The observed As(III) oxidation rate here is consistent with previous observations of As(III) oxidation over short transport distances during field-scale transport experiments. The model developed here may be incorporated into groundwater transport models to predict arsenic speciation and transport in chemically heterogeneous systems.

? Partey, F., Norman, D., Ndur, S. and Siegel, M. (2006), Mechanism of arsenic sorption onto laterite iron concretions from Prestea, Ghana. *Geochimica et Cosmochimica Acta*, **70** (18), A474.

Full Text: [2006\Geo Cos Act70, A474.pdf](2006/Geo%20Cos%20Act70,%20A474.pdf)

Keywords: Ghana, Laterite, Sorption

? Yu, G., Saha, U.K., Kozak, L.M. and Huang, P.M. (2006), Kinetics of cadmium adsorption on aluminum precipitation products formed under the influence of tannate. *Geochimica et Cosmochimica Acta*, **70** (20), 5134-5145.

Full Text: [2006\Geo Cos Act70, 5134.pdf](2006/Geo%20Cos%20Act70,%205134.pdf)

Abstract: The impeding effects of organic substances on the crystallization of Al precipitation products have been studied for more than three decades. However, the impacts of organics-induced structural perturbation and the resultant surface alteration of Al transformation products on their kinetics and mechanisms of the adsorption of trace metals still remain to be uncovered. This paper describes the kinetics of Cd adsorption on the short-range-ordered (SRO) Al precipitation products formed under the influence of tannate. The kinetics of Cd adsorption on the SRO Al precipitation products formed in the presence of tannate at initial tannate/Al molar ratios (MRs) of 0, 0.001, 0.01 and 0.1 was studied at an initial Cd concentration of 0.89 mu M, pH 5.5, background electrolyte of 10(-2) M NaNO3, and solid phase concentration of 0.08 g L-1 at 278, 288, 298 and 313 K using the conventional batch method. The results show that, among the six empirical kinetic models tested, the second-order rate equation best described the kinetic data. Cadmium adsorption on SRO Al precipitation products was a multi-step process involving an initial fast reaction (0.083-0.75 h) followed by a slow reaction (0.75-4 h). The structural perturbation of Al precipitation products by tannate and the resultant development of their microporosity and alteration of surface and charge properties substantially enhanced the rate constants of both the fast and slow reaction processes of Cd adsorption. The heat of activation values for the fast reaction ranged from 27 to 41 kJ mol-1, indicating that diffusion is the rate-limiting step in Cd adsorption. Except for the Al precipitation products formed at a tannate/Al MR of 0 and 0.001, the heat of activation was > 47 kJ mol-1 for the slow reaction, indicating that the rate-limiting step is a chemical process, which apparently involves bond breaking and formation on the surfaces of the SRO Al precipitation products. The pre-exponential factor, an index of the frequency of Cd collision with the surface of Al precipitation products, significantly increased with the increase of the initial tannate/Al MR, which is attributed to the development of microporosity and the increase in the specific surface area of the Al precipitation products formed under the influence of tannate ligands. The findings merit attention to the role of natural organics, which vary in the structure and functionality, in developing the microporous structure of Al precipitation products and the impact on the dynamics and mechanisms of Cd transformation and transport in natural environments. (c) 2006 Elsevier Inc. All rights reserved.

Keywords: Chromate Retention Mechanisms, Oxide-Water Interface, Low-Molecular-Weight, Organic-Ligands, Manganese Oxide, Sorption, Soils, Hydroxides, Goethite, Desorption

? Gelabert, A., Pokrovsky, O.S., Schott, J., Boudou, A. and Feurtet-Mazel, A. (2007), Cadmium and lead interaction with diatom surfaces: A combined thermodynamic and kinetic approach. *Geochimica et Cosmochimica Acta*, **71** (15), 3698-3716.

Full Text: [2007\Geo Cos Act71, 3698.pdf](2007/Geo%20Cos%20Act71,%203698.pdf)

Abstract: This work is devoted to the physico-chemical study of cadmium and lead interaction with diatom-water interfaces for two marine planktonic (Thalassiosira weissflogii, TW; Skeletonema costatum, SC) and two freshwater periphytic species (Achnanthidium minutissimum, AMIN; Navicula minima, NMIN) by combining adsorption measurements with surface complexation modeling. Adsorption kinetics was studied as a function of pH and initial metal concentration in sodium nitrate solution and in culture media. Kinetic data were consistent with a two-step mechanism in which the loss of a water molecule from the inner coordination sphere of the metal is rate limiting. Reversible adsorption experiments, with 3 h of exposure to metal, were performed as a function of pH (2-9), metal concentration in solution (10-9-10-3 M), and ionic strength (10-31.0 M). While the shape of pH-dependent adsorption edge is similar among all four diatom species, the constant-pH adsorption isotherm and maximal binding capacities differ. Measurements of electrophoretic mobilities (μ) revealed negative surface potential for AMIN diatom, however, the absolute value of mu decreases with increase of [Cd2+]aq, suggesting the metal adsorption on negative surface sites. These observations allowed us to construct a surface complexation model (SCM) for cadmium and lead binding by diatom surfaces that postulates the Constant Capacitance of the electric double layer and considers Cd and Pb complexation with mainly carboxylic and, partially, silanol groups. In the full range of investigated Cd concentration, the SCM is able to describe the concentration of adsorbed metal as a function of [Cd2+]aq,without implying the presence of high affinity, low abundance sites, that are typically used to model the metal interactions with natural multi-component organic substances. At the same time, Cd fast initial reaction requires the presence of “highly reactive sites” those concentration represents only 2.5-3% of the total amount of carboxylic sites. For reversible adsorption experiments, the dominating carboxylic groups, whose concentration is allowed to vary within the uncertainty of experimental acid-base titrations, are sufficient to reproduce the metal adsorption isotherms. Results of this study strongly suggest that laboratory experiments performed in a wide range of metal to biomass ratios, represent robust and relatively simple method for assessing the distribution of metals between aqueous solution and planktonic and periphytic biomass in natural settings. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Chemical-Equilibrium Model, Bacterial Surfaces, Metal Adsorption, Ionic-Strength, Cd Adsorption, Fresh-Water, Dunaliella-Tertiolecta, Cell-Walls, Complexation, Binding

? Kwon, J.S., Yun, S.T., Jo, H.Y. and Jung, S.H. (2008), Geochemical processes including sorption and incorporation of heavy metals and arsenic by scoria and steel slag. *Geochimica et Cosmochimica Acta*, **72** (12), A507.

Full Text: 2008\Geo Cos Act72, A507.pdf

Keywords: Arsenic, Heavy Metals, Sorption, Steel Slag

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Ongley, L.K., Armienta, M.A., Heggeman, K., Lathrop, A.S., Mango, H., Miller, W. and Pickelner, S. (2001), Arsenic removal from contaminated water by the soyatal formation, zimapán mining district, Mexico: A potential low-cost low-tech remediation system. *Geochemistry: Exploration*, *Environment*, *Analysis*, **2**, 0-0.

Full Text: [G\Geo Exp Env Ana2, 0.pdf](G/Geo%20Exp%20Env%20Ana2,%200.pdf)

# Title: Geoderma

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van Dijk, H. (1971), Cation binding of humic acids. *Geoderma*, **5** (1), 53-67.

Full Text: [G\Geoderma5, 53.pdf](G/Geoderma5,%2053.pdf)

Abstract: The capacity of humic acids to bind metal ions is, at most, equal to the number of titratable H+-ions divided by the valency of the concerning metal ion.

It is concluded that metal humates belong to the polynuclear chelates with cations binding predominantly to negatively charged ligand groupings of the humic acids.

Judging from the magnitude of the pH-drop on addition of inorganic salts, there is at pH 5 no large difference in bond strength for the divalent ions Ba, Ca, Mg, Mn, Co, Ni, Fe and Zn (in this order only slightly increas ing). Pb(II), Cu(II) and Fe(III) ions, however, are (in this order) more firmly bound. At pH 5, Al ions seem to be quantitatively subject to the forming of hydroxide.

On several grounds it is supposed that the humates of metals of the transition series are forming hydroxocomplexes at high pH, H - ions dissociating from water molecules covalently bound by the metal ion. In the mentioned order, these metal ions are more difficultly displaced by alkali or alkaline earth ions.

As to the mechanism and the strength of the cation binding: there were only insignificant mutual differences between soil humic acids, notwithstanding differences in nitrogen content and in the ratio stronger and weaker acidic groups. The same holds for synthetic humic acids derived from polyhydroxibenzenes. Between these two groups, however, there are differences, presumably connected with a difference in the dissociation constants of the stronger acidic groups.

The bond between humic acids and ions of the transition elements undoubtedly has a partly covalent character. There are indications that this is also the case with alkaline earth ions.

“Competition” experiments between humic acids and some known chelators, and copper, gave some indications of the conditional stability constants of copper humates.

? Debusset, S.G. and Tschapek, M. (1972), Thermodynamics of water-vapor adsorption by mixtures of montmorillonite and humate. *Geoderma*, **8** (4), 281-290.

Full Text: [1960-80\Geoderma8, 281.pdf](1960-80/Geoderma8,%20281.pdf)

Abstract: Bussetti, S.G. and Tschapek, M., 1972. Thermodynamics of water-vapour adsorption by mixtures of montmorillonite and humate. Geoderma, 8: 281-290. The differential and integral enthalpies (A/t L and AH L) and entropies (AS L and AS L) of water adsorption by mixtures of montmoriilonite and humate were calculated from calorimetric and multitemperature vapour adsorption measurements. Both methods gave identical values of enthalpies and entropies. The differential and integral enthalpies (A/~ L and AH L) of water adsorption by montmoriUonite and humate and their mixtures are negative. The differential entropies (AS L) of montmorillonite, humate and their mixtures are negative and increase with the increase in water adsorption. The integral entropies (AS L) of water adsorption by the pure montmorillonite are negative and by the pure humate and mixtures (> 10% humate) are positive. By increasing water adsorption, the integral entropy increased for montmorillonite and decreased for humate and mixtures. It seems that water on the surface of humate is less ordered than on the surface of montmorillonite. The integral enthalpies like that of vapour adsorption, surface areas and heat of wetting are not additive for mixtures.

Vinkler, B.L. and Meisel, J. (1976), Infrared spectroscopic investigations of humic substances and their metal complexes. *Geoderma*, **15** (3), 231-242.

Full Text: [G\Geoderma15, 231.pdf](G/Geoderma15,%20231.pdf)

Abstract: A study has been made on the infrared spectra of lowland peats and purified humic, hymatomelanic and fulvic acids, as well as their acetylated derivatives and metal complexes. Extraction and purification may modify humic acids of untreated peats only to a small extent. Acetylation of fulvic and humic acids with acetic acid anhydride resulted mainly in the reaction of phenolic hydroxyl and quinone groups. Similarities of the spectra of the individual humic substances point to similar structures, differing only in the number of functional groups and the degree of aggregation. Metals are bound by humic substances mainly in metalcarboxylate bonds. The degree to which these bonds are ionic or covalent can be determined by the antisymmetric carboxylate stretching frequencies.

Levy, R. and Feigenbaum, S. (1977), Effect of dilution on soluble and exchangeable sodium in soils differing in mineralogy. *Geoderma*, **18** (3), 193-205.

Full Text: [G\Geoderma18, 193.pdf](G/Geoderma18,%20193.pdf)

Abstract: It was found that a linear relationship exists between soluble sodium fraction and dilution, the latter defined as the fraction of soluble sodium and the total extractable sodium. This relationship could be used to recalculate soluble sodium at low soil: water ratios once the parameters of the relationship were determined. The parameters of the relationship were functions of the mineralogy and of the salinity of the soil, but not of the sodicity levels. It was found that the intercept of the relationship (soluble sodium fraction at zero water content) of soils containing easily weatherable silicates in the silt fraction was higher and more affected by salinity than that of soils which did not contain such silicates. Soils containing easily weatherable silicates had a cation exchange capacity in both clay and silt fractions. The slope of the relationship (the rate of sodium release upon dilution) was less affected by the mineralogy and salinity of the soil.

Feigenbaum, S. and Levy, R. (1977), Potassium release in some saline sols of Israel. *Geoderma*, **19** (2), 159-168.

Full Text: [G\Geoderma19, 159.pdf](G/Geoderma19,%20159.pdf)

Abstract: Potassium release from samples of two saline and three nonsaline soils was studied by measuring the amounts of the cation in 0.01 *N* CaCl2 and water extracts. The factors which affected the release were: the distribution of potassium between the silt and clay fractions, the total potassium content of the sample and its salinity. Soil samples with a distribution ratio above unity (i.e., with potassium mainly in the silt fraction) and a high total potassium content released K at a higher rate than those with a distribution ratio below unity and a high total potassium content. The effect of salinity was of minor importance in comparison with those of the two other factors.

Amacher, M.C., Kotuby-Amacher, J., Selim, H.M. and Iskandar, I.K. (1986), Retention and release of metals by soils — Evaluation of several models. *Geoderma*, **38** (1-4), 131-154.

Full Text: [G\Geoderma38, 131.pdf](G/Geoderma38,%20131.pdf)

Abstract: Several kinetic models, including irreversible and reversible 1st, 2nd, and *n*th order models, and several equilibrium models, including the linear, Langmuir, two-surface Langmuir, and Freundlich models, were evaluated for their ability to describe the retention/release of Cr, Cd, and Hg by various soils. The retention/release data were obtained using a batch reaction method. In general, no single-reaction kinetic model fit the data over the entire time and concentration ranges studied for any of the metals or soils. The relationship between the amount of metal retained by the soil and the concentration of metal in solution was described by either the two-surface Langmuir or Freundlich models. A significiant fraction of the metals retained by the soil was not released to solution and was not exchangeable, indicating that some irreversible retention of the metals occurred. The results suggest that a multi-reaction model consisting of irreversible and reversible kinetic models is needed to fit all the data.

Notes: highly cited

? Fendorf, S.E. (1995), Surface-reactions of chromium in soils and waters. *Geoderma*, **67** (1-2), 55-71.

Full Text: [1995\Geoderma67, 55.pdf](1995/Geoderma67,%2055.pdf)

Abstract: Chromium is a redox active metal that persists as either Cr(III) or Cr(VI) in the environment. These two oxidation states have opposing toxicities and mobilities: Cr(III) is rather benign and immobile in soils while Cr(VI) is toxic and readily transported. Reactions influencing Cr chemistry in soils and waters must be known in order to predict and understand the fate of this potentially hazardous element. Reactions at the solid-water interface have important consequences on the bioavailability (sorption reactions) and hazard (redox reactions) of Cr. Accordingly, this paper describes surface reactions that influence Cr chemistry in soils. Specifically, retention reactions of Cr(III) and Cr(VI) are described, e.g., adsorption of Cr(III) and Cr(VI) reduction by Fe(II). The influences of organic chelates on these reactions are also detailed. Direct evidence on the specific reactions of Cr at the solid-water interface are provided; techniques used in this paper to detail the reactions of Cr include X-ray absorption fine structure spectroscopy, scanning probing microscopies, and high-resolution transmission electron microscopy.

Keywords: Adsorption, Behavior, Bioavailability, Chemical Speciation, Chromate Adsorption, Cr(III), Hexavalent Forms, Kinetics, Metal, Organic Materials, Oxidation, Reduction, Sea-Water, Soils, Sorption

? Murphy, E.M. and Zachara, J.M. (1995), The role of sorbed humic substances on the distribution of organic and inorganic contaminants in groundwater. *Geoderma*, **67** (1-2), 103-124.

Full Text: [1995\Geoderma67, 103.pdf](1995/Geoderma67,%20103.pdf)

Abstract: Mineral-bound humic substances modify inorganic surfaces in subsurface sediments, changing the nature and number of complexation sites for contaminants. Because of adsorptive enrichment, the reactive surface area or site concentration contributed by mineral-bound humic substances can exceed that of dissolved or colloidal humic substances by two orders of magnitude. Mineral-bound humic materials may, therefore, provide a major sink for the removal of contaminants in groundwater. The reactivity of the humic substance is primarily determined by the structural and bulk chemical properties of the humic substance and the aqueous solution chemistry.

Organic and inorganic contaminants sorb readily to mineral-bound humic substances. The sorption of hydrophobic organic compounds increases as ionic strength decreases, is enhanced by divalent cations, and displays non-linear isotherms and competitive adsorption behavior. Collectively, these results suggest that hydrophobic adsorption, rather than phase partitioning, is the primary sorption mechanism for neutral organic molecules on these particle coatings. Mineral-bound humic substances augment, rather than change, the intrinsic complexation properties of mineral surfaces for metal cations. The degree of sorption enhancement promoted by mineral-bound organic material varies strongly with pH and depends on the magnitude of the stability constants between the metal cation and the humic substance, the strength and magnitude of adsorption of the humic substance by the mineral surface, and the extent of aqueous complex formation between the non-sorbed humic substance and metal. The simplest sorption model for humate-modified surfaces is the linear additivity model (LAM). Sorption data for certain hydrophobic organic compounds and metal cations appear to conform to this model.

Keywords: Polycyclic Aromatic-Hydrocarbons, Molecular-Weight, Weak Polyelectrolytes, Aluminum-Oxide, Hydrous Oxides, Fulvic-Acids, Adsorption, Sorption, Binding, Water

Ma, Q.Y. and Lindsay, W.L. (1995), Estimation of Cd2+ and Ni2+ activities in soils by chelation. *Geoderma*, **68** (1-2), 123-133.

Full Text: [G\Geoderma68, 123.pdf](G/Geoderma68,%20123.pdf)

Abstract: Cadmium and Ni solubility in soils is of concern due to their biological toxicity, especially to humans. Free Cd2+ and Ni2+ activities in both contaminated and uncontaminated soils were determined using the chelation method. The measured Cd2+ and Ni2+ activities were highly pH dependent with correlation coefficients of 0.99 and 0.80 in the contaminated, and 0.98 and 0.94 in the uncontaminated soils, respectively. The measured Cd2+ and Ni2+ activities in the contaminated soils averaged 1.42 and 0.73 log units higher than those in the uncontaminated soils, and can be predicted for these soils using the equations: log(Cd2+) = (7.64±0.27) - 2pH and log(Ni2+) = (7.82±0.85) - 2pH. The Cd2+ and Ni2+ activities in the uncontaminated soils can be divided into two groups based on soil pH. The Cd and Ni solubilities in soils of pH > 6.90 were close to soil-Cd and soil-Ni, which are reference values for the solubility of Cd and Ni in most agricultural soils, and can be predicted using the equations: log (Cd2+) = (6.22±0.18) - 2pH, and log(Ni2+) = (7.09±0.38) - 2pH. Solubility in soils of pH < 6.9 were undersaturated with respect to soil-Cd and soil-Ni. Adsorption-desorption may be important in regulating Cd2+ and Ni2+ activities in the uncontaminated soils of low pH, whereas precipitation-dissolution process may operate in soils of high pH and/or high Cd or Ni levels. The results indicate that these contaminated soils contained elevated free Cd and Ni concentrations and remedial actions are needed to reduce their levels.

Keywords: Calcareous Soils, Sewage-Sludge, Cadmium Activities, Sorption, Solubility, Copper, Nickel, Acid, Zinc

Bajracharya, K., Tran, Y.T. and Barry, D.A. (1996), Cadmium adsorption at different pore water velocities. *Geoderma*, **73** (3-4), 197-216.

Full Text: [G\Geoderma73, 197.pdf](G/Geoderma73,%20197.pdf)

Abstract: Batch and column experiments were conducted to study the effect of pore water velocity on the adsorption of cadmium (Cd) onto a homogeneous nonaggregated porous medium under controlled environmental conditions. A wide range (5-214 cm/hr) of pore water velocities was imposed to observe adsorption effects. The results of batch experiments showed that adsorption coefficients are affected by the solid-to-liquid ratio, the adsorption coefficient increasing with this ratio. The batch-determined adsorption isotherm constants differed from those determined from column experiments. There was no evidence of nonequilibrium processes occurring in the flow-through system. For most of the column breakthrough curves, the linear equilibrium model adequately described the data, The fits of this model to the observed breakthrough data indicated that the adsorption coefficient remains fairly constant with velocity. However, flow-determined adsorption coefficients were clearly higher than batch-determined ones at the same solid-to-liquid ratio.

Keywords: Adsorption, Advection, Cadmium, Isotherms, Transport, Solute Transport, Aggregated Oxisol, Dispersion Model, Soil Columns, Sorption, Retention, Isotherm, Metals, Scale, Time

Hooda, P.S. and Alloway, B.J. (1998), Cadmium and lead sorption behaviour of selected English and Indian soils. *Geoderma*, **84** (1-3), 121-134.

Full Text: [G\Geoderma84, 121.pdf](G/Geoderma84,%20121.pdf)

Abstract: The environmental impact of metal additions to a soil depends on the metal sorption ability of the soil. This study compared the Cd and Pb sorption abilities of some selected English and Indian soils. The results showed that the English soils generally sorbed Cd and Pb more strongly and in greater amounts compared to the Indian soils. Soil pH, CEC, contents of organic matter, clay and CaCO3 were all positively correlated with Freundlich metal retention parameters (log *K*f and 1/*n*) whereas the sand content had a negative correlation. The contents of free Fe oxide (FFeO) and easily reducible hydrous Mn oxide (HMnO) had no major influence on Cd and Pb sorption by these soils, except HMnO on 1/*n* for Cd sorption. Correlation and regression analyses indicated that clayey textured soils with neutral to alkaline pH or soils with appreciable (≥10%) amounts of CaCO3 and organic matter would be the most suitable for the disposal of Cd and Pb containing wastes. The results also showed that the application of a sewage sludge significantly increased the sorption of both Cd and Pb by all English soils, but a considerable decline in Pb sorption by most Indian soils was observed.

Keywords: Soils From England and India, Cadmium, Lead, Sorption, Sewage Sludge

Tran, Y.T., Bajracharya, K. and Barry, D.A. (1998), Anomalous cadmium adsorption in flow interruption experiments. *Geoderma*, **84** (1-3), 169-184.

Full Text: [G\Geoderma84, 169.pdf](G/Geoderma84,%20169.pdf)

Abstract: Adsorption of cadmium (Cd) onto fine sand was investigated using batch (static) and steady flow (dynamic) experiments at pHs of 5.5, 6.0 and 6.5. For both types of experiment, adsorption of Cd onto sand was found to increase with pH. In all experiments, greater adsorption of Cd was found in flow experiments than in batch experiments. Flow interruption was used to test whether nonequilibrium sorption occurred during transport of Cd. No concentration drop was observed immediately after the resumption of flow. Instead, for all experiments, a consistent increase in effluent concentration was observed indicating that Cd was desorbed during the interruption period. This indicates the significance of velocity on adsorption/desorption of Cd onto the sand. The amount of desorption was predicted by a transition from the dynamic to the static sorption isotherm. (C) 1998 Elsevier Science B.V. All rights reserved.

Keywords: Cadmium Adsorption, Flow Interruption Experiments, Static Sorption Isotherm, Laboratory Soil Columns, Displacement Experiments, Boundary-Conditions, Sorption, Batch, Isotherms, Transport

Ketelsen, H. and Meyer-Windel, S. (1999), Adsorption of Brilliant Blue FCF by soils. *Geoderma*, **90** (1-2), 131-145.

Full Text: [G\Geoderma90, 131.pdf](G/Geoderma90,%20131.pdf)

Abstract: The objective of this study was to assess the extent of Brilliant Blue FCF adsorption in soils and to identify soil properties that play a predominant role in adsorption of the dye. Additionally the adsorption kinetics of the dyestuff were investigated. With increasing equilibrium concentration the adsorption converged to a maximum and Langmuir isotherms were fitted to the data. The parameter Qmax of the isotherm was correlated to soil parameters. Spearman rank correlations showed a strong positive correlation between Qmax and clay content and a negative correlation between Qmax and OC content. Iron and aluminium (hydr)oxides had no influence on Brilliant Blue FCF adsorption. The presumption that the dye’s adsorption may increase with decreasing pH due to the prevailing neutral form of the molecule is not supported by our data. A regression equation was developed for prediction of maximum Brilliant Blue FCF adsorption in soils using clay and OC contents as independent variables. Achievement of equilibrium progressed in two stages. A fast removal of Brilliant Blue FCF from solution during the first hour is followed by a slower approximation towards equilibrium. The partly considerable adsorption of Brilliant Blue FCF to soils diminishes its suitability for tracing water flow through soils. Comparison of flow properties of soils via stained profiles may lead to inadequate interpretations, due to differing adsorption characteristics of the soils.

Keywords: Preferential Flow, Tillage, Tracer, Water, Zone, Brilliant Blue FCF, Adsorption, Langmuir Isotherm, Adsorption Kinetics

Palumbo, B., Angelone, M., Bellanca, A., Dazzi, C., Hauser, S., Neri, R. and Wilson, J. (2000), Influence of inheritance and pedogenesis on heavy metal distribution in soils of Sicily, Italy. *Geoderma*, **95** (3-4), 247-266.

Full Text: [G\Geoderma95, 247.pdf](G/Geoderma95,%20247.pdf)

Abstract: The recognition of the potential health hazards associated with heavy metals has focused attention on the levels and behaviours of these elements both in natural and contaminated environments. Various soil types developed from different parent materials in Sicily, Italy, have been analysed in order to compare heavy metal distribution under different geopedological conditions. Total metal concentrations, metal partitioning and distribution profiles are discussed in relation to the inheritance factor and pedogenic processes. Parent material composition largely influences the contents of heavy metals in most of the analysed soils, mainly differentiating pedons for their metal concentration on the basis of sedimentary and volcanic parent materials. However, an exception is represented by the carbonate-free Alfisols and Mollisols, which are markedly enriched in heavy metals with respect to the underlying limestones and calcarenites, On the basis of chemical and mineralogical results, supported by data from sequential extraction (SEP), heavy metal enrichment in these soils is associated with the formation of common to abundant Fe-Mn oxides and clay accumulation. For Mollisols there is evidence for a major role of organic matter in heavy metal retention in surface horizons. In the other pedons, pedogenic processes appear to mainly influence the redistribution of heavy metals throughout the soil horizons rather than affecting the total content. Argillopedoturbation seems to be responsible for a uniform distribution of heavy metals in Vertisol profiles on marry clays. Accumulation of heavy metals in the topsoil of Inceptisols on clays with gypsum and Entisols on gypsarenites and diatomites is caused partially by adsorption on organic matter and mainly by dissolution of primary gypsum and opal-A. A pedogenic influence is less evident in young Andisols whose heavy metal composition greatly reflects that of hawaiitic pyroclastic deposits interbedded within the profiles. However, a certain redistribution of Cu accumulated as metal-organic matter complexes is evidenced in the surface horizon by SEP.

Keywords: Speciation, Fractionation, Heavy Metals, Soil Geochemistry, Soil Mineralogy, Sequential Extraction, Sicily

Hinz, C. (2001), Description of sorption data with isotherm equations. *Geoderma*, **99** (3-4), 225-243.

Full Text: [G\Geoderma99, 225.pdf](G/Geoderma99,%20225.pdf)

Abstract: Analysis of sorption data is important for characterizing retention of chemicals by soil. In this paper I review the most common isotherm equations used in soil science. The mathematical descriptions of these equations are classified into rational, power, and transcendental functions which are related to the isotherm classification. I use most well-known isotherm equation as special cases of a general equation. The meaning of the parameters of this equation is discussed in terms of the Giles classification. Guidelines are presented for choosing the correct type of isotherm equations to describe a set of sorption data. Tn particular, I show that plotting the distribution coefficient vs, the amount of solute sorbed to the solid phase on a log-log scale is the best way to identify the class and subgroup of isotherms based on the Giles classification. Examples of how to apply the guidelines to determine and modify isotherm equations are presented. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Sorption, Isotherms, Equations, Soils, Solutes, Nonlinear Least-Squares, Adsorption Phenomena, Langmuir Equation, Affinity Distributions, Soil, Regression, Constants

Hartemink, A.E., McBratney, A.B. and Cattle, J.A. (2001), Developments and trends in soil science: 100 volumes of *Geoderma* (1967 - 2001). *Geoderma*, **100** (3-4), 217-268.

Full Text: [2001\Geoderma100, 217.pdf](2001/Geoderma100,%20217.pdf)

Abstract: Between September 1967 and March 2001, Geoderma published 100 volumes containing 2079 papers covering 31,637 pages and filling 191 cm of shelf space. No doubt that is a lot of paper, but what is in it? This paper starts with a brief history of the journal and an overview of editors and a geographic breakdown of the editorial board. The contents of the 100 volumes is presented including an overview of the geographic origin of the research and authors, and an analysis of soil science subjects over time. Furthermore, the impact factor and the most frequently papers are discussed. The average length of the papers increased from 12.9 pages in the 1970s to 16.4 pages in the 1990s. Number of authors per paper increased faster so the pages per author have decreased over time. European authors account for about half of the papers but less than 40% of the research was conducted in Europe. The number of authors from North America has increased over the years and about one-fifth of the papers is from research in North America. More than half of the research reported in Geoderma was conducted in the temperate regions, whereas the tropics and subtropics account for about 30% of the papers. In the 1980s, 53% of the papers were descriptive but it decreased to 31% in the 1990s with a higher percentage of papers focussing on methodology. One of the intriguing trends is that 29% of the papers in the 1970s were based on field studies whereas only 18% of the papers in the 1990s were field based. Laboratory studies decreased from 60% in the 1970s to 49% in the 1990s. Over the same period, desk studies increased from 11% to 33% of the published papers. The majority of the papers in Geoderma has had no strong focus and only in recent years papers had an increased focus (i.e. agriculture, environment etc.). There has been a strong increase in soil physics papers whereas the share of soil chemistry steadily declined over time. Typical pedological papers cover about 30% of the journal and little change was found with time, except for the advent of papers in pedometrics. Papers on soil mineralogy have sharply declined from 25% in the 1980s to less than 10% in the 1990s. Over the same period, a doubling in the number of papers on soil and environment occurred. Papers containing information on soil classification increased from 30% in the early 1970s to around 50% in the late 1990s. Alfisols had received most attention followed by Inceptisols. Papers are based on a larger amount of soil samples and in recent years an increasing number of papers are based on existing data. The impact factor of Geoderma has steadily increased since the mid 1970s and in particular in the late 1990s. This review has shown important trends in Geoderma papers that likely reflect some of the major changes that have occurred in soil science as a whole.

Keywords: Soil Science, Soil Science Impact, Bibliometrics, History of Soil Science, Trends in Soil Science

Liu, C. and Huang, P.M. (2001), Pressure-jump relaxation studies on kinetics of lead sorption by iron oxides formed under the influence of citric acid. *Geoderma*, **102** (1-2), 1-25.

Full Text: [G\Geoderma102, 1.pdf](G/Geoderma102,%201.pdf)

Abstract: The impact of the surface properties of Fe oxides formed both in the absence and the presence of citric acid at the citrate concentration of 10−5 M on their kinetics and mechanisms of Pb sorption was investigated by using pressure-jump relaxation spectrometry. The adsorption edge of Pb on these two Fe oxides can be described by the modified triple layer model (TLM) using the FITEQL program. Two relaxation times observed in the Pb ion–Fe oxide suspensions in the pH range of 3–5 indicate that Pb adsorption on these Fe oxides consisted of two elementary reactions. The results indicate that the mechanisms of Pb sorption in the pure goethite system derived by Hayes [Equilibrium, Spectroscopic, and Kinetic Studies of Ion Adsorption at the Oxide/Aqueous Interface. PhD thesis, Stanford Univ., Palo Alto, CA, 1987] were also acceptable for the Pb sorption in these two Fe oxide systems in the present study. The proposed mechanisms are in accord with the formation of the Pb surface complexes on goethite surfaces established by X-ray absorption spectroscopy (XAS) in other studies [Langmuir 7 (1991) 367; Geochim. Cosmochim. Acta 62 (1998) 193]. However, the intrinsic forward rate and equilibrium constants for the two parallel reactions of Pb sorption by the Fe oxide formed at the citrate/Fe(II) MR of 0.001 were significantly lower compared with the Fe oxide formed in the absence of citrate. This is due to the improvement of the crystallinity of Fe oxide (lepidocrocite) resulted from the presence of citrate at the concentration of 10−5 M through catalysis and the subsequent decrease in the specific surface area. Compared to the Fe oxide formed in the absence of citrate ligands, the intrinsic backward rate constant for the second reaction of Pb sorption by the Fe oxide formed in the presence of citrate was significantly higher. This is attributed to the lower point of zero salt effect (PZSE) of Fe oxide formed at the citrate/Fe(II) MR of 0.001 and more net negative charges at the same pH, which caused less coordination of nitrate ions with Pb on the surface. Therefore, the presence of citric acid at the concentration of 10−5 M during the formation of Fe oxides significantly influenced the intrinsic rate and equilibrium constants of Pb sorption at the Fe oxide/water interface through fundamental structural modifications and the subsequent alteration of their surface properties. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Lead, Sorption, Kinetics, Relaxation, Iron Oxides

Hinz, C. (2001), Erratum to: “Description of sorption data with isotherm equations” [Geoderma 99 (2001) 225–243]. *Geoderma*, **102** (3-4), 405-406.

Full Text: [G\Geoderma102, 405.pdf](G/Geoderma102,%20405.pdf)

Appel, C., Ma, L.Q., Rhue, R.D. and Kennelley, E. (2003), Point of zero charge determination in soils and minerals via traditional methods and detection of electroacoustic mobility. *Geoderma*, **113** (1-2), 77-93.

Full Text: [G\Geoderma113, 77.pdf](G/Geoderma113,%2077.pdf)

Abstract: Points of zero charge were determined on two highly weathered surface soils from Puerto Rico, an Oxisol and Ultisol, as well as mineral-standard kaolinite and synthetic goethite using three methods: (1) potentiometric titration measuring the adsorption of H+ and OH− on amphoteric surfaces in solutions of varying ionic strength (*I*) (point of zero salt effect), (2) direct assessment of surface charges via non-specific ion adsorption as a function of pH and *I* (point of zero net charge), and (3) electroacoustic mobility of reversible particles as it varies with pH and *I* (isoelectric point). The first two methods yielded points of zero charge for kaolinite (2.7–3.2) and synthetic goethite (7.4–8.2) comparable to those reported previously, indicating the reliability of these analyses. The soil values ranged from 3.9 to 4.4 for the Oxisol and 2.3 to 3.7 for the Ultisol. Electroacoustic mobility, as measured by the AcoustoSizer™, is a parameter that has yet to be thoroughly tested for mineral or soil systems as a viable alternative to PZC assessment. The points of zero charge from electroacoustic mobility of kaolinite (3.8–4.1) and synthetic goethite (8.1–8.2) were similar to values obtained by electrophoretic mobility. Furthermore, the values found for the Oxisol (3.4–3.5) and Ultisol (2.6–2.7) were in the range expected for these soils.

Keywords: Point of Zero Charge, Point of Zero Net Charge, Point of Zero Salt Effect, Tropical Soils, Isoelectric Point, Electroacoustic Mobility

Adhikari, T. and Singh, M.V. (2003), Sorption characteristics of lead and cadmium in some soils of India. *Geoderma*, **114** (1-2), 81-92.

Full Text: [G\Geoderma114, 81.pdf](G/Geoderma114,%2081.pdf)

Abstract: To evaluate the sorption mechanism of heavy metals viz. cadmium (Cd) and lead (Pb) in major soil types, an experiment was conducted on Vertic Ustochrept, Typic Eutrochrept, Typic Ustipsamment, Typic Haplustalf and Typic Ustorthent representing five agroecological zones (AEZ) of India. The thermodynamic parameters viz. *K*°, Δ*G*°, Δ*H*° and Δ*S*° were determined by using sorption data and concentrations of Cd and Pb in equilibrium solution at two different temperatures 25±2 and 45±2 °C of soil suspension. Results showed that the data of heavy metals sorption could be described satisfactorily by Freundlich and modified (two surfaces) Langmuir isotherms. The Pb sorption was maximum in the order of Vertic Ustochrept>Typic Eutrochrept>Typic Ustochrept>Typic Haplustalf>Typic Ustorthent. The magnitude of Cd sorption was 4 to 6 times less than that of Pb. The Vertic Ustochrept sorbed Cd 4.0 and 2.5 times and Pb by 2.0 and 1.9 times more than that of Ustorthent and Haplustalf soils, respectively. Such variations in Cd and Pb sorption maxima were correlated with the differences in pH, CEC and organic matter content of the soils. Thermodynamic parameters revealed that heavy metal sorption increased as the value of *K*°, Δ*G*°, Δ*H*° and Δ*S*° increased with temperature. The high values of Δ*G*° both for Pb and Cd indicated that both the reactions are spontaneous. The values of Δ*H*° were found to be negative for Cd and positive for Pb concluded that Cd sorption reaction was exothermic while Pb sorption was found to be an endothermic reaction in all the soils.

Keywords: Sorption, Thermodynamic Parameters, Soil, Cd, Pb

? Mon, J., Flury, M. and Harsh, J.B. (2006), Sorption of four triarylmethane dyes in a sandy soil determined by batch and column experiments. *Geoderma*, **133** (3-4), 217-224.

Full Text: [2006\Geoderma133, 217.pdf](2006/Geoderma133,%20217.pdf)

Abstract: Dye tracers are important hydrological tracers. Only a few commercially available dyes have been systematically evaluated for their suitability as hydrological tracers. Sorption is one of the limiting factors for the suitability of a dye tracer. In this study we examined the sorption of four dyes to a sandy soil using batch and column techniques. The four dyes, C.I. Food Blue 2 (Brilliant Blue FCF), C.I. Food Green 3, C.I. Acid Blue 7, and C.I. Acid Green 9, were all from the class of triarylmethnane dyes. Adsorption isotherms were determined at pH approximate to 8 in 10 mmol/L CaCl2 background solution. Batch sorption experiments were conducted using dye concentrations ranging from 0.0001 to 2.9 mmol/L. Sorption isotherms were analyzed with the Langmuir equation. Column experiments with the dyes were conducted under water saturated conditions. Adsorption isotherms calculated from column breakthrough data showed good agreement with those of batch studies, except at small dye concentrations, where column data tended to over-estimate sorption of the dyes. The four dyes showed two different sorption behaviors: C.I. Food Green 3 and C.I. Food Blue 2 sorbed considerably less than C.I. Acid Green 9 and Acid Blue 7. The former two dyes contain three sulfonic acid groups while the latter only contain two sulfonic acid groups. C.I. Food Green 3 is likely a good hydrological tracer, as is C.I. Food Blue 2, which is frequently used as a vadose zone tracer. (c) 2005 Elsevier B.V All rights reserved.

Keywords: Adsorption, Batch Isotherms, Brilliant Blue FCF, Column Isotherms, Dye Tracers, Fluorescent Dyes, Isotherms, Langmuir, Movement, Sorption, Tracers, Transport, Vadose Zone

? Montoya, J.C., Costa, J.L., Liedl, R., Bedmar, F. and Daniel, P. (2006), Effects of soil type and tillage practice on atrazine transport through intact soil cores. *Geoderma*, **137** (1-2), 161-173.

Full Text: [2006\Geoderma137, 161.pdf](2006/Geoderma137,%20161.pdf)

Abstract: Agricultural systems of Argentina have increased herbicides inputs, mostly associated with adoption of no tillage (NT). Several studies have revealed presence of pesticides in groundwater. Therefore, research on the behaviour of herbicides in soils is driven by the need to manage and prevent possible contamination of groundwater. Soil organic carbon (OC) is the main soil component responsible of sorption, and consequently the main tool to reduce the leaching. However, in dynamic systems transport of organic chemicals depends on soil structural and hydraulic properties. Sorption controls the physical and biological availability of chemicals. Physical, heterogeneous flow domain, and chemical, kinetic reactions and molecular diffusion into aggregates, which are nonequilibrium processes that affect solute transport. The main objective of this paper was to evaluate the effects of soil texture and tillage system on atrazine transport through intact soil columns. The study focused on the identification of processes; and determination of parameters that control atrazine transport in the upper layer of soils. Balcarce (BAL, silty clay loam, fine, thermic, illitic, Typic Argiudoll)), Tres Arroyos (TAR, clay loam, fine, thermic, illitic, Typic Argiudoll) and Coronet Dorrego (DOR, loam, fine, thermic, mixed illitic-montmorillonitic, Typic Argiudoll) soils from the southeast of Buenos Aires Province (Argentina) were selected. The soils represent a wide range of OC content (BAL 35.5, TAR 28.8 and DOR 17.3 g kg(-1)). At each site NT and conventional tillage (CT) systems were sampled. Four replicates of intact soils cores (15 x 8 cm) were removed from each combination of soil x tillage (BAL-NT, BAL-CT, TAR-NT, TAR-CT, DOR-NT, DOR-CT). Displacement studies were done using atrazine as the reactive solute and bromide as the nonreactive solute. Equilibrium and nonequilibrium transport models (CXTFIT 2.1) were employed to describe the breakthrough curves (BTCs). The software tool SMART was used to simulate atrazine transport under steady-state flow conditions. Atrazine BTCs were skewed to the right; exhibiting an asymmetric shape and tailing that implied nonequilibrium conditions during transport. Since physical nonequilibrium was assumed to be nearly negligible, the observed nonequilibrium was interpreted as a sorption-related process. The two-site nonequilibrium model showed an acceptable fit with the observed data (72 < R-2 < 86). Recovery percentages of atrazine in effluents were: BAL-CT 54.51 %; BAL-NT 45.10%; TAR-CT 44.28%; TAR-NT 29.70%; DOR-CT 18.60%; DOR-NT 48.95%. The intraparticle diffusion model provided by SMART showed the best fit. In conclusion, intrinsic soil properties were more relevant for atrazine transport than those associated with tillage practices. However, no tillage produced early detection of atrazine in effluents, and favoured atrazine leaching in coarser soils with the lowest OC contents. However, the maximum loss of atrazine in the percolate took place in the soils with the highest OC level; with no effects of tillage practices. These soils had fine texture, and were well structured and aggregated. Intraparticle and intraorganic matter diffusion appear to be responsible for nonequilibrium sorption. Delayed sorption in aggregated soils leads to high concentration of atrazine available for leaching. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Atrazine, Breakthrough Curves, Bromide, Carbon, Chemicals, Clay, Columns, Control, Ct, Diffusion, Equilibrium, Groundwater, Herbicides, Intraparticle Diffusion, Intraparticular Diffusion, Kinetic, Leaching, Model, Molecular, Movement, Nonequilibrium Process, Nonequilibrium Sorption, Organic Carbon, Organic-Matter, Pesticides, Practice, Recovery, Research, Residue Management, Software, Soil, Solute Transport, Sorption, Systems, Texture

? Mahabadi, A.A., Hajabbasi, M.A., Khademi, H. and Kazemian, H. (2007), Soil cadmium stabilization using an Iranian natural zeolite. *Geoderma*, **137** (3-4), 388-393.

Full Text: [2007\Geoderma137, 388.pdf](2007/Geoderma137,%20388.pdf)

Abstract: In recent years, natural substances such as zeolite have been used to absorb heavy metals in soil in an attempt to decrease their availability to plants. Compared to other techniques, the use of zeolite is fast, clean, and inexpensive. This research was carried out to investigate the effects of an Iranian natural zeolite (clinoptilolite) on stabilizing Cd-contaminated soil treated with 0.01 M CaCl2 leaching solution. Zeolite from Firoozkouh (Tehran Province) was added to four soils from Gilan province, northern Iran. The stabilization of Cd in soils mixed with zeolite was measured in both column and batch experiments. The results from the batch experiment showed that application of zeolite to soil reduced Cd leaching in all the contaminated soils. When more zeolite was added to soil, lower Cd concentrations were detected in the leaching solution. When 15% zeolite was applied, Cd concentration in the leachate decreased to below 0.1 mg l-1. Cadmium depth analysis showed little migration of Cd in sand and clay textures with no zeolite addition and after adding 15 and 75 pore volumes of leaching solution, the remaining Cd levels were 12% and 35% of the original Cd concentration, respectively. However, these values for 9% zeolite treatments were 97% and 99%, respectively. The higher cation exchange capacity of the zeolite/soil mixture and the higher pH levels were responsible for stabilizing Cd in these soils. The effect of preventing heavy metals from leaching was found to be more pronounced when zeolite was applied to clay soils. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Clinoptilolite, Cd-Contaminated Soil, Cd Stabilization, Heavy Metals, Exchange Capacities, Synthetic Zeolites, Ion-Exchange, Clinoptilolite, Cd, Mordenite, Sorption, Metal, CO

? Minasny, B., Hartemink, A.E. and McBratney, A. (2010), Individual, country, and journal self-citation in soil science. *Geoderma*, **155** (3-4), 434-438.

Full Text: [2010\Geoderma155, 434.pdf](2010/Geoderma155,%20434.pdf)

Abstract: Self-citation is common practice in most sciences but it differs between disciplines, countries and journals. Here we report on self-citation in soil science. We investigated citations in the major soil science journals and conducted an analysis on a country basis and for the subdiscipline of Pedometrics. It was found that the median rate of individual self-citation was 12%, and ranged from 5 to 60% in 31 soil science journals. A high rate Of journal self-citation was accompanied by a high impact factor ranking, but ranking based on the Eigenfactor (TM) revealed a very different ranking compared to the impact factor score ranking. The distribution of country self-citation rate follows a power law, and a logarithmic function was fitted to the data. Taking into account the logarithmic function, China had high Fates of self-citations whereas Egypt, Algeria, Ukraine, and Indonesia have low levels of self-citations. With few exceptions, self-citation rates in soil science are reasonable and comparable to the other biophysical sciences. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Bibliometrics, China, Citations, Country Self-Citation, Impact Factor, Index, Journal Self-Citation, Journals, Pedometrics, Power Law, Science, Self-Citation, Self-Citations, Soil, Soil Science Journals

? Wu, P.X., Zhang, Q., Dai, Y.P., Zhu, N.W., Dang, Z., Li, P., Wu, J.H. and Wang, X.D. (2011), Adsorption of Cu(II), Cd(II) and Cr(III) ions from aqueous solutions on humic acid modified Ca-montmorillonite. *Geoderma*, **164** (3-4), 215-219.

Full Text: [2011\Geoderma164, 215.pdf](2011/Geoderma164,%20215.pdf)

Abstract: Montmorillonite could be a kind of potential low cost sorbent for various kinds of heavy metals since it is abundant in nature and only needs little processing. Humic acid modified Ca-montmorillonite was prepared so as to adsorb copper (II) (Cu2+), cadmium (II) (Cd2+) and Chromium (III) (Cr3+) ions from aqueous solutions. The obtained materials were characterized by powder X-ray diffraction (XRD) and Fourier transform infrared (FTIR) spectroscopy. Then, batch experiments were carried out to investigate the possible adsorption mechanisms of the metal ions on humic acid modified Ca-montmorillonite. The results showed that the adsorption capacities of the modified clay for the metal ions were improved significantly as compared to that of the raw clay. The maximum adsorption capacities followed the order of Cr2+ > Cu2+ >Cd2+ for both materials. Furthermore, the adsorption equilibrium data of Cu2+, Cd2+ and Cr3+ by humic acid modified clay showed that the Langmuir model provided better correlation of the equilibrium data than the Freundlich model, as well as for the adsorption of Cu2+ and Cd2+ by the raw clay. However, Cr3+ adsorption isotherm of the raw clay was better represented by the Langmuir model, indicating that the adsorption mechanisms of the trivalent metal ion on humic acid modified Ca-montmorillonite was quite different from that of the raw Camontmorillonite. Finally, the adsorption kinetics was evaluated utilizing the Pseudo-first-order, Pseudosecond-order and Elovich equations, respectively. The results showed that the adsorption kinetic data fit well by the Pseudo-second-order equation for all studied systems, suggesting that the adsorption rate depended on the number of ions on the adsorbent surface. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Isotherm, Adsorption Kinetics, Ca-Montmorillonite, Cadmium, Cd(II), Chromium, Clay, Copper, Cr(III), Cu(II), Equilibrium, Freundlich, FTIR, Heavy Metals, Heavy-Metals, Humic Acid, Isotherm, Kinetic, Kinetics, Langmuir, Metal Ions (Cu2+ ,Cd2+ and Cr3+), Modified Clay, Modified Clays, Montmorillonite, Na-Montmorillonite, Pseudo-Second-Order, Removal, Sorbent, Sorption, Waste-Water, X-Ray Diffraction

# Title: Geofizika

Full Journal Title: [Geofizika](http://geofizika-journal.gfz.unizg.hr/past-issues.htm)

ISO Abbreviated Title: Geofizika

JCR Abbreviated Title: Geofizika

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Vilibic, I. (2009), Bibliometric analysis of the Adriatic-related oceanography and meteorology publications. *Geofizika*, **26** (2), 229-243.

Full Text: [2009\Geofizika26, 229.pdf](2009/Geofizika26,%20229.pdf)

Abstract: This paper aims to quantify the productivity of research concerning the Adriatic Sea, with a focus on oceanography and meteorology. Productivity and impact were measured by analysing articles and citations from the Thomson Reuters Web of Science database, spanning the period 1994-2008. The most productive country was Italy but the highest number of citations was achieved by articles from Germany (all Adriatic publications) and Spain (“Oceanography” and “Meteorology and atmospheric sciences”, only). By contrast, the second-most productive country, Croatia, had the lowest citation rate. Collaborations between Adriatic researchers were driven not only by the geographical position of a country (e. g., Italy vs. Croatia), but also by investment rates in Adriatic research (e. g., Italy vs. USA and Croatia vs. USA). Such collaborations substantially improved the impact of the research, especially from transitional countries such as Croatia.

Keywords: Adriatic, Articles, Bibliometric, Bibliometric Analysis, Bibliometrics, Citation, Citations, Countries, Croatia, Database, Impact, Index, Journals, Meteorology, Oceanography, Publications, Research, Researchers, Science, Scientific Co-Authorship, Spain, Thomson Reuters, USA, Web of Science

# Title: Geographical Analysis

Full Journal Title: Geographical Analysis

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Boykoff, M.T. and Boykoff, J.M. (2007), Climate change and journalistic norms: A case-study of US mass-media coverage. *Geoforum*, **38** (6), 1190-1204.

Full Text: [2007\Geoforum38, 1190.pdf](2007/Geoforum38,%201190.pdf)

Abstract: The Intergovernmental Panel on Climate Change - comprised of top climate scientists from around the globe - has reached consensus that human activities have contributed significantly to global climate change. However, over time, the United States has refused to join concerted international efforts - such as the Kyoto Protocol - to curb human activities contributing to climate change. US newspaper and television media constitute key influences among a set of complex dynamics shaping information dissemination in this politicized environment. Mass-media coverage of climate change is not simply a random amalgam of newspaper articles and television segments; rather, it is a social relationship between scientists, policy actors and the public that is mediated by such news packages. This paper demonstrates that consistent adherence to interacting journalistic norms has contributed to impediments in the coverage of anthropogenic climate change science. Through analysis of US newspaper and television coverage of human contributions to climate change from 1988 through 2004, this paper finds that adherence to first-order journalistic norms - personalization, dramatization, and novelty - significantly influence the employment of second-order norms - authority-order and balance - and that this has led to informationally deficient mass-media coverage of this crucial issue. By critically scrutinizing US print and television media as a ‘public arena,’ we improve understanding of how journalistic activities have shaped interactions at the interface with climate science, policy and the public. (C) 2007 Elsevier Ltd. All rights reserved.

Keywords: Activities, Adherence, Amalgam, Analysis, Balance, Bias, Change Risk, Climate Change, Coverage, Dissemination, Ecology, Employment, Environment, First Order, Global Warming, Human, Impact, Information, Journalism, Mass-Media, News, Policy, Politics, Representations, Science, Second-Order, Social, Social-Problem, Television, United States, US

# Title: Geographical Analysis

Full Journal Title: Geographical Analysis

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Haining, R.P., Kerry, R. and Oliver, M.A. (2010), Geography, spatial data analysis, and geostatistics: An overview. *Geographical Analysis*, **42** (1), 7-31.

Full Text: [2010\Geo Ana42, 7.pdf](2010/Geo%20Ana42,%207.pdf)

Abstract: Geostatistics is a distinctive methodology within the field of spatial statistics. In the past, it has been linked to particular problems (e. g., spatial interpolation by kriging) and types of spatial data (attributes defined on continuous space). It has been used more by physical than human geographers because of the nature of their types of data. The approach taken by geostatisticians has several features that distinguish it from the methods typically used by human geographers for analyzing spatial variation associated with regional data, and we discuss these. Geostatisticians attach much importance to estimating and modeling the variogram to explore and analyze spatial variation because of the insight it provides. This article identifies the benefits of geostatistics, reviews its uses, and examines some of the recent developments that make it valuable for the analysis of data on areal supports across a wide range of problems.

Keywords: Time-Series Framework, Soil Properties, Atmospheric-Pollution, Maximum-Likelihood, Sampling Schemes, Prediction, Variogram, Uncertainty, Simulation, Classification

# Title: Geographical Journal

Full Journal Title: Geographical Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0016-7398

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Johnson, J.H. (1959), The commercial use of peat in Northern Ireland. *Geographical Journal*, **125** (3-4), 398-400.

Full Text: [-1959\Geo Res125, 398.pdf](-1959/Geo%20Res125,%20398.pdf)

? Hulme, M. (2008), The conquering of climate: Discourses of fear and their dissolution. *Geographical Journal*, **174** (1), 5-16.

Full Text: [2008\Geo Res174, 5.pdf](2008/Geo%20Res174,%205.pdf)

Abstract: We are living in a climate of fear about our future climate. The language of the public discourse around global warming routinely uses a repertoire which includes words such as ‘catastrophe’, ‘terror’, ‘danger’, ‘extinction’ and ‘collapse’. To help make sense of this phenomenon the story of the complex relationships between climates and cultures in different times and in different places is in urgent need of telling. If we can understand from the past something of this complex interweaving of our ideas of climate with their physical and cultural settings we may be better placed to prepare for different configurations of this relationship in the future. This paper examines two earlier European discourses of fear associated with climate - one from the early-modern era (climate as judgement) and one from the modern era (climate as pathology) - and traces the ways in which these discourses formed and dissolved within a specific cultural matrix. The contemporary discourse of fear about future climate change (climate as catastrophe) is summarised and some ways in which this discourse, too, might be dissolved are examined. Conventional attempts at conquering the climatic future all rely, implicitly or explicitly, upon ideas of control and mastery, whether of the planet, of global governance or of individual and collective behaviour. These attempts at ‘engineering’ future climate seem a degree utopian and brash. Understanding the cultural dimensions of climate discourses offers a different way of thinking about how we navigate the climatic future. However our contemporary climatic fears have emerged - as linked, for example, to neoliberal globalism, to ecological modernisation and the emergence of a risk society, or to a deeper instinctive human anxiety about the future - they will in the end be dissipated, re-configured or transformed as a function of cultural change.

Keywords: Climate, Culture, Discourse, Global Warming, Fears, Science, Destruction, Eruption, Weather, Debate, World, Risk, War, US

# Title: Geographical Research

Full Journal Title: Geographical Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1745-5863

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Laffan, S.W. (2010), The citation relationships between journals of geography and cognate disciplines. *Geographical Research*, **48** (2), 166-180.

Full Text: [2010\Geo Res48, 166.pdf](2010/Geo%20Res48,%20166.pdf)

Abstract: There is an ongoing debate concerning the relationship between the disciplinary ends of the broad spectrum that is geography and also the relationship between geography and other disciplines, including the extent to which it is self-focussed or inward looking. These issues were assessed using an analysis of citation relationships between journals in the Thompson Scientific Journal Citation Reports databases at the category level. Thirty-four categories were used, comparing the two geography categories (‘Geography’, representing human geography and ‘Geography, Physical’, representing physical geography) with 32 other cognate categories. A matrix of the citation relationships between each category was developed using a relatedness factor that corrects for the opportunity for citations to occur. The resultant matrix of factors indicates that human geography journals are considerably more likely to cite their own papers than are those of physical geography, but that they are by no means the most self-citing of the journals assessed. Both human and physical geography journals have strong citation relationships with several other disciplines, with those for human geography most often being net export relationships in the sense of a balance of trade. This finding contradicts previous assertions that human geography imports more than it exports. The citation relationships of physical geography are smaller than those of human geography, and are typically small net imports. The relationship between human and physical geography journals is a small net export from physical geography to human geography, but their total trade volume is considerably smaller than their respective relationships with other disciplines. These results are likely to be caused by many factors in addition to the actual relatedness between disciplines and sub-disciplines, but they do represent a benchmark against which more detailed analyses can be assessed.

Keywords: Analysis, Bibliometrics, Citation, Citation Analysis, Citations, Future, Geography Journals, Human Geography, Journals, Physical Geography, Thrift, Nigel

? Wallis, P.J., Mac Nally, R. and Langford, J. (2011), Mapping local-scale ecological research to aid management at landscape scales. *Geographical Research*, **49** (2), 203-216.

Full Text: 2011\Geo Res49, 203.pdf

Abstract: Natural resource management is typically defined by landscape-scale management zones, such as the Catchment Management Authority boundaries of the southern Murray-Darling Basin in Australia. Ecological research generally deals with local-scale phenomena, with studies at the scale of such landscape management units arising only recently. We developed a method that links local-scale ecological research to landscape-scale management zones, which is presented here as a geographical bibliographic database. This research proceeded in four phases. First, we assessed three decades of ecological research in the Goulburn-Broken Catchment in Victoria, Australia, using this method, revealing the locations where research has taken place across the landscape, and the research themes dominant in different bioregions. Second, we assessed the purposes to which the method could be applied. Third, we tested the method against one of these potential purposes to review ecological research in a subcatchment case study. Last, we interrogated the method to answer an ecological question. This methodological analysis demonstrated that mapping ecological research in this way allows the user to identify geographic gaps in research coverage, assist in limiting search results to a location of interest and to address location-specific ecological questions. In combination with landscape classification methods, such as biogeographic regionalisation units, this method can be used to evaluate research coverage across similar ecological communities.

Keywords: Bat Nyctophilus-Geoffroyi, Bibliographic, Bioregions, Box-Ironbark Forests, Ecological Processes, Fragmented Agricultural Landscape, Geographic Bibliographic Database, Goulburn-Broken, Herbivore-Epilithon Interaction, Landscapes, Maccullochella-Peelii-Peelii, Marsupial Antechinus-Flavipes, Massively Altered Landscapes, Murray-Darling Basin, Phascogale-Tapoatafa Marsupialia, Research, Review, Scientometrics, South-Eastern Australia

# Title: Geographical Research

Full Journal Title: Geographical Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? 郭怀成 周丰 刀谞(2008), 地统计方法学研究进展. *Geographical Research*, **27** (5), 1191-1202.

# Title: Geography

Full Journal Title: Geography

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0016-7487

Issues/Year:

Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

: Impact Factor

? Dwyer, D.J. (1958), Peat fuel production in the Irish Republic. *Geography*, **43** (2), 126-128.

# Title: Geological Journal

Full Journal Title: Geological Journal

ISO Abbreviated Title: Geol. J.

JCR Abbreviated Title: Geol J

ISSN: 0072-1050

Issues/Year: 4

Journal Country/Territory: England

Language: English

Publisher: John Wiley & Sons Ltd

Publisher Address: Baffins Lane Chichester, W Sussex PO19 1UD, England

Subject Categories:

Geosciences, Interdisciplinary: Impact Factor

? Tatar, O., Temiz, H., Tutkun, S.Z., Park, R.G. and Stimpson, I.G. (1993), Surface deformation and tectonic setting of the 13 March 1992 Erzincan earthquake, eastern Turkey. *Geological Journal*, **28** (3-4), 327-333.

Full Text: [1993\Geo J28, 327.pdf](1993/Geo%20J28,%20327.pdf)

Abstract: The earthquake of 13 March 1992 (Ms = 6-8) in the densely populated Erzincan region of eastern Turkey resulted in about 500 deaths, at least 2000 people injured and widespread destruction of buildings. The results are presented of field observations carried out within the Erzincan Basin immediately after the earthquake. The main area of surface deformation is about 55 km2 in extent and lies 15 km south-east of Erzincan. Surface fractures with significant displacements were observed with orientations as follows: strike-slip 095-110-degrees (dextral), 040-degrees (sinistral) and 090-degrees (sinistral); extensional 150-180-degrees. Most of the observed fractures are consistent with the Harvard centroid moment tensor solution for the main shock, which indicates north-south compressional and east-west extensional principal horizontal stress axes. It is suggested that the earthquake probably occurred as a result of dextral strike-slip motion on a segment of the North Anatolian Fault Zone.

# Title: Geological Society of America Bulletin

Full Journal Title: Geological Society of America Bulletin

ISO Abbreviated Title: Geol. Soc. Am. Bull.

JCR Abbreviated Title: Geol Soc Am Bull

ISSN: 0016-7606

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Assoc Engineering Geologists Geological Society Amer

Publisher Address: Texas A & M Univ, Dept Geology & Geophysics, College Stn, TX 77843-3115

Subject Categories:

Geosciences, Interdisciplinary: Impact Factor

? Swenson, F.A. (1948), Geology and ground-water resources of Iwo-Jima. *Geological Society of America Bulletin*, **59** (10), 995-1008.

Full Text: [-1959\Geo Soc Ame Bul59, 995.pdf](-1959/Geo%20Soc%20Ame%20Bul59,%20995.pdf)

Abstract: Iwo Jima, in the western Pacific Ocean, consists of Motoyama, a broad volcanic cone, at the north, and Mt. Suribachi at the south, with an undulating isthmus between. Motoyama is largely light-gray-buff tuff. A thick andesitic lava flow under Suribachi, exposed in several places, is overlain by a thick deposit of cinder and scoria. The isthmus (called Tidorigahara by the Japanese) is underlain by more than 200 feet of loose black volcanic ash and fine cinder derived from Suribachi. Several small coral reefs are located about 340 and 110 feet above present sea level. Iwo Jima first came into existence, probably early in Pleistocene time, with the building above sea level of the tuff cone of Motoyama. Quite late in the active life of Motoyama, volcanic activity on the southwestern flank resulted in the formation of Suribachi. This activity may have started with the welling up of the andesitic lava which underlies Suribachi. Following the major eruption of Suribachi, relative sea level changed, and the sea stood about 360 feet higher than at present. The broad cone of Motoyama was beveled; the relative sea level then dropped 240 feet, with minor halts to about 120 feet above present level. As the island rose, Suribachi burst forth in its last stage of explosive activity. Wave erosion cut deeply into the andesite flow of Suribachi, and a prominent bench level was formed 120 feet above present sea level. The Japanese on the island were often faced with serious water shortages. Americans drilled wells and obtained moderately large supplies of usable water. The temperature of the water ranges from 105° to 179° F., and the water is somewhat mineralized. The most favorable area for ground-water development is the isthmus.

Aki, K. (1988), Impact of earthquake seismology on the geological community since the Benioff zone. *Geological Society of America Bulletin*, **100** (5), 625-629.

Full Text: [1988\Geo Soc Ame Bul100, 625.pdf](1988/Geo%20Soc%20Ame%20Bul100,%20625.pdf)

Abstract: For a small segment of a scientific community to make a significant impact on the broader community, the segment needs to gain strength by developing a consensus within itself. Earthquake seismologists reached a consensus about the existence of deep-focus earthquakes about 1930 and accepted the first quantitative measure of earthquake magnitude in the 1940s. Benioff (1949, 1954) was able to present this consensus to the geological community by publishing a coherent picture of deep tectonic processes in the Bulletin of the Geological Society of America. The next major impact from earthquake seismology after the Benioff zone came from the final acceptance of Reid’s elastic rebound theory in the early 1960s after two controversies were resolved. The mathematical framework for determining the earthquake fault process from observed seismograms was firmly established and has been extensively used in the past two decades. One outcome was the new measure of the size of an earthquake, seismic moment, which directly links geological observations of faults with the seismic ground motions. The latest impact which has begun to be felt by the geological community comes from the consensus about “seismic tomography” which represents the commitment of the seismological community to go beyond the classic one- dimensional earth model to search for a three-dimensional image of Earth’s interior.

# Title: Geology

Full Journal Title: [Geology](http://www.gsajournals.org/gsaonline/?request=get-archive&issn=0091-7613)

ISO Abbreviated Title: Geology

JCR Abbreviated Title: Geology

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Journal Country/Territory: United States

Language: English

Publisher: Geological Soc America, Inc

Publisher Address: PO Box 9140, Boulder, CO 80301-9140

Subject Categories:

Geology: Impact Factor

? Smit, J., Montanari, A., Swinburne, N.H.M., Alvarez, W., Hildebrand, A.R., Margolis, S.V., Claeys, P., Lowrie, W. and Asaro, F. (1992), Tektite-bearing, deep-water clastic unit at the cretaceous-tertiary boundary in northeastern Mexico. *Geology*, **20** (2), 99-103.

Abstract: The hypothesis of Cretaceous-Tertiary (K-T) boundary impact on Yucatan, Mexico, predicts that nearby sites should show evidence of proximal impact ejecta and disturbance by giant waves. An outcrop along the Arroyo el Mimbral in northeastern Mexico contains a layered clastic unit up to 3 m thick that interrupts a biostratigraphically complete pelagic-marl sequence deposited at more than 400 m water depth. The marls were found to be unsuitable for determining magnetostratigraphy, but foraminiferal biostratigraphy places the clastic unit precisely at the K-T boundary. We interpret this clastic unit as the deposit of a megawave or tsunami produced by an extraterrestrial impact. The clastic unit comprises three main subunits. (1) The basal “spherule bed” contains glass in the form of tektites and microtektites, glass spherules replaced by chlorite-smectite and calcite, and quartz grains showing probable shock features. This bed is interpreted as a channelized deposit of proximal ejecta. (2) A set of lenticular, massive, graded “laminated beds” contains intraclasts and abundant plant debris, and may be the result of megawave backwash that carried coarse debris from shallow parts of the continental margin into deeper water. (3) At the top, several thin “ripple beds” composed of fine sand are separated by clay drapes; they are interpreted as deposits of oscillating currents, perhaps a seiche. An iridium anomaly (921 +/- 23 pg/g) is observed at the top of the ripple beds. Our observations at the Mimbral locality support the hypothesis of a K-T impact on nearby Yucatan.

Keywords: Texas

Dorsey, R.J., Umhoefer, P.J. and Falk, P.D. (1997), Earthquake clustering inferred from Pliocene Gilbert-type fan deltas in the Loreto basin, Baja California Sur, Mexico. *Geology*, **25** (8), 679-682.

Abstract: A stacked sequence of Pliocene Gilbert-type fan deltas in the Loreto basin was shed from the footwall of the dextral-normal Loreto fault and deposited at the margin of a marine basin during rapid fault controlled subsidence. Fan-delta parasequences coarsen upward from marine siltstone and sandstone at the base, through sandy bottomsets and gravelly foresets, to gravelly nonmarine topsets. Each topset unit is capped by a thin shell bed that records marine flooding of the delta plain. Several mechanisms may have produced repetitive vertical stacking of Gilbert deltas: (1) autocyclic delta-lobe switching; (2) eustatic sea-level fluctuations; (3) climatically controlled fluctuations in sediment input; and (4) episodic subsidence produced by temporal clustering of earthquakes. We favor hypothesis 4 far several reasons, but hypotheses 2 and 3 cannot be rejected at this time. Earthquake clustering can readily produce episodic subsidence at spatial and temporal scales consistent with stratigraphic trends observed in the Loreto basin. This model is supported by comparison with paleoseismological studies that document clustering on active faults over a wide range of time scales. Earthquake clustering is a nem concept in basin analysis that may be helpful for understanding repetitive stratigraphy in tectonically active basins.

? Jacoby, G.C., Bunker, D.E. and Benson, B.E. (1997), Tree-ring evidence for an AD 1700 Cascadia earthquake in Washington and northern Oregon. *Geology*, **25** (11), 999-1002.

Abstract: Geologic evidence and radiocarbon dating indicate that a subduction earthquake, or series of earthquakes, occurred about 300 yr ago along the Pacific Northwest coast of the United States. Some radiocarbon dates come from remnants of the myriad trees drowned by coincident subsidence. At several coastal lowland locations in Washington and northern Oregon, we located two or more trees that survived partial submergence and lived to the 1990s. Many of them were damaged by shaking and/or inundation. Some survivors recorded the event(s) by anomalous changes in ring width or anatomy of their annual rings, The disturbance initiating the changes can be dated to between the growing seasons of A.D. 1699 and 1700. One killed tree has a last ring of A.D. 1699. Tree-ring dated evidence of disturbance extends along about 100 km of coastal Washington and northern Oregon, These results support the inference that a great (M-W similar to 8) earthquake or larger at the Cascadia subduction zone generated the historical tsunami that struck Japan in January 1700.

Keywords: Lodgepole Pine, Sitka Spruce, Subduction Zone, Tolerance, Roots, State

Geist, E.L. and Zoback, M.L. (1999), Analysis of the tsunami generated by the MW 7.8 1906 San Francisco earthquake. *Geology*, **27** (1), 15-18.

Abstract: We examine possible sources of a small tsunami produced by the 1906 San Francisco earthquake, recorded at a single tide gauge station situated at the opening to San Francisco Bay. Coseismic vertical displacement fields were calculated using elastic dislocation theory for geodetically constrained horizontal slip along a variety of offshore fault geometries. Propagation of the ensuing tsunami was calculated using a shallow-water hydrodynamic model that takes into account the effects of bottom friction. The observed amplitude and negative pulse of the first arrival are shown to be inconsistent with small vertical displacements (similar to 4-6 cm) arising from pure horizontal slip along a continuous right bend in the San Andreas fault offshore. The primary source region of the tsunami was most likely a recently recognized 3 km right step in the San Andreas fault that is also the probable epicentral region for the 1906 earthquake. Tsunami models that include the 3 Inn right step with pure horizontal slip match the arrival time of the tsunami, but underestimate the amplitude of the negative first-arrival pulse. Both the amplitude and time of the first arrival are adequately matched by using a rupture geometry similar to that defined for the 1995 Mw (moment magnitude) 6.9 Kobe earthquake: i.e., fault segments dipping toward each other within the stepover region (83 degrees dip, intersecting at 10 km depth) and a small component of slip in the dip direction (rake =-172 degrees). Analysis of the tsunami provides confirming evidence that the 1906 San Francisco earthquake initiated at a right step in a right-lateral fault and propagated bilaterally, suggesting a rupture initiation mechanism similar to that for the 1995 Robe earthquake.

Hitchcock, C.S. and Kelson, K.I. (1999), Growth of late Quaternary folds in southwest Santa Clara Valley, San Francisco Bay area, California: Implications of triggered slip for seismic hazard and earthquake recurrence. *Geology*, **27** (5), 391-394.

Abstract: We combine analysis of geologic and geomorphic data with observations of deformation during the 1989 Loma Prieta earthquake in northern California to evaluate the contribution of aseismic triggered slip and creep processes to cumulative late Cenozoic deformation along the northeastern Santa Cruz Mountains range front, Deformed late Pleistocene alluvial fans and terraces provide evidence for localized late Quaternary uplift above range-bounding reverse faults within the southwestern Santa Clara Valley adjacent to the range front. On the basis of offset of late Quaternary surfaces, the long-term average slip rate on the primary range bounding structure (Monte Vista fault) is estimated to be similar to 0.2 mm/yr, Northeast of the range front are several discontinuous northwest-trending folds, indicated by alignment of late Pleistocene alluvial-fan apices, anomalous stream channel convexities, and topographic and vegetation lineaments within a 3-5-km-wide, northwest-trending corridor. Subsurface geologic and geophysical data support the interpretation that the surface folds are a result of blind reverse faulting along the Cascade fault beneath the Santa Clara Valley. From stream incision rates we estimate an average uplift rate of 0.2±0.05 mm/yr for the Cascade fault. Measurements of triggered and postseismic slip following the 1989 Loma Prieta earthquake, combined with estimates of the average return period for Loma Prieta-type events, suggest a long-term average deformation rate along the range front of 0.25-0.4 mm/yr associated with these aseismic processes. This range of values is comparable to rates of late Quaternary deformation on the range-front faults derived from geologic and geomorphic data, and it suggests that growth of the overlying folds is at least partially the result of triggered slip and postseismic creep associated with nearby Loma Prieta-type earthquakes. If this inference is correct, then the return period for independent events on the range-front faults probably is greater than that suggested by the long-term average geologic slip rates.

# Title: Geomicrobiology Journal

Full Journal Title: [Geomicrobiology Journal](http://www.ingentaconnect.com/content/tandf/ugmb)

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Subject Categories:

Environmental Sciences: Impact Factor 1.537, 23/126 (1999); Impact Factor 1.936, 13/127 (2000)

Geosciences, Interdisciplinary: Impact Factor

? Poulson, S.R., Colberg, P.J.S. and Drever, J.I. (1997), Toxicity of heavy metals (Ni, Zn) to Desulfovibrio desulfuricans. *Geomicrobiology Journal*, **14** (1), 41-49.

Abstract: This study is the first to address systematically five important factors necessary to quantify the toxicity of heavy metals to sulfate-reducing bacteria: metal precipitation due to reaction with components in the media; metal adsorption onto solid phases; precipitation of metalsulfides due to reaction with sulfide initially present in an active microcosm; quantification of initial metal concentrations; and aqueous metal complexing, which reduces metal bioavailability. The toxicity of Ni and Zn To pure cultures of Desulfovibrio desulfuricans was quantified using a chemically defined medium at pH 7.2. Free heavy metal ion activity was calculated using MINTEQA2 and an amended database. A total activity of Ni2+ (aq) + Zn2+ (aq) greater than approximately 2.5×10-5 molal is toxic to D. desulfuricans. The results indicate that attempts to remediate Ni and/or Zn contamination by bacterial sulfate reduction are likely to be successful only if total Ni + Zn activity is below this level in order to revent heavy metal toxicity.

Keywords: Bacterial Sulfate Reduction, Digested Sewage-Sludge, Soluble Organic-Matter, Waters, Complexation, Resistance, Inhibition, Chemistry, Removal, System, Heavy Metals, Metal Sulfides, Precipitation, Sulfate Reduction, Sulfidogenesis, Toxicity

? Urrutia, M.M., Roden, E.E., Fredrickson, J.K. and Zachara, J.M. (1998), Microbial and surface chemistry controls on reduction of synthetic Fe(III) oxide minerals by the dissimilatory iron-reducing bacterium *Shewanella alga*. *Geomicrobiology Journal*, **15** (4), 269-291.

Full Text: Geo J21, 269

Abstract: The role of Fe(ll) biosorption and the effect of medium components on the rare and long-term extent of Fe(lll) oxide reduction (FeRed) by a dissimilatory Fe(lll)-reducing bacterium (Shewanella alga strain BrY) were examined in batch culture experiments. introduction of fresh S. alga cells into month-old cultures in which Fe(III) reduction had ceased resulted in further reduction of synthetic amorphous Fe(lll) oxide, hematite, and two forms of goethite (Gt). Fresh S. alga cells were also able to reduce a substantial amount of synthetic Ct that had been partly or completely saturated with sorbed Fe(ll). Cells that had been precoated with Fe(ll) showed a reduced rate and capacity for FeRed These results indicated that biosorption of Fe(II) had a major impact on FeRed S. alga cells were shown to have an Fe(ll) sorption capacity of similar to 0.1 mmol g-1, compared with similar to 0.25 mmol g-1 determined for the synthetic Ct. Sorption experiments with component mixtures indicated that direct interaction between cells and oxide resulted in increased Fe(II)-binding capacity of the mixed system, possibly through production of exopolymeric materials by the cells. Medium constituents that affected Fe(ll) speciation were shown to have a significant indirect influence on the extent of oxide reduction. Malate, which formed soluble complexes with Fe(ll), promoted the extent of oxide reduction. In contrast, high (mM) PO43- concentrations favored surface/bulk precipitation processes which reduced the extent of oxide reduction. Collectively, our results indicate that Fe(ll) sorption by oxide and cell surfaces, together with Fe(ll) complexation by or precipitation with medium components, all influence the rate and extent of FeRed. Furthermore, saturation of sorption cites with Fe(ll) does not appear to limit the ability of S. alga to reduce Fe(lll) oxides, especially if conditions favor growth.

Keywords: Fe(III) Oxide Reduction, Fe(III) Biosorption, Surface Saturation, Fe(II) Complexation

Keywords: Organic-Carbon Oxidation, Polluted Aquifer Vejen, Ferric Iron, Aquatic Sediments, Manganese, Kinetics, Denmark, Wetland, Growth

Purvis, O.W., Bailey, E.H., McLean, J., Kasama, T. and Williamson, B.J. (2004), Uranium biosorption by the lichen *Trapelia involuta* at a uranium mine. *Geomicrobiology Journal*, **21** (3), 159-167.

Full Text: [G\Geo J21, 159.pdf](G/Geo%20J21,%20159.pdf)

Abstract: Metal localisation was investigated in the lichenised ascomycete Trapelia involuta growing on a range of uraniferous minerals including metazeunerite [Cu(UO2)2(AsO4)2·8H2O], metatorbernite [Cu(UO2)2(PO4)2·8H2O], autunite [Ca(UO2)2(PO4)2·10H2O] and uranium-enriched iron oxide and hydroxide minerals at the abandoned South Terras mine site, Cornwall, UK. Apothecia from samples collected from waste dumps at the mine have an unusually dark colour that decolorized with NaOCl, an observation which together with Fourier Transform Infrared Spectroscopy of apothecial extracts, suggested the presence of melanin-like pigments. X-ray element mapping and probe traverses across the lichen-rock interface identify the highest U, Fe, and Cu concentrations in the outer parts of melanised apothecia. Accumulation of mineral particulates and complexing with lichen acids are not considered responsible for this since element ratios in the traverses do not correspond with those of likely mineral phases and lichen metabolites are localised in different tissues. Metal biosorption by melanin-like pigments are likely to be responsible for the observed metal fixation. No detectable U or Cu was observed in control samples although Fe showed a similar localisation in some specimens. The high concentrations of mucopolysaccharides and P recorded inside apothecia (within asci containing reproductive spores and hypothecium) suggests that the formation of melanised tissues may help protect vital reproductive tissues from the toxic effects of U and other metals, since the uranyl ion complexes strongly with phosphate species.

Keywords: Lichens, Melanin, Phosphorus, Polysaccharides, Toxic Metals, Uranium

? Saxena, P., Bhattacharyya, A.K. and Mathur, N. (2006), Nickel tolerance and accumulation by filamentous fungi from sludge of metal finishing industry. *Geomicrobiology Journal*, **23** (5), 333-340.

Full Text: [2006\Geo J23, 333.pdf](2006/Geo%20J23,%20333.pdf)

Abstract: Industrialization, urbanization and increased vehicular traffic have resulted in increased contamination of our environment by heavy metals. The long persistence of heavy metals in nature has in turn resulted in development of metal resistant microbial strains. These strains are minimizing heavy metals toxicity, either by metal complexation or precipitation and other mechanisms. Characterization of fungal diversity was done in contaminated soil of the Wazirpur industrial area throughout the year. In this area highly acidic hazardous solid waste produced high concentration of heavy metals (Ni, Cu, Cr, Fe, Mn). Nickel toxicity is a major environmental concern. Due to long persistence of this waste in the environment without any treatment, many fungal isolates from the surrounding environment settle on the upper surface of waste. Few of them are capable of growing in the toxic conditions. More than 20 strains were isolated, most of them belonging to species of Aspergillus, Penicillium, Fusarium and Mucor genera. Seasonal variation in fungal diversity was significant. Four filamentous fungal isolates were found to be resistant for nickel(II) and a strain of Papulaspora sepedonoides reported first time for bioremediation of Ni(II) in this investigation, which is absorbing 62.33 mu mol Ni gr-1. These fungal isolates showed a high level (100-10000 mg kg-1) of resistance for Ni(II) salt and removing Ni(II) from solution. Metal uptake varied with fungi. The toxicity also was influenced by different factors like pH and composition of growth medium.

Keywords: Heavy Metal Resistance, Persistance, Complexation, Seasonal Variation, Uptake and Hazardous, Chrysogenum Cell-Walls, Pb Binding-Sites, Aspergillus-Niger, Heavy-Metals, Structural Determination, Stability-Constants, Exafs Spectroscopy, Rhizopus-Arrhizus, Aqueous-Solutions, Biosorption

# Title: Geomorphology

Full Journal Title: [Geomorphology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5887&_auth=y&_acct=C000010279&_version=1&_urlVersion=0&_userid=1187928&md5=bc4f0aba1f01f3b83566b780ec9dac81)

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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:

Geography Geology Geosciences, Interdisciplinary: Impact Factor

Gill, T.E. (1996), Eolian sediments generated by anthropogenic disturbance of playas: Human impacts on the geomorphic system and geomorphic impacts on the human system. *Geomorphology*, **17** (1-3), 207-228.

Full Text: [G\Geomorphology17, 207.pdf](G/Geomorphology17,%20207.pdf)

Abstract: In many of the Earth’s arid and semiarid lands, saline lakes, playas and similar landforms are disturbed as a result of human activity. Diversion and/or consumptive use of surface or groundwaters has created the effect of a climate change in numerous drainage basins, resulting in the desiccation of lakes and reactivation of eolian processes at many locations. Playas are natural sites for extensive eolian activity because of the deposition of elastic and chemical sediments in basins by surface water (via fluvial transport) and groundwater (via efflorescence). Wind erosion and deposition of playa sediments has had a major role in the development of landforms and sedimentary units in the present (lunette fields worldwide; Simpson Desert, Australia) and geological past, from the Triassic (Mercia Mudstone, England) to the Quaternary (Lahontan Basin and Cima Volcanic Field, USA). Anthropogenic disturbance or desiccation of playa systems has resulted in the eolian transport of sand (e.g. Lop Nor, China; Konya Basin, Turkey; Rajasthan, India; Kappakoola, Australia, several sites in West Africa) and/or dust (e.g. Aral Sea, Kazakhstan/Uzbekistan; Old Wives Lake, Canada; Kara Begat Gel, (ex-)USSR; Lake Texcoco, Mexico; Owens (dry) Lake, Mono Lake and other playas, USA). Typically, this is accomplished by abstraction of water and/or removal of vegetation from terminal lake basins. An extensive review of the literature documents many examples and/or potential examples of such phenomena in numerous nations. The reactivation of eolian processes from closed basins produces air pollution in the form of fugitive dust (naturally occurring compounds released into the atmosphere by human actions) and has significant environmental and economic impacts on human activities in the surrounding areas. Restoration or mitigation of degraded land on or surrounding playas has been accomplished at Lake Texcoco, Kara Begat Gol and the Konya Basin and is being actively implemented at Mono Lake, Owens (dry) Lake and the Ara Sea.

? Doyle, M.W. and Julian, J.P. (2005), The most-cited works in *Geomorphology*. *Geomorphology*, **72** (1-4), 238-249.

Full Text: [2005\Geomorphology72, 238.pdf](2005/Geomorphology72,%20238.pdf)

Abstract: We conducted a review and analysis of the references cited in articles published (1995–2004) in the journal Geomorphology and also solicited comments from the authors of the most-cited works on their major influences. Of the 31,696 unique works cited in the journal, only 22 were referenced at least 20 times, with the vast majority (92%) cited only once or twice. We divided the citations into the 10 most-cited books (i.e., complete volumes) and 10 most-cited papers (i.e., journal articles, book chapters, reports). A total of 23 different researchers were responsible for the 20 works, with one (Wolman) being an author or co-author of a quarter of them. Seven of the ten most-cited papers were based on work in the USGS in the mid-twentieth century, indicating a particularly fruitful time of geomorphic research and a particularly important cohort of scientists. Based on our citation analysis and author commentaries, we suggest that classic works in geomorphology are most likely to be those that provide useful knowledge and those that incorporate interdisciplinary perspectives.

Keywords: Bibliometric, Citation Analysis, Citations, Classics, Frequency, Geometry, History of Geomorphology, Journal, Research, Science, Streams

# Title: Geophysical Journal International

Full Journal Title: Geophysical Journal International

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Publisher Address: PO Box 88, Osney Mead, Oxford OX2 0NE, Oxon, England

Subject Categories:

Geochemistry & Geophysics: Impact Factor 1.544, 14/45 (2000)

? Dearing, J.A., Hay, K.L., Baban, S.M.J., Huddleston, A.S., Wellington, E.M.H. and Loveland, P.J. (1996), Magnetic susceptibility of soil: An evaluation of conflicting theories using a national data set. *Geophysical Journal International*, **127**, 728-734.

Abstract: Magnetic susceptibility values for topsoils across England are combined with data for soil type, geochemistry and concentrations of magnetotactic bacteria in order to evaluate different theories for explaining soil magnetism. Strongly magnetic soils in unpolluted areas are found over weakly magnetic substrates and are dominated by ultrafine superparamagnetic grains. Magnetotactic bacteria are present in insufficient concentrations to account for strongly magnetic soils and crop burning is discounted as a major factor. A small number of samples show high values associated with either airborne magnetic particulates from pollution or residual primary ferrimagnetic minerals from igneous substrates, The results are used to construct a new mechanism for the formation of secondary ferrimagnetic minerals that links abiological weathering and biological fermentation processes, The fundamental driving force in the mechanism is Fe supply, which may be linked to climate. Observed causative associations between climate and the magnetic susceptibility of loess-palaeosol sequences are supported by the findings.

Zobin, V.M. (1997), The rupture history of the MW 8.0 Jalisco, Mexico, earthquake of 1995 October 9. *Geophysical Journal International*, **130** (1), 220-228.

Abstract: Finite-fault, broad-band teleseismic P waveform inversion was applied to the large Mw 8.0 Jalisco, Mexico, earthquake of 1995 October 9. The earthquake hypocentre was located at shallow depths just near the boundary zone between two lithospheric plates, Rivera and Cocos, and was felt with a maximum intensity of 9 MM on the Pacific coast. It was the first earthquake of magnitude greater than 6 to occur in this region since the two great Jalisco earthquakes (Ms 8.0 and 7.6) of 1932.

For inversion, we used vertical records from 14 digital stations situated 30° to 90° from the epicentre. We used the fixed rake of the thrust-type focal mechanism given by the preliminary Harvard CMT. The low-angle dipping fault plane was taken as a 180×90 km2 rectangle divided into 162 subfaults of 10×10 km2. Each subfault had five intermediate point sources along-strike, and five intermediate point sources down-dip. The size of the fault plane was changed from an initial size of 110×60 km2, estimated by RESCO as an aftershock area, to the final size of 180×90 km2, which included all significant displacements along the fault. The hypocentre was embedded 40 km from the left edge of the 180 km long fault, 40 km down-dip from the top of the fault which was situated practically along the trench axis. A boxcar source time function of width 2.0 s was used for each discrete rupture interval of each subfault. The rupture velocity was taken to be 2.8 km s-1 which is approximately 80 per cent of the shear-wave speed in the layer containing the hypocentre.

The following results on the rupture history were obtained. (1) The rupture duration was about 55 s, and slip occurred within an area of about 180×90 km2 along the Middle American trench in the depth interval from 9 to 33 km2. There were two main stages in the rupture history: during the first 18 s two main asperities at a distance of about 30 km from the earthquake hypocentre were ruptured with maximum slip up to 610 cm at a depth of 12-15 km; then during the next 37 s rupturing was observed to the north along the trench.

The slip distribution obtained shows that the faulting, originating near the boundary between the Rivera and Cocos plates, went mainly along the Rivera-North American plate boundary and is consistent with the subduction of the Rivera plate beneath North America.

Keywords: Earthquakes, Mexico, P Waves, Rivera Plate, Subduction, Tectonic Implications, Slip Distribution, Rivera Plate, Inversion, Seismicity, California, Subduction, Michoacan

Cocco, M., Pacheco, J., Singh, S.K. and Courboulex, F. (1997), The Zihuatanejo, Mexico, earthquake of 1994 December 10 (M = 6.6): Source characteristics and tectonic implications. *Geophysical Journal International*, **131** (1), 135-145.

Abstract: An analysis of the Zihuatanejo, Mexico, earthquake of 1994 December 10 (M = 6.6), based on teleseismic and near-source data, shows that it was a normal-faulting, intermediate-depth (H = 50±5 km) event. It was located about 30 km inland, within the subducted Cocos plate. The preferred fault plane has an azimuth of 130°, a dip of 79°and a rake of-86°. The rupture consisted of two subevents which were separated in time by about 2s, with the second subevent occurring downdip of the first. The measured stress drop was relatively high, requiring a Delta sigma of about a kilobar to explain the high-frequency level of the near-source spectra. A rough estimate of the thickness of the seismogenic part of the oceanic lithosphere below Zihuatanejo, based on the depth and the rupture extent of this event, is 40 km. This event and the Oaxaca earthquake of 1931 January 15 (M = 7.8) are the two significant normal-faulting, intermediate-depth shocks whose epicentres are closest to the coast. Both of these earthquakes were preceded by several large to great shallow, low-angle thrust earthquakes, occurring updip. The observations in other subduction zones show just the opposite: normal-faulting events precede, not succeed, updip, thrust shocks. Indeed, the thrust events, soon after their occurrence, are expected to cause compression in the slab, thus inhibiting the occurrence of normal-faulting events. To explain the occurrence of the Zihuatanejo earthquake, we note that the Cocos plate, after an initial shallow-angle subduction, unbends and becomes subhorizontal. In the region of the unbending, the bottom of the slab is in horizontal extension. We speculate that the large updip seismic slip during shallow, low-angle thrust events increases the buckling of the slab, resulting in an incremental tensional stress at the bottom of the slab and causing normal-faulting earthquakes. This explanation may also hold for the 1931 Oaxaca event.

# Title: Geophysical Research Letters

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Publisher Address: 2000 Florida Ave Nw, Washington, DC 20009

Subject Categories:

Geosciences, Interdisciplinary: Impact Factor

? Tanioka, Y., Satake, K., Ruff, L. and Gonzalez, F. (1994), Fault parameters and tsunami excitation of the May 13, 1993, Shumagin Islands earthquake. *Geophysical Research Letters*, **21** (11), 967-970.

Full Text: [1994\Geo Res Let21, 967.pdf](1994/Geo%20Res%20Let21,%20967.pdf)

Abstract: The Shumagin Islands earthquake of May 13, 1993, occurred in a previously identified seismic gap where a large subduction earthquake is expected. We analyzed long-period surface waves and P waves recorded on the IRIS stations to estimate the fault parameters. The Centroid Moment Tensor solution shows that the focal mechanism is a thrust type with the strike parallel to the Aleutian trench. The seismic moment is 2.0×1019 Nm and the corresponding moment magnitude is 6.8. The Moment Tensor Rate Function inversion from P waves also yields a similar focal mechanism and seismic moment. In addition, this computation provides estimates of 10 s for the duration of the source time function and 35 km for the best point source depth. These seismological analyses indicate that the fault mechanism of the 1993 earthquake was as expected, but that the magnitude was too small to fill the gap. This earthquake did not generate a tsunami large enough to be observed at the Sand Point, Alaska tide gauge or at an ocean bottom pressure gauge, at distances of 100 and 300 km, respectively. Numerical tsunami simulations result in amplitudes at both stations that are within the background noise level. Additional numerical experiments also suggest that the small tsunami amplitudes are due to the location of the source area in the shallow shelf region.

Keywords: Seismic Gap, Alaska

Pinar, A., Honkura, Y. and Kikuchi, M. (1994), Rupture process of the 1992 Erzincan earthquake and its implication for seismotectonics in eastern Turkey. *Geophysical Research Letters*, **21** (18), 1971-1974.

Full Text: Geo Res Let21, 1971

Abstract: The 13 March 1992 Erzincan earthquake is different from the previous earthquakes which have occurred along the North Anatolian fault zone (NAFZ) in that no surface rupture was observed. In order to infer a rupture process of this earthquake, we inverted the teleseismic body waves to the source using the method of Kikuchi and Kanamori [1991]. Three different subevents were then distinguished with total seismic moment of Mo = 1.2×1026 dyn.cm. The major energy release was found to be during the first subevent with seismic moment of Mo = 9.4×1025 dyn.cm, rupture length of 30 km, slip amount of 0.7 m and stress drop of 25 bars. The second subevent was right-lateral, as was the case for the first one, with a normal faulting component. It was located 10 km to the southeast from the first one at the intersection of the right-lateral NAFZ with the left-lateral Ovacik fault. The third subevent with a right-lateral mechanism was 10 km to the southeast from the second one. These results are in good harmony with regional seismotectonics in eastern Turkey.

? Satake, K. (1994), Mechanism of the 1992 Nicaragua tsunami earthquake. *Geophysical Research Letters*, **21** (23), 2519-2522.

Full Text: [1994\Geo Res Let21, 2519.pdf](1994/Geo%20Res%20Let21,%202519.pdf)

Abstract: The 1992 Nicaragua earthquake generated larger tsunamis than expected from its surface wave magnitude (M(s) 7.2) and is known as a ‘tsunami earthquake’. Seismological studies showed that the duration was very long for its size, about 100 s. Other studies have shown that the seismic moment estimated from tsunamis is an order of magnitude larger than that from seismic waves, even after the long duration is accounted for. Numerical computations of tsunamis from various fault models are made to reconcile this discrepancy. Comparison of calculated waveforms with tide gauge records shows that the fault width is 40 km, much narrower than the aftershock area, and extends only into the upper 10 km of the ocean bottom. Slip amount on the fault is estimated to be 3 m from amplitude comparisons. The fault length is estimated to be 250 km, slightly longer than the aftershock area, from comparison of the tsunami height distribution. The rigidity around the shallow fault may be smaller than that of a standard underthrust fault, and the seismic moment is estimated as 3×1020 Nm, consistent with the seismic observations. A slow rupture on the shallow fault, presumably in the subducted sediments, is responsible to the unusually large tsunami excitation.

Keywords: Subduction

? Tanioka, Y., Satake, K. and Ruff, L. (1995), Total analysis of the 1993 Hokkaido-Nansei-Oki earthquake using seismic-wave, tsunami, and geodetic data. *Geophysical Research Letters*, **22** (1), 9-12.

Full Text: [1995\Geo Res Let22, 9.pdf](1995/Geo%20Res%20Let22,%209.pdf)

Abstract: The fault geometry and slip distribution of the Hokkaido Nansei-oki, Japan, earthquake of July 12, 1993 are estimated using seismic wave, tsunami, and geodetic data. The Moment Tenser Rate Function inversion from P waves shows one nodal plane shallowly dipping to the west and the other nodal plane steeply dipping to the east. The best depth is estimated as 10-15 km. The source time history consists of an initial pulse with a duration of 10 s and moment release of 2×1020 Nm, followed by a complex rupture for at least 40 s. The Centroid Moment Tenser (CMT) solution shows one nodal plane shallowly dipping to the east and the other steeply dipping to the west. The overall seismic moment is estimated as 5.5×1020 Nm (M(W) 7.8). The joint inversion of geodetic data on Okushiri Island and tsunami waveforms in Japan and Korea shows that the largest slip, about 6 m, occurred at a small area just south of the epicenter. This corresponds to the initial rupture on a fault plane dipping shallowly to the west. The slip on the northernmost fault, dipping to the east, is about 2 m. The slips on the southern faults, dipping steeply to the west, are more than 3 m. Total seismic moment of 4.9×1020 Nm, estimated from the slip distribution, is similar to the estimate from CMT inversion.

Keywords: Japan Sea, Inversion, Parameters

Graves, R.W. (1995), Preliminary analysis of long-period basin response in the Los Angeles region from the 1994 Northridge earthquake. *Geophysical Research Letters*, **22** (2), 101-104.

Full Text: [1995\Geo Res Let22, 101.pdf](1995/Geo%20Res%20Let22,%20101.pdf)

Abstract: Long-period (1-10 sec) ground motions recorded in the Los Angeles basin region during the Northridge earthquake show complex waveforms, extended durations and multiple sets of arrivals which cannot be attributed solely to source processes or wave propagation within a plane-layered medium. These features suggest a strong interaction between the propagating seismic wave field and the laterally varying subsurface geologic structure of this region. Recorded motions at a hard rock site in the Santa Monica Mountains (scrs) are smaller by nearly a factor of three in peak velocity compared to recordings at more distant sites in the adjacent, northwest portion of the Los Angeles basin. In addition, although the rock site recording has a relatively simple wave shape, the basin site recordings are dominated by late arriving, large amplitude pulses of energy. We interpret these arrivals to be surface waves, which are generated by body waves interacting with the thickening margin of the basin. A preliminary modeling analysis of these data indicates that a combination of both large-scale (deep basin) and small-scale (shallow micro-basin) structures are needed to explain the observed responses.

Pinar, A., Honkura, Y. and Kikuchi, M. (1996), A rupture model for the 1967 Mudurnu Valley, Turkey earthquake and its implication for seismotectonics in the western part of the North Anatolian Fault Zone. *Geophysical Research Letters*, **23** (1), 29-32.

Full Text: [1996\Geo Res Let23, 29.pdf](1996/Geo%20Res%20Let23,%2029.pdf)

Abstract: Six destructive earthquakes had successively occurred from 1939 to 1967 along the North Anatolian Fault Zone. The July 22, 1967 Mudurnu Valley earthquake (Ms = 7.1) was the last of this series, with its western neighbour remaining as a seismic gaSurface ruptures associated with this earthquake appeared within a broad shear zone, extending to a distance of 80 km. The generated teleseismic body waves were so complex that they were different even at stations in the same azimuth. In this study we inverted the observed teleseismic body; waves to investigate such a presumably complicated rupture process of the Mudurnu Valley earthquake. We could identify six subevents within 2 minutes with their total seismic moment amounting to 1.1×1020 Nm. Although right-lateral strike-slip faulting was found to be dominant, two minor subevents had a dip-slip mechanism; one showed a reverse faulting mechanism and the other a normal faulting mechanism.

? Guibourg, S., Heinrich, P. and Roche, R. (1997), Numerical modeling of the 1995 Chilean tsunami. Impact on French Polynesia. *Geophysical Research Letters*, **24** (7), 775-778.

Full Text: [1997\Geo Res Let24, 775.pdf](1997/Geo%20Res%20Let24,%20775.pdf)

Abstract: On the 30th July 1995, an earthquake with magnitude of 8.1 occurred off the coast of Chile. The associated tsunami propagated across the Pacific ocean and reached French Polynesia 10 hours after the seismic event with maximum runup heights of about 2.5 meters. The most affected islands in French Polynesia were the Marquesas Islands that present few outer reefs, more gradual bottom slopes and large bays. The tsunami propagation has been modeled from Chile to Polynesian Islands, solving the shallow water equations. The water surface initialisation has been computed from Okada’s formulas, using seismic parameters of Ruegg (1996). The tsunami propagation is simulated by a finite-difference numerical model using a system of multiple grids with different grid sizes. The computed waves are in fair agreement with the recorded waves along the Chilean coasts, in Tahiti and in Nuku Hiva. The numerical results obtained in the Marquesas Islands confirm the observations of numerous eyewitnesses.

Courboulex, F., Singh, S.K., Pacheco, J.F. and Ammon, C.J. (1997), The 1995 Colima-Jalisco, Mexico, earthquake (Mw 8): A study of the rupture process. *Geophysical Research Letters*, **24** (9), 1019-1022.

Full Text: [1997\Geo Res Let24, 1019.pdf](1997/Geo%20Res%20Let24,%201019.pdf)

Abstract: In this study we map rupture characteristics of the great, shallow, thrust earthquake of October 9, 1995 which caused extensive damage to the coastal towns of Colima and Jalisco. To isolate the earthquake rupture details, we deconvolve surface waves with two empirical Green’s functions, the aftershock of October 12, 1995 (Mw 5.9) and the foreshock of October 6, 1995 (Mw 5.8), from the corresponding mainshock records. Specifically, we use a spectral water-level deconvolution to obtain 80 Apparent Source Time Functions (ASTF) at 62 stations (Rayleigh and Love waves). Durations of the ASTF, as a function of azimuth indicate that the rupture propagated toward N70 degrees W. The duration of the Source Time Function (STF) is around 62 s with a large pulse at 45 s. To map the main characteristics of the rupture, we use an inverse Radon transform of the ASTFs, assuming a ribbon fault-model aligned in the direction of the rupture propagation. Our analysis indicates that the rupture initiated about 20 km offshore of Manzanillo and propagated almost unilaterally for 150 km towards N70 degrees W, with an average rupture velocity of approximately 2.8 km/s. The earthquake was a composite of three significant subevents, the largest occurred 45 s after the initiation of the rupture and was located about 100 km away. This result is in good agreement with the inversion of deformation data, measured with GPS [Melbourne et al., 1997].

Pacheco, J., Singh, S.K., Dominguez, J., Hurtado, A., Quintanar, L., Jimenez, Z., Yamamoto, J., Gutierrez, C., Santoyo, M., Bandy, W., Guzman, M., Kostoglodov, V., Reyes, G. and Ramirez, C. (1997), The October 9, 1995 Colima-Jalisco, Mexico earthquake (*MW* 8): An aftershock study and a comparison of this earthquake with those of 1932. *Geophysical Research Letters*, **24** (17), 2223-2226.

Full Text: [1997\Geo Res Let24, 2223.pdf](1997/Geo%20Res%20Let24,%202223.pdf)

Abstract: Data from portable seismographs and a permanent local network (called RESCO) are used to locate the aftershocks of the October 9, 1995 Colima-Jalisco earthquake (Mw 8.0). The maximum dimension of the aftershock area, which is rectangular in shape, is 170 km×70 km. Our study shows that the mainshock nucleated similar to 24 km south of Manzanillo, near the foreshock of October 6, 1995 (Mw 5.8), and propagated similar to 130 km to the NW and similar to 40 km to SE. The aftershock area lies offshore and is oriented parallel to the coast. The observed subsidence of the coast is a consequence of this offshore rupture area. The aftershocks reach unusually close to the trench (within 20 km). This may be due to lack of sediments with high pole pressure at shallow depth. There are some similarities between this earthquake and the two great earthquakes of 1932 (3 June, Ms 8.1; 18 June, Ms 7.8) which occurred in this region. In both cases the aftershocks were located offshore and the coastline subsided. The sum of seismic moments and the rupture lengths of the 1932 events (1.8×1021 N-m and 280 km, respectively), however, were greater than the 1995 earthquake. Also comparison df seismograms of 1932 and 1995 earthquakes show great differences. It seems that the 1995 event is not a repeat of either June 3 or June 18, 1932 earthquakes.

? Escobedo, D., Pacheco, J.F. and Suarez, G. (1998), Teleseismic body-wave analysis of the 9 October, 1995 (M-w = 8.0), Colima-Jalisco, Mexico earthquake, and its largest foreshock and aftershock. *Geophysical Research Letters*, **25** (4), 547-550.

Full Text: [1998\Geo Res Let25, 547.pdf](1998/Geo%20Res%20Let25,%20547.pdf)

Abstract: The source process of the October 9, 1995, Colima-Jalisco, Mexico, earthquake (Mw = 8.0), and its largest foreshock and aftershock were determined from teleseismic body waves, using a least-squares inversion scheme. The three events are shallow-dipping, thrust-fault earthquakes, in agreement with the relative plate motions for Rivera-North America and Cocos-North America plate boundaries. Neither the foreshock nor the largest aftershock show significant differences in focal mechanism nor centroidal depth with respect to the average mechanism of the mainshock. The rupture of the mainshock began near the foreshock hypocenter and propagated, with a variable rupture velocity, towards the NW. The source-time function for this event shows four distinct episodes of energy release. About 50% of the moment was released at the northern end of the rupture, between 90 and 110 km from the epicenter. This rupture geometry is in agreement with crustal deformation observed inland using GPS measurements. However, the scalar seismic moment of the main shock obtained in this study (Mo = 1.84×1020) is smaller with respect to the lower frequency CMT results reported by Harvard (Mo = 1.15×1021).

? Ortiz, M., Singh, S.K., Pacheco, J. and Kostoglodov, V. (1998), Rupture length of the October 9, 1995 Colima-Jalisco earthquake (MW 8) estimated from tsunami data. *Geophysical Research Letters*, **25** (15), 2857-2860.

Full Text: [1998\Geo Res Let25, 2857.pdf](1998/Geo%20Res%20Let25,%202857.pdf)

Abstract: We analyze tsunami data of the great 1995 Colima-Jalisco, Mexico earthquake, recorded in Cabo San Lucas, Baja California Sur, to estimate its rupture length, L. To model the tsunami arrival time, we assume a rectangular source area, oriented parallel to the trench, whose SE limit is fixed at the point of rupture initiation. The NW limit of the source area, i.e., L, is varied between 120 and 200 km. The comparison between synthetic and observed data strongly suggests that L of the earthquake was 160+/-20 km. This length agrees with those reported in various other studies of the earthquake. It, however, disagrees with a previous study, based on the same tsunami data, which suggested that the rupture may have extended 250 km NW from the epicenter [Tanioka cmd Ruff, 1996]. The cause of this discrepancy is most likely an error in the timing of the records used by Tanioka and Ruff [1996]. We conclude that the earthquake only partially ruptured the Rivera-North America plate interface. A 120 km-long segment in the NW extreme of this interface, which apparently ruptured in 1932, remains presently unbroken.

Keywords: Rivera, Plate

? Kaverina, A., Dreger, D. and Antolik, M. (1998), Source process of the 21 April, 1997 Santa Cruz Island earthquake (M-w 7.8). *Geophysical Research Letters*, **25** (21), 4027-4030.

Full Text: [1998\Geo Res Let25, 4027.pdf](1998/Geo%20Res%20Let25,%204027.pdf)

Abstract: We apply an Empirical Green’s function method to recordings of teleseismic body waves from the April 21, 1997 Santa Cruz Island earthquake. The far-field moment rate functions reveal that rupture occured on a shallow dipping fault plane (dip 17 degrees). The main rupture consists of 6 large subevents and covers a total area of about 5000 km2 While the hypocenter is fixed at 33 km depth, the main slip is located above 20 km depth within the accretionary wedge. The source duration is about 70 sec and the average rupture velocity is found to be 1.9 km/sec. This event caused a local tsunami and although it is not possible to determine whether it was caused by tectonic faulting or submarine shaking the fact that most of the moment release occured at shallow depths is consistent with either of these possibilities, and points to the utility of the procedure outlined here in possible rapid characterization of tsunami potential.

Keywords: Tsunami Earthquake, Northridge, Waves, Zone, Arc

Fujiwara, S., Yarai, H., Ozawa, S., Tobita, M., Murakami, M., Nakagawa, H., Nitta, K., Rosen, P.A. and Werner, C.L. (1998), Surface displacement of the March 26, 1997 Kagoshima-kenhokuseibu earthquake in Japan from synthetic aperture radar interferometry. *Geophysical Research Letters*, **25** (24), 4541-4544.

Full Text: [1998\Geo Res Let25, 4541.pdf](1998/Geo%20Res%20Let25,%204541.pdf)

Abstract: A JERS 1 differential L-band synthetic aperture radar (SAR) interferogram of the March 26, 1997 Kagoshimaken-hokuseibu earthquake (Mw = 6.1) in southwestern Japan shows about 9 cm peak-to-peak coseismic surface displacement in the radar line-of-sight (LOS) direction. A permanent GPS array detected 1 to 2 cm horizontal displacements from this earthquake. By inverting the SAR and GPS data together, we estimated a fault mechanism without any seismological data. A theoretical radar LOS displacement pattern from a single fault model of the earthquake motion matches the SAR and GPS observations closely. The model assumes left lateral slip of 0.46 cm with rake angle of 19 degrees on a rectangular fault plane of dimensions 11 km (width) by 12 km (length). We demonstrate that L-band SAR interferometry can describe several cm surface displacement in detail and construct a fault model. However, despite the acquisitions being during the cold season, there are apparent water vapor signatures in the interferogram with equivalent path delays of up to 1.5 cm.

Notes: highly cited

? Mann, M.E., Bradley, R.S. and Hughes, M.K. (1999), Northern hemisphere temperatures during the past millennium: Inferences, uncertainties, and limitations. *Geophysical Research Letters*, **26** (6), 759-762.

Full Text: [1999\Geo Res Let26, 759.pdf](1999/Geo%20Res%20Let26,%20759.pdf)

Abstract: Building on recent studies, we attempt hemispheric temperature reconstructions with proxy data net works for the past millennium. We focus not just on the reconstructions, but the uncertainties therein, and important caveats. Though expanded uncertainties prevent decisive conclusions for the period prior to AD 1400, our results suggest that the latter 20th century is anomalous in the contest of at least the past millennium. The 1990s was the warmest decade, and 1998 the warmest year, at moderately high levels of confidence. The 20th century warning counters a millennial-scale cooling trend which is consistent with long-term astronomical forcing.

Keywords: Medieval Warm Period, Climate-Change, Centuries

? Ide, S. (1999), Source process of the 1997 Yamaguchi, Japan, earthquake analyzed in different frequency bands. *Geophysical Research Letters*, **26** (13), 1973-1976.

Full Text: [1999\Geo Res Let26, 1973.pdf](1999/Geo%20Res%20Let26,%201973.pdf)

Abstract: A set of source rupture models for the 1997 Yamaguchi, Japan, earthquake are constructed using an inversion analysis of strong-motion data. Synthetic Green functions and empirical Green unctions (EGF) are adopted for a low-frequency band and a high-frequency band, respectively. Slip zones in the high-frequency models correspond to the edge of the large slip zones of low-frequency models in space and to the rupture onset in time. The calculated slip-stress relations show that the stress decrease rate is more rapid in the high-frequency models and that there is little slip at a constant stress level in all the models.

? Suito, H. and Hirahara, K. (1999), Simulation of Postseismic Deformations caused by the 1896 Riku-u Earthquake, Northeast Japan: Re-evaluation of the viscosity in the upper mantle. *Geophysical Research Letters*, **26** (16), 2561-2564.

Full Text: [1999\Geo Res Let26, 2561.pdf](1999/Geo%20Res%20Let26,%202561.pdf)

Abstract: We examine the postseismic deformations which are induced by an inland earthquake at a subduction zone, and investigate especially the effect of the viscoelastic heterogeneity through Finite Element Method (FEM). We estimate the viscosity of the upper mantle beneath the northeast Japan with realistic structures based on the leveling data which includes the postseismic deformations due to the 1896 Riku-u earthquake. For this purpose, we construct two 3-D FEM models with different viscoelastic structures, namely Layered Model and Plate Model. The results show that spatial patterns of the postseismic deformations differ considerably, depending on the two viscoelastic structures. Postseismic deformations are strongly controlled by the effective thickness of the viscoelastic medium above descending plate. At the surface, if the structure is complicated, the relaxation time is outwardly longer and varies significantly with position. Considering the plate structure, the profile of surface deformation and decaying subsidence rate constrain the Maxwell lime of the upper mantle to be 5 years, which is shorter than the value of 10 years estimated by Thatcher et al. [1980] assuming the layered structures.

? Bonaccorso, A., Calvari, S., Garfi, G., Lodato, L. and Patane, D. (2003), Dynamics of the December 2002 flank failure and tsunami at Stromboli volcano inferred by volcanological and geophysical observations. *Geophysical Research Letters*, **30** (18), art. no. 1941.

Full Text: [2003\Geo Res Let30, 1941.pdf](2003/Geo%20Res%20Let30,%201941.pdf)

Abstract: [1] The 2002 effusive flank eruption at Stromboli volcano started on December 28, after several months of strong explosive activity at the summit craters. On December 30, the seismic network recorded two large flank failures and associated tsunami waves. This is the first time that a flank collapse and tsunami, and their associated phenomena, have been recorded by a multi-disciplinary monitoring system. Volcanological and geophysical monitoring, as well as thermal surveys performed immediately before and after the failure, allowed us to define and interpret the sequence of events. The still on-going eruption has provided, for the first time, the opportunity to look into the dynamics of Stromboli’s effusive eruptions, flank failure and landslide formation, and their potential hazard.

? Besana, G.M., Tanioka, Y., Ando, M., Mirabueno, M.H., Manahan, J., De Ocampo, J., Perez, J. and Bautista, B. (2004), The May 17, 1992 earthquakes in southeastern Philippines. *Geophysical Research Letters*, **31** (24), art. no. L24618.

Full Text: [2004\Geo Res Let31, L24618.pdf](2004/Geo%20Res%20Let31,%20L24618.pdf)

Abstract: [1] Two large earthquakes (Q1 and Q2) occurred off the eastern coast of Mindanao along the Philippine Trench on May 1992. During these events, the southeastern coasts of the island experienced one strong ground shaking and suffered from one set of tsunamis waves. To investigate this phenomenon, teleseismic body wave inversions and tsunami waveform analysis were undertaken for the quakes. Correlation of simulation results and field observations show that Q1 was the most probable source of the damaging tsunami wave. Results also imply that the relation between the Q1 and Q2 that may have ruptured the southern and northern portion of the one-day aftershock area, respectively. Furthermore, closer examination of the Philippine trench indicates the presence of a bend in between the events that could have prevented the Q1 to rupture in just one big event.

? Swisdak, M., Huba, J.D., Joyce, G. and Huang, C.S. (2006), Simulation study of a positive ionospheric storm phase observed at Millstone Hill. *Geophysical Research Letters*, **33** (2): Art. No. L02104.

Full Text: [2006\Geo Res Let33, L02104.pdf](2006/Geo%20Res%20Let33,%20L02104.pdf)

Abstract: Simulation results from the NRL ionospheric model SAMI2 indicate that the changes in the F-region over Millstone Hill during the geomagnetic storm beginning on 3 April 2004 are primarily due to the influence of a long-lasting eastward electric field, as was previously suggested by C. Huang et al. [2005]. A simulation of the storm day agrees well with the observational data and shows that, compared with the ionosphere of the previous quiet day, the peak electron density in the F-region (NmF2) increased by a factor of approximate to 2, the altitude of the peak density (h(m)F(2)) rose by approximate to 80 km, and the F-region electron temperature decreased by approximate to 1000 K. Further simulations in which either the neutral atmosphere and winds or the electric field were replaced by their quiet day counterparts clearly suggest that the electric field played the dominant, although not exclusive, role in producing these effects. Citation: Swisdak, M., J. D. Huba, G. Joyce, and C.-S. Huang (2006), Simulation study of a positive ionospheric storm phase observed at Millstone Hill, Geophys. Res. Lett., 33, L02104, doi:10.1029/2005GL024973.

Keywords: Altitude, Atmosphere, Density, Effects, Electron Density, Geomagnetic Storms, Model, Observational Data, Role, SAMI2, Satellite, Simulation, Storm, Temperature, Thermosphere

# Title: Geophysics

Full Journal Title: [Geophysics](http://segdl.aip.org/dbt/dbt.jsp?KEY=GPYSA7)

ISO Abbreviated Title: Geophysics

JCR Abbreviated Title: Geophysics

ISSN: 0016-8033

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

: Impact Factor

? Spies, B.R. (1991), The effectiveness of journals in exploration *Geophysics*. *Geophysics*, **56** (6), 844-858.

Full Text: [1991\Geophysics56, 844.pdf](1991/Geophysics56,%20844.pdf)

Abstract: A detailed citation analysis was conducted for fourteen major journals dealing with exploration geophysics, to judge their cost-effectiveness and impact. The analysis was for papers published in 1984, so that papers had approximately five years of visibility at the time the citation analysis was conducted. In addition, a study was performed for GEOPHYSICS for the years 1980 to 1988, to assess the influence of the length of time a paper was in the literature.

The leading journal, in terms of number of citations, was the Journal of Geophysical Research, which received an average of 17.4 citations per paper, followed by the Geophysical Journal of the Royal Astronomical Society (8.6) and GEOPHYSICS (5.4). Several journals average less than 1 citation per paper. For GEOPHYSICS, the average paper receives an extra 1.2 citations per year over the nine years studied. The percentage of nil citations decreases from 35 percent after one year, to 8 percent after 9 years. Four percent of papers receive 20 percent of all citations; these are the classic papers of exploration geophysics. Short notes, on average, receive half the number of citations as full papers. Self-citations, which account for approximately one in five citations, do not appear to significantly affect the importance or relevance of a paper.

When examined in terms of cost-effectiveness, SEG publications rate very well. GEOPHYSICS and SEG Expanded Abstracts have the lowest cost per 1000 characters of all the journals studied. In terms of the number of citations per unit cost, GEOPHYSICS is more than twice as cost-effective than its nearest neighbor, the Journal of Geophysical Research. The results also confirm those of earlier studies, that commercial journals are not as cost-effective as those published by not-for-profit professional societies.

Keywords: Citation Analysis, Physics Journals, Frequency, Science, Impact, Cost

? Peltoniemi, M. (2005), Impact factors, citations, and *Geophysics*. *Geophysics*, **70** (2), 3MA-17MA.

Full Text: [2005\Geophysics70, 3MA.pdf](2005/Geophysics70,%203MA.pdf)

Abstract: This review assesses the contributions and impact that GEOPHYSICS journal has made to both the theory and the applications of exploration geophysics during its publication life span. The contributions are evaluated first on the basis of Journal Citation Reports data, which summarize information available since 1975 about the impact factor of our journal. The impact factor for GEOPHYSICS in 1975-2002 has ranged between 1.461 and 0.591, with an average of 0.924 and with a relative ranking between 16 and 45 for all journals in its category. The journal receiving the highest impact factor for the period 2000-2003 in the “Geochemistry and Geophysics” category is Reviews of Geophysics, with an average impact factor of 7.787 and which ranged between 9.226 and 6.083. A second and important criterion is the frequency with which individual papers published in GEOPHYSICS have been cited elsewhere. This information is available for the entire publication history of GEOPHYSICS and supports the choices made for the early classic papers. These were listed in both the Silver and the Golden Anniversary issues of GEOPHYSICS. In August 2004, the five most-cited papers in GEOPHYSICS published in the time period 4.936 to February 2003 are Thomsen (1986) with 423 citations, Constable et al. (1987) with 380 citations, Cagniard (1953) with 354 citations, Sen et al. (1981) with 313 citations, and Stolt (1978) with 307 citations. Fifteen more papers exceed a threshold value of 200 citations. During 2000-2002, GEOPHYSICS, Geophysical Prospecting, Geophysical Journal International, and Journal of Applied Geophysics were the four journals with the highest number of citations of papers published in GEOPHYSICS. In the same 2000-2002 period, those journals in which papers published in GEOPHYSICS are cited most are GEOPHYSICS, Geophysical Prospecting, Geophysical Journal International, and Journal of Geophysical Research. During 1985, the total number of citations in all journals in the Science Citation Index database to papers published in GEOPHYSICS was 2657. By 2002, this same citation count for GEOPHYSICS had increased to 4784.

Keywords: Impact, Journals

? Spies, B.R. (1991), The effectiveness of journals in exploration *Geophysics*. *Geophysics*, **56** (6), 844-858.

Full Text: 1991\Geophysics56, 844.pdf

Abstract: A detailed citation analysis was conducted for fourteen major journals dealing with exploration geophysics, to judge their cost-effectiveness and impact. The analysis was for papers published in 1984, so that papers had approximately five years of visibility at the time the citation analysis was conducted. In addition, a study was performed for GEOPHYSICS for the years 1980 to 1988, to assess the influence of the length of time a paper was in the literature. The leading journal, in terms of number of citations, was the Journal of Geophysical Research, which received an average of 17.4 citations per paper, followed by the Geophysical Journal of the Royal Astronomical Society (8.6) and GEOPHYSICS (5.4). Several journals average less than 1 citation per paper. For GEOPHYSICS, the average paper receives an extra 1.2 citations per year over the nine years studied. The percentage of nil citations decreases from 35 percent after one year, to 8 percent after 9 years. Four percent of papers receive 20 percent of all citations; these are the classic papers of exploration geophysics. Short notes, on average, receive half the number of citations as full papers. Self-citations, which account for approximately one in five citations, do not appear to significantly affect the importance or relevance of a paper. When examined in terms of cost-effectiveness, SEG publications rate very well. GEOPHYSICS and SEG Expanded Abstracts have the lowest cost per 1000 characters of all the journals studied. In terms of the number of citations per unit cost, GEOPHYSICS is more than twice as cost-effective than its nearest neighbor, the Journal of Geophysical Research. The results also confirm those of earlier studies, that commercial journals are not as cost-effective as those published by not-for-profit professional societies.

Keywords: Analysis, Citation, Citation Analysis, Citations, Cost, Frequency, Impact, Journals, Physics Journals, Publications, Research, Science, Self-Citations

# Title: Geosciences Journal

Full Journal Title: Geosciences Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1226-4806

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

: Impact Factor

? Yu, J.Y., Shin, M.Y., Noh, J.H. and Seo, J.J. (2004), Adsorption of phenol and chlorophenols on Ca-montmorillonite in aqueous solutions. *Geosciences Journal*, **8** (2), 185-189.

Abstract: Adsorption of phenol, 2-chlorophenol, and 2,4-dichlorophenol on Ca-montmorillonite was studied with batch experiments at 25°C. The results from the experiments show that the amount of the adsorption of the phenolic compounds increases with chlorination, i.e., phenol < 2-chlorophenol < 2,4-dichlorophenol. This adsorption trend is due to the differences in the affinity of the phenolic compounds between the adsorbent and water, that is more affinity to water leads to less adsorption. The adsorption of phenol is unrecognizable, while 2,4-dichlorophenol is showing the highest adsorption density despite the repulsion between dissociated dichlorophenol anions and montmorillonite surface. Freundlich model fits moderately well to the adsorption isotherm of 2-chlorophenol and 2,4-dichlorophenol. The calculated model parameters are n = 1.50, 0.49 and logk(F) = 0.51, 1.09 for 2-chlorophenol and 2,4-dichlorophenol, respectively.

Keywords: Adsorption, Ca-Montmorillonite, Chlorophenol, Phenol, Organic-Compounds, Clay-Minerals, Sorption, Bentonite

? Heo, J.H., Lee, D.H., Koh, D.C. and Chang, H.W. (2007), The effect of ionic strength and hardness of trichloroethylene-contaminated synthetic groundwater on remediation using granular activated carbon. *Geosciences Journal*, **11** (3), 229-239.

Abstract: The objective of this study is to evaluate the effect of ionic strength and hardness of trichloroethylene (TCE)-contaminated synthetic groundwater on remediation using granular activated carbon (GAC). The TCE sorption rate onto GAC in synthetic groundwater was observed by batch experiments and ranged from 86.2% to 100%. As the ionic strength and hardness of the synthetic groundwater increased, the TCE sorption rates decreased. The sorption kinetics of the GAC were also analyzed by kinetic models. The Elovich model was more successfully applicable to the sorption kinetics than the Pseudo-first-order model. During the sorption, a greater amount of cations in groundwater were adsorbed than anions. The sorption capacity of GAC was affected by cations in groundwater. The GAC surface area was 958.98 m2/g and the calculated TCE and ions sorption areas were 318.38 m2/g, which comprised 33.2 % of the GAC surface area. Our experiments showed that TCE remediation was influenced by the ionic strength and hardness of groundwater. The results of these experiments were confirmed by two different models and sorption areas. Therefore, the ionic strength and hardness of groundwater must be considered in the remediation of TCE-contaminated groundwater using GAC.

Keywords: Ionic Strength, Hardness, TCE, Remediation, GAC, Volatile Organic-Compounds, Aqueous-Solutions, Simultaneous Adsorption, Surface-Chemistry, Drinking-Water, Bone Char, Removal, Sorption, Fibers, Coefficient

# Title: Geotimes

Full Journal Title: Geotimes

ISO Abbreviated Title: Geotimes

JCR Abbreviated Title:

ISSN: 0016-8556

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Geological Inst, Alexandria

Publisher Address: 4220 King St, Alexandria, Va 22302-1507

Subject categories:

Geosciences, interdisciplinary: Impact Factor 0.096, / (2000)

? (2001), Bottled water from the well. *Geotimes*, **46** (10), 29.

# Title: Geriatric Nursing

Full Journal Title: [Geriatric Nursing](http://www.sciencedirect.com/science/journal/01974572)

ISO Abbreviated Title: Geriatr. Nurs.

JCR Abbreviated Title: Geriatr Nurs

ISSN: 0197-4572

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Mosby, Inc

Publisher Address: 11830 Westline Industrial Dr, ST Louis, MO 63146-3318

Subject Categories:

Gerontology: Impact Factor 0.132, / (2001)

Nursing: Impact Factor 0.132, / (2001)

? (2003), Advice regarding the SARS outbreak. *Geriatric Nursing*, **24** (2), 73.

Full Text: 2003\Ger Nur24, 73.pdf

? Al-Zadjali, M., Keller, C., Larkey, L.K. and Albertini, L. (2010), Evaluation of intervention research in weight reduction in post menopausal women. *Geriatric Nursing*, **31** (6), 419-434.

Full Text: [2011\Ger Nur31, 419.pdf](2011/Ger%20Nur31,%20419.pdf)

Abstract: To describe the evidence that has accrued for interventions targeting weight loss in postmenopausal women, and to assess the strengths and limitations of weight loss interventions in postmenopausal women using the framework of evaluation theory, including definition of the problem and the use of theoretical framework and mediators. Electronic databases were used, including CINAHL, EBSCO Host, Google scholar, Medline, and the Science Citation Index, Expanded, in the Web of Science from 1995 to December 2009. Keyword searches included the terms obesity, obese, overweight, menopause, and weight management interventions. Searches were combined to find reports addressing 1 or more keywords. Experimental design studies that examined physical activity or dietary intervention effects on weight loss or body composition changes in postmenopausal women were selected for review. Reports of 15 intervention studies met inclusion criteria from the list of 120 generated through the database searches. Each article was evaluated for 1) effects produced as a result of the intervention, 2) the characteristics of the problem of postmenopausal obesity, 3) specification of theoretical constructs and critical inputs that guide the design of an intervention, and 4) link of the iheoretical predictors and the outcome measures selected. Four types of interventions were tested in the 15 research reports. Only 5 of the 15 used theories or models to guide the intervenions. All of the interventions resulted in some positive weight management outcome, such as lowered body mass index, fat mass, waist circumference, systolic blood pressure, glucose, and cholesterol. Overall, the reviewed research showed efficacy of varying intensities of exercise when combined with hypocaloric diet or meal replacement therapy in producing low body weight, low fat, improved insulin sensitivity, glycemic control, and cardio-respiratory fitness. The external validity of the 15 studies was limited in reporting of a clear delineation of the problem, theoretical frameworks, and application of the findings. (Geriatr Nurs 2010;31:419-434).

Keywords: Application, Blood, Blood Pressure, Blood-Pressure, Body Composition, Body Mass Index, Body Weight, Cardiorespiratory Fitness, Changes, Characteristics, Cholesterol, Clinical-Trial, Composition, Control, Criteria, Database, Databases, Design, Diet, Disease Risk-Factors, Efficacy, Evaluation, Evidence, Exercise, Fat Loss, Fitness, Framework, Glucose, Glycemic Control, Index, Insulin, Insulin Sensitivity, Intervention, Intervention Effects, Intervention Studies, Interventions, Life-Style Intervention, Management, Menopause, Models, Obese, Obese Postmenopausal Women, Obesity, Older-Adults, Outcome, Outcome Measures, Overweight, Physical, Physical Activity, Physical-Activity, Postmenopausal, Postmenopausal Women, Predictors, Pressure, Randomized Controlled-Trial, Reduction, Replacement Therapy, Reporting, Research, Review, Science Citation Index, Sensitivity, Targeting, Theory, Therapy, Validity, Waist Circumference, Web of Science, Women

# Title: Geriatrika (Madrid)

Full Journal Title: Geriatrika (Madrid)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Salom, J., Trenor, C., Climent, I., Perez De Lucia, B. and Ruiz, L. (1998), Current bibliometric study on fall fractures in elderly. *Geriatrika (Madrid)*, **14** (7), 61-64.

Abstract: The increasing interest about the falls in the elderly and their consequences, one of them is the hip fracture, obliged us to do a bibliometric study over the last 11 years, to see the incidence, interest, and evolution of the publications about this subject. In Spain, in 1991, during the 2nd european congress of Gerontology, where the IPSEN Institute organized a symposium titled “Falls in the Elderly” authors as Tinetti, M.E. (New Haven, USA), and Rubinstein, L. Z. (Los Angeles, USA) gave their first results about the fall risk factors. In the university of new mexico (USA), since 1979 its been developed the survey Aging process Study” with a longitudinal study of the aging of 304 people older than 60 years (Gary, P., Albuquerque, USA). This study encouraged professor Vellas, b. (Toulouse, france) and his colleagues to join this work. In the 2nd European congress of Gerontology the authors more interested in the prevention of the prevention of hip fractures, were Nevitt, M. (San Francisco, USA) and Perrit, H. (Saint Louis, USA). We did a search in the Medline database with the following keywords: “Fall and Hip and Fracture”, “Fall and Fracture”, “Fall and Elderly”, with the goal of doing a retrospective study of the last 11 years and to assess the subject in the literature, so as the most important authors, sites and reviews who have shown more interest about the issue. We analyze the behavior of the subject using the bibliometry laws.

# Title: Gerodontology

Full Journal Title: Gerodontology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kato, S., Nakagaki, H., Toyama, Y., Kanayama, T., Arai, M., Togari, A., Matsumoto, S., Strong, M. and Robinson, C. (1997), Fluoride profiles in the cementum and root dentine of human permanent anterior teeth extracted from adult residents in a naturally fluoridated and a non-fluoridated area. *Gerodontology*, **14** (1), 1-8.

Abstract: OBJECTIVES: To determine the effect of water fluoride concentration on the fluoride profile across the entire thickness of the cementum and root dentine of human permanent anterior teeth in adults. SUBJECTS: Twenty-eight human permanent anterior teeth from individuals aged from 30 to over 60 years were studied. SETTING: Teeth were obtained from a natural high-fluoride area (West Hartle-pool, UK; 1.0-1.3 ppm F in drinking water, WHP) and the other from a non-fluoridated naturally low fluoride area (Leeds, UK; 0.1 ppm F in drinking water, LDS). DESIGN: Cementum and root dentine were sampled using an abrasive micro-sampling technique from the cementum surface to the pulpal surface of root dentine. RESULTS: Fluoride concentration was higher in tooth roots (the cementum and dentine) taken from the naturally fluoridated area (WHP) than from the non-fluoridated area (LDS). Age and average fluoride concentration showed a positive correlation in WHP dentine, middle region of the root (r = 0.78, P < 0.001) and in the apical region of the root (r = 0.61, P < 0.05). WHP cementum had the strongest fluoride concentration correlation with age in the cervical region of the root (r = 0.67, P < 0.01). An analysis of variance (ANOVA) showed that the area (water fluoride content), age and number of years lived in the area combined with total age were significant. CONCLUSIONS: The fluoride content of cementum and root dentine in adult residents is related to fluoride content in drinking water.

# Title: Gerontologist

Full Journal Title: Gerontologist

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Clark, P.G. (1995), Quality of life, values, and teamwork in geriatric care: Do we communicate what we mean? *Gerontologist*, **35** (3), 402-411.

Abstract: Two major forces are changing the shape of health care for the frail elderly with disabling conditions: increasing emphasis on quality of life and growing reliance on an interprofessional team-based approach to care. This article outlines a conceptual framework for organizing discussions of quality of life for elderly persons with disabilities, reviews relevant empirical research, and develops a framework for understanding the different dimensions and interpretations of this concept-particularly as it is used in communication among health care providers, and between them and their elderly patients and families. New models of health care to enhance the focus on life quality and collaborative team practice are summarized. Proposed is the development of an “empowering and reflective ethic” to achieve more effective communication about quality of life in geriatric clinical practice.

Keywords: Long-Term-Care, Of-Life, Elderly Patients, Health-Status, Autonomy, Perceptions, Illness, Nurses, Age, Ethics, Clinical Practice, Communication, Health Care Teams

# Title: Gerontology

Full Journal Title: Gerontology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Diermayr, G., McIsaac, T.L. and Gordon, A.M. (2011), Finger force coordination underlying object manipulation in the elderly: A mini-review. *Gerontology*, **57** (3), 217-227.

Abstract: Background: A decline in manual dexterity is a common phenomenon in elderly individuals. Often, simple daily activities such as handling coins and preparing meals become challenging. A substantial decline in manual dexterity may impact one’s ability to live independently. Thus, understanding the underlying causes of these impairments is essential. Considerable attention has been given to the regulation of fingertip forces during object grasp, lift and transport in the elderly. Objective: Here we review studies on fingertip force coordination in the elderly, with an emphasis on the relationship between the degree of change in elderly grip force control and the nature of the tasks performed. Methods: A literature search was performed using MEDLINE, PUBMED, and Web of Science electronic databases covering studies from 1985 to 2009, inputting combinations of the following key words: grip force, grasp force, fingertip forces, precision grip, aging, elderly, and hand motor control. Results: Studies show a consistent elevation in grip force magnitudes that may easily lead to fatigue. These force increases may represent a compensation for increased skin slipperiness or a reduction in tactile information. In contrast, anticipatory grip force control (planning) remains relatively intact. Age-related changes in anticipatory control seem to emerge only during more complex tasks. Conclusion: The relationship between task complexity and degree of age-related changes suggests that results from simple, laboratory-based tasks may only partially explain impairments observed during the performance of activities of daily living, since the latter ones are typically more complex. A better understanding of impaired manual dexterity experienced by elderly individuals could be achieved by expanding experimental paradigms so that they more closely resemble the complexities encountered in functional daily tasks. Subsequently, these findings could be used in clinical settings to develop treatment approaches that consider grasp control in the context of behaviorally meaningful tasks. Copyright (C) 2010 S. Karger AG, Basel.

Keywords: Activities, Age-Related-Changes, Aging, Attention, Control, Copyright, Databases, Elderly, Fatigue, Fingertip Force, Functional, Grasp Control, Hand Function, Hand Motor Control, Impact, Information, Lead, Literature, Methods, Muscle, Normative Data, Older Adults, People, Precision Grip, Precision Grip Force, Predictive Control, Review, Science, Treatment, Upper Extremity Performance, Variability, Web of Science

# Title: Gestion Ambiental

Full Journal Title: Gestion Ambiental

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0717-4918

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rau, J. (2001), History and diagnosis of wildlife management symposiums held in Chile. *Gestion Ambiental*, (7), 79-83.

Abstract: The historical record and diagnosis of the seven symposiums about wildlife management held in southern Chile between 1976-2000 is analyzed in this paper. Most of those symposiums have been published either in scientific journals or as proceedings. By assuming an exponential model an annual growth of published papers was estimated in a 24%, but only a 9% for the oral commu n i cations. The greater participation of foreign authors (between 21-45% for papers and 33-49% for communications) was interpreted as a low interest of the national academy for this applied discipline. Nevertheless, it seems to be being replaced effectively by some state organisms of the country.

# Title: Gesundheits-Ingrnieur

(Gesundh. Ing.)

Ottemeyer, W. (1930), The use of peat and woodmeal in the purification of dyeworks sewage. *Gesundheits-Ingrnieur*, **53**, 185-188.

# Title: Gesundheitswesen

Full Journal Title: Gesundheitswesen

ISO Abbreviated Title: Gesundheitswesen

JCR Abbreviated Title: Gesundheitswesen

ISSN: 0941-3790

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Borkenhagen, A., Von Troschke, J., Stossel, U. and Brahler, E. (2003), Demands for an internationalisation of German research as illustrated by the example of the Journal “*Das Gesundheitswesen*”. A contribution to the quality assurance of applied research. *Gesundheitswesen*, **65** (2), 125-132.

Abstract: Objectives: Basing on the recent discussion on internationalisation of German research publications, the most recent volume of “Das Gesundheitswesen” was bibliometrically analysed. Methods: 125 articles were compared with respect to citing sources, the rate of self-citations, the number of times English or German journals or books were cited in the year 2001, the acceptance rate of the international state of research and of its leading representatives. These are indicators of scientific quality. Results: The interdisciplinary approach by “Das Gesundheitswesen” has proven successful in view of certain indicators of scientific quality. Conclusion: Related to scientific quality standards “Das Gesundheitswesen” has achieved a good impact in the scientific community but some details require to be changed.

Keywords: Quality Control, Bibliometrics, Impact Factor Internationalisation of German Research Publications, Public-Health Service, North-Rhine-Westphalia, Social Medicine, Environmental Medicine, Schleswig-Holstein, Psychiatric-Care, Risk Assessment, Drinking-Water, Dental-Health, Pilot Project

? Roosli, M., Rapp, R. and Braun-Fahrlander, C. (2003), Radio and microwave frequency radiation and health: An analysis of the literature. *Gesundheitswesen*, **65** (6), 378-392.

Abstract: This paper gives an overview of present scientific knowledge in health research on the effects from radio and microwave frequency radiation, at levels to which the general population is typically exposed. The review is based on human experimental and epidemiological studies investigating the effects of radiation in the frequency range between 100 kHz and 10 GHz. The relevant studies were identified via systematic searches of the databases MEDLINE and ISI Web of Science. The review concludes that the existing scientific knowledge base is too limited to draw final conclusions on the health risk from exposure in the low-dose range. Only few studies have investigated the effect of long-term exposure on the general population in the normal environment. Accordingly, little can be predicted regarding long-term health risks. Various studies observed an increased risk for tumours in the hematopoietic and lymphatic tissue of people living in the proximity of TV and radio broadcast transmitters. However, methodological limitations to these studies have been identified and their findings are controversial. In studies of a possible association between brain tumours and mobile phone use, the average period mobile phones use was short compared to the known latency period of brain tumours. Although these studies did not establish an overall increased risk of brain tumours associated with mobile phone use, there were some indications of an association. Immediate effects associated with mobile phone use have been observed in human experimental studies that cannot be explained by conventional thermal mechanisms. The observed effects are within the normal physiological range and are therefore hard to interpret with respect to an increased risk to health. However, it can be concluded that mechanisms other than the established thermal mechanisms exist. Because of the present fragmentary scientific database, a precautionary approach when dealing with radio and microwave frequency radiation is recommended for the individual and the general population.

Keywords: Affects Human Sleep, Analysis, Brain, Cancer Incidence, Cellular Telephone Users, Databases, Environment, Frequency, Great-Britain, Health Risks, High-Power Transmitters, Human, Human Brain Activity, Isi, Knowledge, Literature, Mobile Phone Radiation, Mobile Phone Use, Non Ionising Radiation, Normal, Overview, Radio and Microwave Frequency Radiation, Radiofrequency Electromagnetic-Fields, Research, Review, Risk, Science, Sutton Coldfield Transmitter, Symptoms of Ill Health, Systematic, Television Transmitters, Tumours, Web of Science

? Roick, C., Angermeyer, M.C. and Riedel-Heller, S. (2005), The importance of the topic prevention in social-psychiatric research. A systematic literature analysis. *Gesundheitswesen*, **67** (12), 879-886.

Abstract: Aim of the study: Scientists and politicians currently pin great hopes on preventive activities in order to increase the health of particular target populations and to reduce illness related costs. This also holds true for mental disorders, which often show a chronic course of disease. The aim of the present study is to analyse the importance of prevention in social-psychiatric research. Methods: Including 60 journals, listed in the Science Citation Index or the Social Science Citation Index for the psychosocial field, a systematic literature analysis was done for the year 2004. Results: Only 14 percent of social-psychiatric original research paid attention to prevention. 39 percent of the prevention related publications refer to primary prevention, further 39 percent to secondary prevention, 22 percent focused on tertiary prevention. Research activities concentrated on prevention of substance related disorders as well as early detection or rehabilitation of schizophrenia. Conclusions: Social psychiatry has only partly responded to the growing importance of prevention in health care. Because many social-psychiatric questions are important for prevention research, social psychiatry should use their competences to facilitate prevention-studies. This holds particularly true for depressive disorders and dementia, which are conditions with high prevalence and substantial illness related costs.

Keywords: 5 European Countries, Affective-Disorders, Citation, Inpatient Treatment, Journals, Literature, Literature Analysis, Mentally-Ill People, Outpatient Treatment, Prevention, Prevention Research, Public-Attitudes, Publications, Quality-of-Life, Representative Population Survey, Research, Schizophrenic-Patients, Social Psychiatry, Union Member States

? Lehmann, S., Domdey, A. and Bramesfeld, A. (2010), Telephone case management: is it beneficial for the care of depression patients in Germany? A systematic literature survey. *Gesundheitswesen*, **72** (5), E33-E37.

Abstract: Background: Strategies are needed to effectively improve the management of depression in Germany. Can telephone case management (TCM) be a promising strategy to improve depression care in the German health-care system? Methods: A systematic literature review in PUBMED, Cochrane Library, ISI Web of Science, PsycINFO and PSYNEXplus for randomised controlled trials (RCT) that evaluate TCM was carried out. Results: Ten RCTs that compared TCM to treatment as usual were found. TCM was more effective in reducing depressive symptoms and in increasing satisfaction with care than treatment as usual. Whether TCM was capable of significantly improving pharmacotherapy compliance remained controversial. Discussion: The effectiveness of TCM seemed to be related to the health-care system structure in which it was implemented. Most studies on TCM were conducted in US-American Health Maintenance Organizations. Thus, it is unclear to what extent these results can be transferred to the German health system. However, in the light of the promising results of these studies it seems to be worthwhile to test TCM also under conditions of the German health-care system.

Keywords: Care, Cochrane, Compliance, Depression, Direct Costs, Effectiveness, Germany, Health, Health Care, Health Services Research, Health-Insurance Data, ISI, Literature, Literature Review, Management, Mental-Disorders, Methods, Pharmacotherapy, Population, Program, Psychotherapy, Pubmed, Randomized Controlled-Trial, Review, Science, Starting Antidepressant Treatment, Strategy, Symptoms, Systematic, Systematic Literature Review, Telephone Case Management, Treatment, Web of Science

# Title: The Ghana Engineer

Full Journal Title: The Ghana Engineer

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lartey, R.B. and Acquah, F. (1999), Developing national capability for manufacture of activated carbon from agricultural wastes. *The Ghana Engineer*, **19** (1), 1-2.

# Title: Gifted Child Quarterly

Full Journal Title: Gifted Child Quarterly

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Carter, K.R. and Swanson, H.L. (1990), An analysis of the most frequently cited gifted journal articles since the Marland report - Implications for researchers. *Gifted Child Quarterly*, **34** (3), 116-123.

Full Text: [1990\Gif Chi Qua34, 116.pdf](1990/Gif%20Chi%20Qua34,%20116.pdf)

Keywords: Articles, Journal, Researchers

# Title: Giornale di Gerontologia

Full Journal Title: Giornale di Gerontologia

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0017-0305

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Gherardi, E. (1981), The status of the Italian research in the field of the biology of aging from 1976 to 1980 - A bibliometric evaluation. *Giornale di Gerontologia*, **29** (10), 757-768.

? Salvioli, G.F. and Salati, R. (1981), Bibliometric analysis of the clinical research in gerontology and geriatrics. *Giornale di Gerontologia*, **29** (10), 769-773.

? Fabris, N. (1981), Bibliometric analysis of studies on immunology and aging during the period 1976-1980. *Giornale di Gerontologia*, **29**, 775-776.

# Title: GL6: Work on Grey in Progress, Conference Proceedings

Full Journal Title: GL6: Work on Grey in Progress, Conference Proceedings

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Di Cesare, R., Ruggieri, R., Giannini, S. and Biagioni, S. (2005), Trend evaluation and comparison of the use and value of GL in core demography and computer science journals. *GL6: Work on Grey in Progress, Conference Proceedings*, 41-49.

Abstract: Over the last ten years the impact of grey literature on conventional literature has frequently been studied. Studies have made use of bibliometric instruments used for citation analysis. Recently, this research has magnified attention on the impact of new forms of GL that have emerged along with the spread of Internet. This work aims to a) measure the impact of GL on two different scientific fields; b) describe the characteristics of GL documents cited; c) ascertain any changes in LG impact due to use of the www. Two years (1995 and 2003) were chosen as illustrative of the situation before and after the growth in the use of the www. With these aims, bibliographic references have been analysed in publications in two scientific fields for which it is logical to hypothesise a different impact. The publications are three journals of computer sciences included in the Journal Citation Report (JCR) Science Ed., and three journals of demography included in Journal Citation Report (JCR) - Social Science Ed.. The three journals in each of the two categories were chosen on the basis of their stability during the observation period (1995 and 2003) in terms both of their Impact Factor (IF) high, medium and low - and of their ranks.

Keywords: Analysis, Bibliometric, Changes, Characteristics, Citation, Citation Analysis, Comparison, Conventional, Demography, Evaluation, Growth, Impact, Internet, Journals, Literature, Observation, Publications, Research, Science, Science Journals, Sciences, Stability, Value, Work

# Title: Glass Technology

Full Journal Title: Glass Technology

ISO Abbreviated Title: Glass Technol.

JCR Abbreviated Title: Glass Technol

ISSN: 0017-1271

Issues/Year: 6

Journal Country/Territory: England

Language: English

Publisher: Soc Glass Technology

Publisher Address: Thornton 20 Hallam Gate Road, Sheffield, S Yorkshire, England S10 5BT

Subject Categories:

Materials Science, Ceramics: Impact Factor

? Green, R. (1990), Reliable continuous emission monitoring systems for legal stack emission surveillance. *Glass Technology*, **31** (2), 41-44.

# Title: Global Biogeochemical Cycles

Full Journal Title: Global Biogeochemical Cycles

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Schimel, D.S., Braswell, B.H., Holland, E.A., Mckeown, R., Ojima, D.S., Painter, T.H., Parton, W.J. and Townsend, A.R. (1994), Climatic, Edaphic, and biotic controls over storage and turnover of carbon in soils. *Global Biogeochemical Cycles*, **8** (3), 279-293.

Full Text: 1994\Glo Bio Cyc8, 279.pdf

Abstract: Soil carbon, a major component of the global carbon inventory, has significant potential for change with changing climate and human land use. We applied the Century ecosystem model to a series of forest and grassland sites distributed globally to examine large-scale controls over soil carbon. Key site-specific parameters influencing soil carbon dynamics are soil texture and foliar lignin content; accordingly, we perturbed these variables at each site to establish a range of carbon concentrations and turnover times. We examined the simulated soil carbon stores, turnover times, and C:N ratios for correlations with patterns of independent variables. Results showed that soil carbon is related linearly to soil texture, increasing as clay content increases, that soil carbon stores and turnover time are related to mean annual temperature by negative exponential functions, and that heterotrophic respiration originates from recent detritus (similar to 50%), microbial turnover (similar to 30%), and soil organic matter (similar to 20%) with modest variations between forest and grassland ecosystems. The effect of changing temperature on soil organic carbon (SOC) estimated by Century is dSOC/dT = 183e(-0.034T). Global extrapolation of this relationship leads to an estimated sensitivity of soil C storage to a temperature of -11.1 Pg degrees C-1, excluding extreme arid and organic soils. In Century, net primary production (NPP) and soil carbon are closely coupled through the N cycle, so that as temperatures increase, accelerated N release first results in fertilization responses, increasing C inputs. The Century-predicted effect of temperature on carbon storage is modified by as much as 100% by the N cycle feedback. Century-estimated soil C sensitivity (-11.1 Pg degrees C-1) is similar to losses predicted with a simple data-based calculation (-14.1 Pg degrees C-1). Inclusion of the N cycle is important for even first order predictions of terrestrial carbon balance. If the NPP-SOC feedback is disrupted by land use or other disturbances, then SOC sensitivity can greatly exceed that estimated in our simulations. Century results further suggest that if climate change results in drying of organic soils (peats), soil carbon loss rates can be high.

Keywords: Organic-Matter Dynamics, Shortgrass Steppe, CO2, Forest, Models, Fertilization, Cultivation, Succession, Ecosystems, Atmosphere

Notes: highly cited

? Hein, R., Crutzen, P.J. and Heimann, M. (1997), An inverse modeling approach to investigate the global atmospheric methane cycle. *Global Biogeochemical Cycles*, **11** (1), 43-76.

Full Text: [1997\Glo Bio Cyc11, 43.pdf](1997/Glo%20Bio%20Cyc11,%2043.pdf)

Abstract: Estimates of the global magnitude of atmospheric methane sources are currently mainly based on direct flux measurements in source regions. Their extrapolation to the entire globe often involves large uncertainties. In this paper, we present an inverse modeling approach which can be used to deduce information on methane sources and sinks from the temporal and spatial variations of atmospheric methane mixing ratios. Our approach is based on a three-dimensional atmospheric transport model which, combined with a tropospheric background chemistry module, is also employed to calculate the global distribution of OH radicals which provide the main sink for atmospheric methane. The global mean concentration of OH radicals is validated with methyl chloroform (CH3CCl3) observations. The inverse modeling method optimizes the agreement between model-calculated and observed methane mixing ratios by adjusting the magnitudes of the various methane sources and sinks. The adjustment is constrained by specified a priori estimates and uncertainties of the source and sink magnitudes. We also include data on the C-13/C-12 isotope ratio of atmospheric methane and its sources in the model. Focusing on the 1980s, two scenarios of global methane sources are constructed which reproduce the main features seen in the National Oceanic and Atmospheric Administration’s Climate Monitoring and Diagnostics Laboratory (NOAA/CMDL) methane observations. Differences between these two scenarios may probably be attributed to underestimated a priori uncertainties of wetland emissions. Applying the inverse model, the average uncertainty of methane source magnitudes could be reduced by at least one third. We also examined the decrease in the atmospheric methane growth rate during the early 1990s but could not uniquely associate it with changes in particular sources.

Keywords: 1,1,1-Trichloroethane Methyl Chloroform, General-Circulation Model, Lightning Distributions, Nitrogen-Oxides, Growth-Rate, Emissions, Surface, Carbon, Parameterization, Troposphere

# Title: Global Change Biology

Full Journal Title: Global Change Biology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Cramer, W., Bondeau, A., Woodward, F.I., Prentice, I.C., Betts, R.A., Brovkin, V., Cox, P.M., Fisher, V., Foley, J.A., Friend, A.D., Kucharik, C., Lomas, M.R., Ramankutty, N., Sitch, S., Smith, B., White, A. and Young-Molling, C. (2001), Global response of terrestrial ecosystem structure and function to CO2 and climate change: Results from six dynamic global vegetation models. *Global Change Biology*, **7** (4), 357-373.

Full Text: [1994\Glo Bio Cyc7, 357.pdf](1994/Glo%20Bio%20Cyc7,%20357.pdf)

Abstract: The possible responses of ecosystem processes to rising atmospheric CO2 concentration and climate change are illustrated using six dynamic global vegetation models that explicitly represent the interactions of ecosystem carbon and water exchanges with vegetation dynamics. The models are driven by the IPCC IS92a scenario of rising CO2 (Wigley et al. 1991), and by climate changes resulting from effective CO2 concentrations corresponding to IS92a, simulated by the coupled ocean atmosphere model HadCM2-SUL. Simulations with changing CO2 alone show a widely distributed terrestrial carbon sink of 1.4-3.8 Pg C y(-1) during the 1990s, rising to 3.7-8.6 Pg C y(-1) a century later. Simulations including climate change show a reduced sink both today (0.6-3.0 Pg C y(-1)) and a century later (0.3-6.6 Pg C y(-1)) as a result of the impacts of climate change on NEP of tropical and southern hemisphere ecosystems. In all models, the rate of increase of NEP begins to level off around 2030 as a consequence of the ‘diminishing return’ of physiological CO2 effects at high CO2 concentrations. Four out of the six models show a further, climate-induced decline in NEP resulting from increased heterotrophic respiration and declining tropical NPP after 2050. Changes in vegetation structure influence the magnitude and spatial pattern of the carbon sink and, in combination with changing climate, also freshwater availability (runoff). It is shown that these changes, once set in motion, would continue to evolve for at least a century even if atmospheric CO2 concentration and climate could be instantaneously stabilized. The results should be considered illustrative in the sense that the choice of CO2 concentration scenario was arbitrary and only one climate model scenario was used. However, the results serve to indicate a range of possible biospheric responses to CO2 and climate change. They reveal major uncertainties about the response of NEP to climate change resulting, primarily, from differences in the way that modelled global NPP responds to a changing climate. The simulations illustrate, however, that the magnitude of possible biospheric influences on the carbon balance requires that this factor is taken into account for future scenarios of atmospheric CO2 and climate change.

Keywords: Dynamic Global Vegetation Model, Global Carbon Cycle, Atmospheric CO2, Stomatal Conductance, Biosphere Model, Carbon-Dioxide, Canopy Reflectance, Forest Ecosystems, Plant Migration, Boundary-Layer, Photosynthesis, Transpiration

# Title: Global Ecology and Biogeography

Full Journal Title: Global Ecology and Biogeography

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Decaens, T. (2010), Macroecological patterns in soil communities. *Global Ecology and Biogeography*, **19** (3), 287-302.

Full Text: [2010\Glo Eco Bio19, 287.pdf](2010/Glo%20Eco%20Bio19,%20287.pdf)

Abstract: Aim To review published evidence regarding the factors that influence the geographic variation in diversity of soil organisms at different spatial scales. Location Global. Methods A search of the relevant literature was conducted using the Web of Science and the author’s personal scientific database as the major sources. Special attention was paid to include seminal studies, highly cited papers and/or studies highlighting novel results. Results Despite their significant contribution to global biodiversity, our taxonomic knowledge of soil biota is still poor compared with that of most above-ground organisms. This is particularly evident for small-bodied taxa. Global patterns of soil biodiversity distribution have been poorly documented and are thought to differ significantly from what is reported above-ground. Based on existing data, it appears that microorganisms do not respond to large-scale environmental gradients in the same way as metazoans. Whereas soil microflora seem to be mainly represented by cosmopolitan species, soil animals respond to altitudinal, latitudinal or area gradients in the same way as described for above-ground organisms. At local scales, there is less evidence that local factors regulate above- and below-ground communities in the same way. Except for a few taxa, the humpbacked response to stress and disturbance gradients doesn’t seem to apply underground. Soil communities thus appear weakly structured by competition, although competitive constraints may account for assembly rules within specific taxa. The main factor constraining local soil biodiversity is the compact and heterogeneous nature of soils, which provides unrivalled potential for niche partitioning, thus allowing high levels of local biodiversity. This heterogeneity is increased by the impact of ecosystem engineers that generate resource patchiness at a range of spatio-temporal scales.

Keywords: Agricultural Intensification, Attention, Biodiversity, Biodiversity Driving Factors, Biodiversity Patterns, Collembolan Communities, Contribution, Earthworm Species Assemblages, Environmental, Forest Fragmentation, Functional Diversity, Habitat Fragmentation, Highly-Cited, Impact, Knowledge, Literature, Macrofaunal Communities, Methods, Microorganisms, Papers, Review, Science, Secondary Succession, Soil Biodiversity, Soil Fauna, Soil Microbial Communities, Spatiotemporal Distribution, Stress, Upper Normandy, Web of Science

? Robinson, L.M., Elith, J., Hobday, A.J., Pearson, R.G., Kendall, B.E., Possingham, H.P. and Richardson, A.J. (2011), Pushing the limits in marine species distribution modelling: Lessons from the land present challenges and opportunities. *Global Ecology and Biogeography*, **20** (6), 789-802.

Full Text: [2011\Glo Eco Bio20, 789.pdf](2011/Glo%20Eco%20Bio20,%20789.pdf)

Abstract: Aim Species distribution models (SDMs) have been used to address a wide range of theoretical and applied questions in the terrestrial realm, but marine-based applications remain relatively scarce. In this review, we consider how conceptual and practical issues associated with terrestrial SDMs apply to a range of marine organisms and highlight the challenges relevant to improving marine SDMs. Location We include studies from both marine and terrestrial systems that encompass many geographic locations around the globe. Methods We first performed a literature search and analysis of marine and terrestrial SDMs in ISI Web of Science to assess trends and applications. Using knowledge from terrestrial applications, we critically evaluate the application of SDMs in marine systems in the context of ecological factors (dispersal, species interactions, aggregation and ontogenetic shifts) and practical considerations (data quality, alternative modelling approaches and model validation) that facilitate or create difficulties for model application. Results The relative importance of ecological factors to be considered when applying SDMs varies among terrestrial and marine organisms. Correctly incorporating dispersal is frequently considered an important issue for terrestrial models, but because there is greater potential for dispersal in the ocean, it is often less of a concern in marine SDMs. By contrast, ontogenetic shifts and feeding have received little attention in terrestrial SDM applications, but these factors are important to many marine SDMs. Opportunities also exist for applying more advanced SDM approaches in the marine realm, including mechanistic ecophysiological models, where water balance and heat transfer equations are simpler for some marine organisms relative to their terrestrial counterparts. Main conclusions SDMs have generally been under-utilized in the marine realm relative to terrestrial applications. Correlative SDM methods should be tested on a range of marine organisms, and we suggest further development of methods that address ontogenetic shifts and feeding interactions. We anticipate developments in, and cross-fertilization between, coupled correlative and process-based SDMs, mechanistic eco-physiological SDMs, and spatial population dynamic models for climate change and species invasion applications in particular. Comparisons of the outputs of different model types will provide insight that is useful for improved spatial management of marine species.

Keywords: Aggregation, Analysis, Attention, Balance, Bioclimatic Envelope Model, Biotic Interactions, Climate Change, Climate-Change, Competition, Coral-Reef Fish, Development, Dispersal, Ecological Niche Modelling, Ecological Theory, Feeding, Habitat Models, Improve Prediction, Insight, ISI, ISI Web of Science, Knowledge, Literature, Long-Distance Dispersal, Management, Marine, Terrestrial Systems, Methods, Model, Modelling, Ontogenetic Shifts, Prey, Pseudo-Absence Data, Resource Selection Functions, Review, Science, Spatial-Distribution, Species Distribution Model, Trends, Validation, Water, Web of Science

# Title: Global Environmental Change

Full Journal Title: [Global Environmental Change](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6020&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=73f3cac9f2f4cb1456b8d74a58f36bee)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

# Title: Global Environmental Change-Human and Policy Dimensions

Full Journal Title: [Global Environmental Change](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6020&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=73f3cac9f2f4cb1456b8d74a58f36bee)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Janssen, M.A., Schoon, M.L., Ke, W.M. and Borner, K. (2006), Scholarly networks on resilience, vulnerability and adaptation within the human dimensions of global environmental change. *Global Environmental Change-Human and Policy Dimensions*, **16** (3), 240-252.

Full Text: [2006\Glo Env Cha16, 240.pdf](2006/Glo%20Env%20Cha16,%20240.pdf)

Abstract: This paper presents the results of a bibliometric analysis of the knowledge domains resilience, vulnerability and adaptation within the research activities on human dimensions of global environmental change. We analyzed how 2286 publications between 1967 and 2005 are related in terms of co-authorship relations, and citation relations.

The number of publications in the three knowledge domains increased rapidly between 1995 and 2005. However, the resilience knowledge domain is only weakly connected with the other two domains in terms of co-authorships and citations. The resilience knowledge domain has a background in ecology and mathematics with a focus on theoretical models, while the vulnerability and adaptation knowledge domains have a background in geography and natural hazards research with a focus on case studies and climate change research. There is an increasing number of cross citations and papers classified in multiple knowledge domains. This seems to indicate an increasing integration of the different knowledge domains.

Keywords: Adaptation, Agriculture, Analysis, Bibliometric, Bibliometric Analysis, Citations, Climate, Climate Change, Climate-Change, Co-Authorship, Co-Authorship Networks, Ecological Resilience, Ecology, Ecosystems, Environmental, Environmental Change, Geography, Global, Human, Integration, Knowledge, Knowledge Domains, Knowledge Domains, Management, Models, Natural, Paper, Publications, Research, Resilience, Scale, Social Vulnerability, Thresholds, Variability, Vulnerability

# Title: Global Journal of Library and Information Sciences

Full Journal Title: Global Journal of Library and Information Sciences

ISO Abbreviated Title:

JCR Abbreviated Title:

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Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

# Title: Global Nest: the International Journal

Full Journal Title: [Global Nest: The International Journal](http://www.gnest.org/Journal/journal.htm)

ISO Abbreviated Title: Global Nest: the Int. J.

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Nikolaou, A.D., Kostopoulou, M.N. and Lekkas, T.D. (1999), Organic by-products of drinking water chlorination. *Global Nest: the International Journal*, **1** (3), 143-156.

Full Text: [G\Glo Nes Int J1, 143.pdf](G/Glo%20Nes%20Int%20J1,%20143.pdf)

Abstract: Chlorination of drinking water leads to the formation of a variety of Disinfection By-Products (DBPs) that may have adverse health effects on humans. Research on this subject has been continued and new epidemiological and toxicological studies have been conducted. This review summarizes factors affecting DBP formation and predictive equations proposed for it, physical and chemical properties, environmental fate, actual measurements of these compounds and technologies for controlling them, as well as regulation and currently proposed changes of their Maximum Contaminant Levels (MCLs) after evaluation by EPA of new data available.

Keywords: Disinfection By-Products, Chlorination, Trihalomethanes, Haloacetic Acids

Alam, J.B., Dikshit, A.K. and Bandyopadhyay, M. (2000), Efficacy of adsorbents for 2,4-D and atrazine removal from water environment. *Global Nest: the International Journal*, **2** (2), 139-148.

Full Text: [G\Glo Nes Int J2, 139.pdf](G/Glo%20Nes%20Int%20J2,%20139.pdf)

Abstract: The efficacy of low cost adsorbing materials for removal of 2,4-d (2,4 dichloro phenoxy acetic acid) and atrazine (2-chloro-4-ethyamino-6-isopropylamino-1,3,5 triazine) herbicides from drinking water was evaluated. Five low cost adsorbents, viz. wood charcoal, rubber granules, bottom ash, macro fungi sajor caju and florida were tested. The above materials were selected from organic, inorganic and biological sources. For the selection of the suitable adsorbent for 2,4-D and atrazine uptake, the maximum adsorption capacity (Qmax) was chosen as the main parameter. Using linearized forms of equilibrium models like Langmuir, Brunauer, Emmett and Teller (BET), Freundlich and Lopez-Gonzalez models (L-G models), the maximum adsorptive capacities were determined. Wood charcoal showed the best adsorptive capacity with Qmax of 0.70 mg g-1 for 2,4-D and 0.80 mg g-1 for atrazine followed by 0.40 mg g-1 for 2,4-D and 0.47 mg g-1 for atrazine by rubber granules. Bottom ash, sajor caju and florida gave poor performance.

Keywords: Maximum Adsorption Capacity, Langmuir, Freundlich, BET, L-G Models, Herbicides

Albanis, T., Hela, D., Sakellarides, T. and Danis, T. (2000), Removal of dyes from aqueous solutions by adsorption on mixtures of fly ash and soil in batch and column techniques. *Global Nest: the International Journal*, **2** (3), 237-244.

Full Text: [G\Glo Nes Int J2, 237.pdf](G/Glo%20Nes%20Int%20J2,%20237.pdf)

Abstract: Adsorption and removal of commercial dyes were studied in aqueous suspensions of fly ash mixtures with a sandy clay loam soil of low organic matter content. The commercial dyes, acid orange 7, acid yellow 23, disperse blue 79, basic yellow 28 and direct yellow 28 represent the widely used nitroazo structures. Batch and column experiments were carried out at equilibrium conditions for concentrations of dyes between 5 and 60 mg l-1. The logarithmic form of Freundlich equation gave a high linearity and the k constants are increasing with the increase of fly ash content in adsorbent mixtures and the affinity between the adsorbent surface and adsorbed solute. The mean removed amounts of dyes by adsorption batch experiments in soil mixture with 20% fly ash content were up to 53.0% for acid yellow 7, 44.9% for acid yellow 23, 99.2% for direct yellow 28, 96.8% for basic yellow 28 and 88.5% for disperse blue 79. The removal of dyes from column experiments decrease with the increase of the solution concentration form 10 to 50 mg l-1 at 20 °C, showing the process to be highly dependent on the concentration of the solution. The mean removed amounts of dyes by adsorption on columns of soil mixture with 20% fly ash content and for initial concentration of dye solutions 50 mg l-1 were up to 33.8% for acid yellow 7, 59.4% for acid yellow 23, 84.2% for direct yellow 28, 98.2% for basic yellow 28 and 60.3% for disperse blue 79.

Keywords: Azo Dyes, Fly Ash, Soil, Adsorption, Removal, Batch, Column Techniques

Koumenides, K., Sakkas, N., Lekkas, D.F. and Xylourgidis, N. (2001), Using gac to control thms in drinking water: An experimental study at the athens water works and an economic evaluation of the method. *Global Nest: the International Journal*, **3** (3), 189-197.

Full Text: [G\Glo Nes Int J3, 189.pdf](G/Glo%20Nes%20Int%20J3,%20189.pdf)

Abstract: An experimental study has been carried out in an attempt to verify the efficiency of GAC (granular activated carbon) in removing THMs (trihalomethanes), and in particular CHCl3, CHCl2Br, CHClBr2 and CHBr3 from drinking water. The experiments have been conducted at a pilot scale filtering plant that was set up for the purpose, at the Athens Water Authority, at Galatsi. This paper reports on the experimental procedure, the sampling technique, the analytical method used, the overall efficiency of the approach and finally also draws some first conclusions as to the economic justification of the method, in order to provide some insight on the additional costs of a possible fullscale use of the method.

Keywords: Water Filtration; Drinking Water Quality; Chlorination By-Products

Voudrias, E., Fytianos, K. and Bozani, E. (2002), Sorption-desorption isotherms of dyes from aqueous solutions and watewaters with different sorbent materials. *Global Nest: the International Journal*, **4** (1), 75-83.

Full Text: [G\Glo Nes Int J4, 75.pdf](G/Glo%20Nes%20Int%20J4,%2075.pdf)

Abstract: The ability of activated carbon and different low-cost by-products and waste material as sorbents to remove various reactive dyes from aqueous solutions and wastewaters was investigated. All aqueous dye solutions contained 2,000 mg l-1 NaCl, to mimic real dye wastewater. Batch kinetic and isotherm experiments were conducted to determine the sorption-desorption behavior of the examined dyes from aqueous solutions and wastewaters by different sorbents, including activated carbon, fly ash, bentonite and bleaching earth. The results from the aqueous solutions indicate that the form of the isotherm equation is not necessarily unique for best description of both sorption and desorption data. The values of the isotherm parameters are not the same, indicating a significant hysteresis effect. Of the 9 sorption systems tested, 5 are best described by the Freundlich, 3 by the Langmuir and 1 by the linear sorption model. Of the 7 desorption systems tested, 5 are best described by the Freundlich and 2 by the linear model. In all cases, the sorption capacity for dye removal was higher for activated carbon, followed by fly-ash and then by bentonite.

Keywords: Color Removal, Sorption, Desorption, Dye Wastewater, Sorbents

# Title: Global Nest Journal

Full Journal Title: [Global Nest Journal](http://www.gnest.org/Journal/journal.htm)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Vazquez, G., Gonzalez-Alvarez, J., Freire, M.S., Calvo, M. and Antorrena, G. (2009), Determination of the optimal conditions for the adsorption of cadmium ions and phenol on chestnut (*Castanea sativa*) shell. *Global Nest Journal*, **11** (2), 196-204.

Full Text: [2009\Glo Nes J11, 196.pdf](2009/Glo%20Nes%20J11,%20196.pdf)

Abstract: Adsorption of cadmium ions and phenol from aqueous solutions on chestnut (Castanea sativa) shell was studied. An incomplete 3 3 factorial design was applied to investigate the influence of the initial cadmium ions (20-60-100 mg l-1) or phenol concentration (0.01-0.255-0.5 g l-1), temperature (10-25-40°C for cadmium and 10-35-60ºC for phenol) and pH (5.5-7.0-8.5 for Cd2+ ions and 2.5-6.0-9.5 for phenol) on the amount of contaminant adsorbed and on the adsorption percentage. Statistical analysis of the results showed the significance of the individual factors and their interactions on both adsorption processes. The best conditions for high cadmium ions and phenol removal within the experimental ranges of the variables studied were the natural pH (around 5.5) and a temperature of 25ºC for cadmium ions and 60ºC for phenol. Under these conditions, adsorption equilibrium was modelled by the Freundlich isotherm for cadmium ions and by the Langmuir isotherm for phenol.

Keywords: Adsorption, Adsorption Equilibrium, Agricultural Waste Biomass, Analysis, Aqueous Solutions, Aqueous-Solution, Biosorption, Cadmium, Cadmium Ions, Cd2+, Chestnut Shell, Concentration, Contaminant, Design, Equilibrium, Experimental, Experimental Statistical Design, Freundlich, Freundlich Isotherm, Heavy-Metals, Ions, Isotherm, Langmuir, Langmuir Isotherm, Natural, Pb(II), pH, Phenol, Phenol Removal, *Pinus-pinaster* Bark, Removal, Removal, Si, Significance, Solutions, Sorption, Temperature

? Chojnacka, K. and Michalak, I. (2009), Using wood and bone ash to remove metal ions from solutions. *Global Nest Journal*, **11** (2), 205-217.

Full Text: [2009\Glo Nes J11, 205.pdf](2009/Glo%20Nes%20J11,%20205.pdf)

Abstract: In the present work, wood and bone ash were used to remove metal cations from solutions. Cation-removal capacity of the ashes was analyzed by potentiometric titration. It was found that the capacity of wood ash was two times higher (37.3 meq g-1) than bone ash (15.2 meq g-1). Kinetics of metal ions removal by both ashes was described with pseudo-second order equation and Langmuir model was employed to describe equilibrium of the process. Wood ash had better removal properties than bone ash - at the same experimental conditions biosorption capacity at equilibrium for wood ash was 2 times higher (244 mg g-1) than for bone ash (123 mg g-1). Promising results were also obtained for wood ash, which was capable of removing 67.9 % of Zn(II) ions, 70.4 % of Cd(II) ions, 92.8 % of Cu(II) ions and 99.1 % of Cr(III) ions from model solution of wastewater from metallurgical industry and 84.5 % of Cr(III) ions from the post-biosorption solution from the production process of biological feed additives. The utilization of ashes of biological origin was found to be a promising alternative to conventional processes of wastewater treatment.

Keywords: Adsorption, Alternative, Aqueous-Solution, Biological, Biomass, Biosorption, Bone, Capacity, Cd(II), Cd(II) Ions, Conventional, Cr(III), Cr(III) Ions, Cu(II), Cu(II) Ions, Equilibrium, Equilibrium, Experimental, Feed, Fly-Ash, Heavy-Metals, Ions, Kinetics, Langmuir, Langmuir Model, Metal, Metal Ions, Metal Ions Removal, Model, Ni(II) Ions, Origin, Potentiometric Titration, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Removal of Toxic Metal Ions, Si, Solution, Solutions, Sorption, Spent Animal Bones, Treatment, Utilization, Wastewater, Wastewater Treatment, Wood, Wood and Bone Ash, Wood Ash, Work, Zn(II), Zn(II) Ions

? Dhodapkar, R., Borde, P. and Nandy, T. (2009), Super absorbent polymers in environmental remediation. *Global Nest Journal*, **11** (2), 223-234.

Full Text: [2009\Glo Nes J11, 223.pdf](2009/Glo%20Nes%20J11,%20223.pdf)

Abstract: Laboratory studies reported earlier, have shown very promising results in the selective removal of dyes from aqueous solutions by a commercially available (super absorbent polymer) SAP, Jalshakti (R) (JS). JS is mesoporous in nature and is a potential adsorbent for the basic dyes studied. This paper presents the adsorption and kinetic studies for the Methylene blue dye (MB) in a batch mode. The equilibrium adsorption capacity increases from 138.9 to 1428.6 mgg-1 as the initial concentration of MB increases from 100-1000 mg l-1. The maximum adsorption capacity obtained is 1200 mgg-1 which is more than the adsorbents reported in literature. The K-f value is 165.3 mg(1-(1/n))g-1L(1/n). The slope 1/n, ranging between 0 and 1, is indicative of the relative energy distribution on the adsorbent surface (or surface heterogeneity) The kinetics of the adsorption process suggests that the pseudo second order model is predominant. The pore diffusion kinetics as described by intraparticle diffusion model also controls the adsorption process but is not the only rate limiting mechanism.

Keywords: Absorbent, Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Kinetics, Aqueous Solutions, Aqueous-Solutions, Basic Dyes, Basic-Dyes, Batch, Batch Mode, Capacity, Concentration, Diffusion, Diffusion Kinetics, Diffusion Model, Distribution, Dye, Dyes, Energy, Equilibrium, Extraction Solvents, Heterogeneity, Hydrophilic Polymers, Intraparticle Diffusion, Intraparticle Diffusion Model, Jalshakti, Kinetic, Kinetic Studies, Kinetics, Liquid-Phase Adsorption, Literature, Mb, Mechanism, Mesoporous, Methylene Blue, Methylene Blue Dye, Methylene-Blue, Mode, Model, Polymer, Pore Diffusion, Potential, Pseudo Second Order, Pseudo-Second-Order, Release, Remediation, Removal, Removal of Dyes, Second Order, Second-Order, Selective, Selective Removal, Si, Solutions, Super Absorbent Polymer, Super Absorbent Polymers, Superabsorbent, Surface, Surface Heterogeneity, Value, Waste-Water

# Title: Global and Planetary Change

Full Journal Title: [Global and Planetary Change](http://www.sciencedirect.com/science/journal/09218181)

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Subject Categories:

Geography, Physical: Impact Factor 3.272, 5/36 (2009); Impact Factor 3.551, 5/42, (2010)

Geosciences, Multidisciplinary: Impact Factor 3.272, 12/155, (2009); Impact Factor 3.551, 13/165, (2010)

? Li, J.F., Wang, M.H. and Ho, Y.S. (2011), Trends in research on global climate change: A Science Citation Index Expanded-based analysis. *Global and Planetary Change*, **77** (1-2), 13-20.

Full Text: [2011\Glo Pla Cha77, 13.pdf](2011/Glo%20Pla%20Cha77,%2013.pdf); [2011\Glo Pla Cha-Li1.pdf](file:///F:/Bibliometric%20References/2011/Glo%20Pla%20Cha-Li1.pdf); [2011\Glo Pla Cha-Li.pdf](2011/Glo%20Pla%20Cha-Li.pdf)

Abstract: This study was conceived to evaluate the global scientific output of climate change research over the past 18 years and to assess the characteristics of the research patterns, tendencies, and methods in the papers. Data were based on the online version of Science Citation Index Expanded from 1992 to 2009. Articles referring to climate change were assessed by distribution of source countries, source institutes, paper titles, author keywords, KeyWords Plus, abstracts, and the most cited articles in these years. By synthetic analysis of the four kinds of keywords, it was concluded that the items “temperature”, “environment”, “precipitation”, “greenhouse gas”, “risk”, and “biodiversity” will be the foci of climate change research in the 21st century, while “model”, “monitoring”, and “remote sensing” will continue to be the leading research methods. A novel method, “phylogeography”, may have a strong application potential in the near future. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adaptation, Bibliometric Analysis, Bibliometrics, Citation, Climate Change, Ice-Core, Model, Model, Papers, Precipitation, Research, Research Trend, Responses, Science Citation Index, Sea-Level Rise, Space-Time Climate, System, Temperature, Word Cluster Analysis

# Title: Global Public Health

Full Journal Title: Global Public Health

ISO Abbreviated Title:

JCR Abbreviated Title:

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Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Aaron, G.J., Wilson, S.E. and Brown, K.H. (2010), Bibliographic analysis of scientific research on selected topics in public health nutrition in West Africa: Review of articles published from 1998 to 2008. *Global Public Health*, **5**, S42-S57.

Full Text: 2010\Glo Pub Hea5, S42.pdf

Abstract: Few countries in West Africa have the capacity for carrying out advanced training in nutrition and public health. To provide additional information on current regional applied nutrition research capacity and productivity, we analysed peer-reviewed articles on key public health nutrition topics that were published from 1998 to 2008. Using MEDLINE/PubMed, the following terms were searched: ‘breast feeding’, ‘infant nutrition physiology’ (comprising complementary feeding and weaning), ‘protein energy malnutrition’, ‘nutrition and infection’, ‘vitamin A’, ‘iodine’, ‘zinc’ and ‘overweight’, each linked with the term ‘Western Africa’. In total, 412 unique articles (37 +/- 6 articles per year) were identified. Most research focused on infant and young child feeding practices, selected micro-nutrient deficiencies, and the emerging problem of overweight and obesity. The primary author of nearly half (46%) the publications was located in an institution outside of West Africa. Most articles were published in English (90%), and nearly half of all articles (41%) were cross-sectional studies. Our findings indicate that few peer-reviewed research studies are being published on key public health topics in the West African region, considering the magnitude of nutrition problems in this region. New approaches are needed to encourage and support research capacity and output in West Africa.

Keywords: Advanced Training, Africa, Analysis, Applied Research, Bibliometrics, Breast Feeding, Breast-Feeding, Capacity, Child, Complementary, Cross-Sectional Studies, Energy, Feeding, Health, Infant, Infant Nutrition, Infection, Information, Malnutrition, Nutrition, Obesity, Overweight, Peer-Reviewed, Physiology, Practices, Prevalence, Primary, Productivity, Protein, Public, Public Health, Public Health Nutrition, Publications, Region, Regional, Research, Review, Scientific Research, Si, Support, Term, Training, Trends, Vitamin A, West Africa

# Title: Gold Bulletin

Full Journal Title: Gold Bulletin

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chang, Y.C. and Chen, D.H. (2006), Recovery of gold(III) ions by a chitosan-coated magnetic nano-adsorbent. *Gold Bulletin*, **39** (3), 98-102.

Abstract: The monodisperse chitosan-coated Fe3O4 nanoparticles with a mean diameter of 13.5 nm and 4.92 wt% chitosan were used as an anionic magnetic nano-adsorbent for the recovery of Au(III) ions from aqueous solutions. It was found that Au(III) ions could be fast and efficiently adsorbed, and the adsorption capacity increased with the decrease in pH due to the protonation of the amino groups of chitosan. The adsorption data obeyed the Langmuir equation with a maximum adsorption capacity of 59.52 mg/g (1210 mg/g based on the weight of chitosan) and a Langmuir adsorption equilibrium constant of 0.066 l/mg. From the studies on the adsorption kinetics and thermodynamics of Au(III) ions, it was found that the adsorption process obeyed the pseudo-second-order kinetic model. Furthermore, the time required to reach the equilibrium was significantly shorter than those using the micro-sized adsorbents due to the large available surface area.

Keywords: Gold(III), Adsorption, Chitosan, Magnetic, Adsorption Capacity, Aqueous-Solutions, Cross-Linking, Cu(II) Ions, Metal-Ions, Sorption, Equilibrium, Nanoparticles, Removal, Gold

# Title: Government Information Quarterly

Full Journal Title: [Government Information Quarterly](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6542&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=9d8a45e59b84ede19aa666aa33ba7359)

ISO Abbreviated Title: Gov. Inf. Q.

JCR Abbreviated Title: Gov Inform Q

ISSN: 0740-624X

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Elsevier Science Inc

Publisher Address: 655 Avenue of the Americas, New York, NY 10010

Subject Categories:

Information Science & Library Science: Impact Factor 0.298, / (2001) SSCI

Altman, E. and Antieau, K. (1988), Dissemination and impact of U.S. department of education’s library research and demonstration projects: A citation analysis. *Government Information Quarterly*, **5** (1), 45-56.

Full Text: [G\Gov Inf Qua5, 45.pdf](G/Gov%20Inf%20Qua5,%2045.pdf)

Abstract: Between 1965 and 1980, the Library Research and Demonstration Branch within the Department of Education awarded over $25 million to 312 projects. By tracing the citations in *Social Sciences* *Citation Index* from a random sampling of 52% of these projects, this study has attempted to assess the dissemination and impact of the projects in the professional literature.

Approximately half of the projects were not cited in *SSCI*. The citations tended to be clustered among a small number of library-related serials. A small number of funded projects accounted for a large number of the citations. The most cited projects cost only one-fifth as much as the most expensive studies, yet were cited nearly five times as often.

# Title: Government Publications Review

Full Journal Title: [Government Publications Review](http://www.sciencedirect.com/science/journal/02779390)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hernon, P. and Shepherd, C.A. (1983), Government publications represented in the Social-Sciences-Citation-Index - An exploratory-study. *Government Publications Review*, **10** (2), 227-244.

Full Text:Gov Pub Rev10, 227

# Title: Gradevinar

Full Journal Title: Gradevinar

ISO Abbreviated Title: Gradevinar

JCR Abbreviated Title: Gradevinar

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Simovic, V. (2009), Sixty years of continuous publication of *Gradevinar*. *Gradevinar*, **61** (1), 39-49.

Abstract: The journal Gradevinar (or Construction Professional in Croatian) is now celeberating its sixtieth anniversary of regular publication under the same name. From almost the first days of the journal, the policy has been to publish research & professional articles and maintain an image as a primarily professional and research-oriented publication. At the same time, efforts are continuously being made to keep the journal at the forefront of the civil engineering developments and, in that respect, much attention is paid to the development of civil engineering, construction technology and building materials, with presentation of significant construction sites, both domestic and international. This is complemented with themes relating to environmental protection, history of civil engineering and other topics of high interest to this profession, As the journal is also the official publication of the Croatian Association of Civil Engineers, it regularly informs its readers about significant social events in this fields, and other topics. Over the last 60 years, as many as 671 issues, with 36.155 pages, have been published under the skilful guidance of 5 Editors-in-chief and 77 members of the Editorial Board. The journal boasts as many as 2624 research and professional articles, or articles that can be considered as such since the present day article classification was initiated in 1980. Throughout this extensive period of time the journal has been improving with respect to its content, graphical presentation and organization. Thus, English and Russian language abstracts of published articles are provided since 1977, while abstracts are provided in 5 languages (Croatian, English, French, Russian and German) since 1992. The journal is also published on the Internet since 1996 (the full issue is on the web since 2000) and is cited since early 2008 in reputable international data bases: Science Citation Index Expanded (SciSearch) and the Journal Citation Reports/Science Edition. Its present day circulation is 4500 copies per issue.

Keywords: Citation, History, Internet, Policy, Publication, Research, Science

# Title: Grasas y Aceites

Full Journal Title: Grasas y Aceites

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0017-3495

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Constante, E.G., del Valle, M.L.J. and Duran, R.M. (2007), Bibliographical summary on high performance liquid chromatography of lipids: IV - 1985-1994. *Grasas y Aceites*, **48** (4), 236-247.

Abstract: The present summary, following the tradition begun by K. Aitzetmuller with the works published from 1961 and continued by the present authors from 1975, is a compilation of articles appearing between the years given in the title; the database used was primarily Chem. Abstr. The study indicates the most frequent topics of research and the more specialised journals. The total number of works reviewed is 1680, 680 more than those appearing in the previous decade. Special emphasis is given to the reviews includes. (English).

Keywords: Bibliometric (Study), High Performance Liquid Chromatography, Lipid, Review (Paper), Quantitative-Analysis, HPLC, Separation, Carotenoids, Glycerolipids, Phospholipids, Derivatives, Retinoids, Products, Acid

? Ena, A., Carlozzi, P., Pushparaj, B., Paperi, R., Carnevale, S. and Sacchi, A. (2007), Ability of the aquatic fern Azolla to remove chemical oxygen demand and polyphenols from olive mill wastewater. *Grasas y Aceites*, **58** (1), 34-39.

Abstract: We investigated the biofiltration ability of the aquatic fern Azolla to remove polyphenols and chemical oxygen demand (COD) from olive mill wastewater (OMWw) collected from the traditional (TS) and continuous (CS) extraction systems. Azolla biomass was packed into five sequential Imhoff cones and five sequential columns. In both experiments, the filtrates collected from the 5(th) biofilter showed a decrease in polyphenol contents: from 7650 mg l-1 to 3610 mg l-1 in TS OMWw and from 3852 mg l-1 to 1351 mg l-1 in CS OMWw. The COD contents decreased from 110200 mg L-1 to 52400 mg L-1 in TS OMWw and from 41600 mg l-1 to 2300 mg L-1 in CS OMWw. A 5:1 OMWw to Azolla-fresh-weight ratio was optimal for both polyphenol and COD removal. The biofiltration ability of alfalfa was compared with that of Azolla, but the treatment with alfalfa did not result in the reduction of COD or polyphenols.

Keywords: Azolla, Biological Treatment, Chemical Oxygen Demand, Olive Mill Wastewater, Polyphenols, Anaerobic-Digestion, Phenolic-Compounds, Tree Fern, Wastewaters, Oil, Degradation, Effluents

? de la Viesca, R., Fernandez, E. and Salvador, J. (2007), Analysis of the scientific production of olive products. I - Table olives. *Grasas y Aceites*, **58** (3), 307-310.

Abstract: This article contains an overview of the scientific production in the area of table olives during the period 2000-2005. Author’s productivity, most relevant topics, sources of information and groups of authors are analysed using basic bibliometric indicators. Also, contributions and collaborations among groups of authors are studied. Finally, this work includes impact indicators from the most important journals on this topic.

Keywords: Bibliometric, Bibliometric Analysis, Scientific Production, Table Olives

# Title: Green Chemistry

Full Journal Title: [Green Chemistry](http://www.rsc.org/Publishing/Journals/GC/article.asp?type=CurrentIssue)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Orlando, U.S., Baes, A.U., Nishijima, W. and Okada, M. (2002), Preparation of chelating agents from sugarcane bagasse by microwave radiation as an alternative ecologically benign procedure. *Green Chemistry*, **4** (6), 555-557.

Full Text: [2002\Gre Che4, 555.pdf](2002/Gre%20Che4,%20555.pdf)

Abstract: Microwave radiation was utilized to produce neutral chelating agents (BCA) from sugarcane bagasse. BCA were prepared by reaction of urea with reactive sites present in bagasse such as hydroxyl and carboxylic groups. BCA prepared through microwave radiation had slightly lower yield (83%) compared to the conventional oven-drier process (87%). BCA demonstrated maximum chelating adsorption capacity (Qmax) of 1.2 mmol g-1 for Cu(II) at pH of 5.5 and 1.4 mmol g-1 for Hg(II) at pH 6.0. These results could be comparable with the Qmax of 1.46 mmol g-1 for Cu(II) and 2.4 mmol g-1 for Hg(II) obtained from Duolite GT-73, a commercial chelating resin, macroreticular with tiol (S-H) functional groups.

Keywords: Ion-Exchange Resins, Mercury Removal, Adsorption, Water

? Romero-Hernandez, O. (2004), To treat or not to treat? Applying chemical engineering tools and a life cycle approach to assessing the level of sustainability of a clean-up technology. *Green Chemistry*, **6** (8), 395-400.

Full Text: [2004\Gre Che6, 395.pdf](2004/Gre%20Che6,%20395.pdf)

Abstract: A traditional approach used to evaluate clean-up technologies, in which only plant discharges are considered, is contrasted with a sustainability assessment. The sustainability of any technology can be assessed from three complementary points of view: economic, environmental and social. As such, this paper presents a comprehensive scheme that can be applied to any process, product or technology. In addition, the use of chemical engineering tools such as process design, process modelling and simulation represent a baseline for the sustainability assessment of technologies, as presented in a case study. The optimal granular activated carbon adsorption process design is used as a model system to demonstrate the advantages of sustainability approaches over traditional approaches. A mathematical model that describes the performance of the process at various design options was developed. This model includes cost equations that were used to estimate the total cost of each alternative under different plant designs and two waste scenarios (a benzene and a 1,2-dichloroethane discharge). Life Cycle Assessment tools were applied to generate an inventory of emissions and the impact assessment measured as Photochemical Ozone Creation (POC) and Global Warming Potential (GWP). The model examined trade-offs between pollutants discharged into the atmosphere and pollution associated with the adoption and operation of the technology. One of the main results from the technology assessment is that the environmental impact, measured in terms of GWP proved to be higher for the technology operation than for the untreated waste streams themselves, and therefore suggested that the streams should not be treated. However, the social impact evaluation (measured as risk assessment) conducted as part of this work proved that it was morally and legally mandatory to treat them due to the adverse effects on human health that they may represent. As such, a triple bottom line sustainability assessment was demonstrated to be one of the most important frameworks for decision making. The evaluation scheme presented in this work can also be applied to other areas such as the identification of the most sustainable process design and different green chemistry route alternatives.

Keywords: Adsorption, Assessment, Costs, Design, Evaluation, GAC, Models, Organics

# Title: Group Processes & Intergroup Relations

Full Journal Title: [Group Processes & Intergroup Relations](http://gpi.sagepub.com/archive/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? de Moura, G.R., Leader, T., Pelletier, J. and Abrams, D. (2008), Prospects for *Group Processes and Intergroup Relations* research: A review of 70 years’ progress. *Group Processes & Intergroup Relations*, **11** (4), 575-596.

Full Text: [2008\Gro Pro Int Rel11, 575.pdf](2008/Gro%20Pro%20Int%20Rel11,%20575.pdf)

Abstract: Three archival analyses are presented substantially extending empirical reviews of the progress of group-related research. First, an analysis of social psychological research from 1935 to 2007 (cf. Abrams & Hogg, 1998) showed that group-related research has a steadily increasing proportion of titles in the principal journals and currently accounts for over a sixth of all the research in our list of social psychological journals. Second, analysis of the most cited papers from a set of principal social psychology journals from 1998 to 2007 showed that a third of high-impact articles in social psychology focus on groups. Third, analysis of the content of two major specialist journals in the field, Group Processes & Intergroup Relations and Group Dynamics: Theory, Research, and Practice, showed that together these journals cover a broad range of group-related research, and that the only keyword common to both journals was social identity. These findings demonstrate the health and major contributions of research into group processes and intergroup relations to social psychology as a whole.

Keywords: Analysis, Dynamics, Empirical Review, Future, Group Decision, Group Dynamics, Group Processes, Group-Related Research, Intergroup Relations, Journals, Psychology, Research, Research Development, Review

# Title: Ground Water

Full Journal Title: [Ground Water](http://www.blackwell-synergy.com/loi/gwat)

ISO Abbreviated Title: Ground Water

JCR Abbreviated Title: Ground Water

ISSN: 0017-467X

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Ground Water Publishing Co

Publisher Address: 601 Dempsey Rd, Westerville, OH 43081

Subject Categories:

Geosciences, Interdisciplinary: Impact Factor 1.191, /

Water Resources: Impact Factor 1.191, /

? Mills, W.B., Liu, S. and Fong, F.K. (1991), Literature-review and model (comet) for colloid metals transport in porous-media. *Ground Water*, **29** (2), 199-208.

Full Text: [1991\Gro Wat29, 199.pdf](1991/Gro%20Wat29,%20199.pdf)

Abstract: This paper summarizes topics related to colloid transport in subsurface media. The ultimate objective of the paper is to present a model that can be used to evaluate the significance of colloid facilitated transport on the mobility of metals. Field and laboratory studies are first reviewed to evaluate evidence that colloids are transported in subsurface media. Second, researchers active in the field are contacted to identify areas of ongoing research, and to solicit opinions concerning the level of understanding of mechanisms that control colloid migration. Third, the literature on colloid transport mechanisms is reviewed, with particular emphasis on colloid (and particle) filtration and on colloid stability as influenced by electrical repulsion and van der Waals attraction. Fourth, a conceptual colloids-metal transport model (COMET) is developed and incorporated into EPA’s CML model, a model that simulates solute migration from a landfill in the unsaturated zone to a receptor (i.e., drinking-water well) in the saturated zone. Among the major features of the COMET model are the capability to simulate multiple metal species either dissolved or adsorbed to mobile colloids (in conjunction with results from a geochemical equilibrium model), the capability to simulate the influence of multiple colloid types, and to adjust source concentration and duration in the presence of colloids that migrate from a source. These capabilities are embodied in equations (2) and (3) in the main text of this paper. As expected, results from the COMET simulations indicate that mobile phase metal concentrations (dissolved concentration plus concentration adsorbed to mobile colloids) increase as colloid concentrations increase, and arrival times of soluble metal species (solutes) to stationary receptors decrease. When the partition coefficients for solute-colloid adsorption and solute-soil matrix adsorption are the same, neither the increase in mobile phase concentration nor decrease in travel time is always significant. However, when partition coefficients for solute-colloid adsorption are greater than partition coefficients for solute-soil matrix adsorption, travel times to stationary receptors can dramatically decrease and total mobile phase concentrations dramatically increase.

Keywords: Organic Pollutants, Filtration, Particles, Water, Pesticides, London, Forces, Soil

? Semprini, L., Hopkins, G.D., Roberts, P.V., Grbicgalic, D. and Mccarty, P.L. (1991), A field-evaluation of insitu biodegradation of chlorinated ethenes. 3. Studies of competitive-inhibition. *Ground Water*, **29** (2), 239-250.

Full Text: [1991\Gro Wat29, 239.pdf](1991/Gro%20Wat29,%20239.pdf)

Abstract: Results are presented that demonstrate the in-situ biotransformation of vinyl chloride (VC), trans-1,2-dichloroethylene (t-DCE), cis-1,2-dichloroethylene (c-DCE), and trichloroethylene (TCE) by an enhanced population of methane-utilizing (methanotrophic) bacteria. Biostimulation was accomplished by introducing dissolved methane and oxygen into a shallow, confined aquifer, to encourage the growth of the native methanotrophic bacteria. Biotransformation of the target compounds ensued immediately after the commencement of methane utilization, and reached steady-state values within three weeks. The approximate extents of transformation achieved in the two meter biostimulated zone were as follows: VC, 95%; t-DCE, 90%; c-DCE, 50%; and TCE, 20%. The biotransformation of VC and t-DCE was observed to be competitively inhibited by methane. Cyclic variations in methane concentration caused by the alternate pulse injection of dissolved methane into the test zone caused oscillations of the aqueous concentrations of VC and t-DCE. When formate and methanol were substituted for methane as alternative electron donors, inhibition ceased (no oscillations), and concentrations were reduced to levels achieved during periods when no methane was present, confirming the inhibition by methane. Higher transformation rates were achieved temporarily, i.e., for several days, through the addition of formate or methanol. When electron donor addition was terminated, the concentration of target compounds rapidly increased, indicating that the transformation promptly ceased. Although these experiments indicated that methane competitively inhibits transformation rates, this competition is a second-order effect: methane as substrate for growth was also required for transformation of VC, t-DCE, c-DCE, and TCE by methanotrophs.

Keywords: Microbial Oxidation, Methane, Hydrocarbons, Metabolism, Ethylenes, Culture, Ethanes

Notes: highly cited

? Gillham, R.W. and Ohannesin, S.F. (1994), Enhanced degradation of halogenated aliphatics by zero-valent iron. *Ground Water*, **32** (6), 958-967.

Full Text: [1994\Gro Wat32, 958.pdf](1994/Gro%20Wat32,%20958.pdf)

Abstract: Laboratory tests were conducted to examine zero-valent iron as an enhancing agent in the dehalogenation of 14 chlorinated methanes, ethanes, and ethenes. All compounds were tested by batch procedures in which 10 g of 100-mesh electrolytic iron was added to 40 ml hypovials. Aqueous solutions of the respective compounds were added to the hypovials, and the decline in concentration was monitored over time. Substantial rates of degradation were observed for all compounds tested with the exception of dichloromethane. The degradation process appeared to be pseudo first-order with respect to the organic compound, with the rate constant appearing to be directly proportional to the surface area to volume ratio and increasing with increasing degree of chlorination. Column tests showed the process to proceed under flow conditions with degradation rates independent of velocity and consistent with those measured in the batch tests. When normalized to 1 m2/ml, the t50 values ranged from 0.013 to 20 hr, and were about 5 to 15 orders of magnitude lower than values reported for natural rates of abiotic degradation. The results indicate abiotic reductive dechlorination, with iron serving as the source of electrons; the mechanism is, however, uncertain. Based on the rapid rates of degradation, both in situ and aboveground applications for remediation of contaminated ground water are proposed.

Keywords: Groundwater

Notes: highly cited

? Welch, A.H., Westjohn, D.B., Helsel, D.R. and Wanty, R.B. (2000), Arsenic in ground water of the United States: Occurrence and geochemistry. *Ground Water*, **38** (4), 589-604.

Full Text: [2000\Gro Wat38, 589.pdf](2000/Gro%20Wat38,%20589.pdf)

Abstract: Concentrations of naturally occurring arsenic in ground water vary regionally due to a combination of climate and geology. Although slightly less than half of 30,000 arsenic analyses of ground water in the United States were less than or equal to 1 mu g/L, about 10% exceeded 10 mu g/L. At a broad regional scale, arsenic concentrations exceeding 10 mu g/L appear to be more frequently observed in the western United States than in the eastern half. Arsenic concentrations in ground water of the Appalachian Highlands and the Atlantic Plain generally are very low (less than or equal to 1 mu g/L), Concentrations are somewhat greater in the Interior Plains and the Rocky Mountain System. Investigations of ground water in New England, Michigan, Minnesota, South Dakota, Oklahoma, and Wisconsin within the last decade suggest that arsenic concentrations exceeding 10 mu g/L are more widespread and common than previously recognized. Arsenic release from iron oxide appears to he the most common cause of widespread arsenic concentrations exceeding 10 mu g/L in ground water. This can occur in response to different geochemical conditions, including release of arsenic to ground water through reaction of iron oxide with either natural or anthropogenic (i.e., petroleum products) organic carbon. Iron oxide also can release arsenic to alkaline ground water, such as that found in some felsic volcanic rocks and alkaline aquifers of the western United States. Sulfide minerals are both a source and sink for arsenic. Geothermal water and high evaporation rates also are associated,vith arsenic concentrations greater than or equal to 10g/L in ground and surface water, particularly in the west.

Keywords: Aquifers, Arsenic, Carbon, Clark-Fork-River, Drinking-Water, Evaporation, Ferrihydrite, Geothermal Waters, Iron, Iron Oxide, Lake-Sediments, Lead Arsenate, Pyrite Oxidation, Scale, Surface Water, Surface-Chemistry, Thiobacillus-Ferrooxidans, Trace-Metals, Water

? Schwartz, F.W. and Ibaraki, M. (2001), Hydrogeological research: Beginning of the end or end of the beginning? *Ground Water*, **39** (4), 492-498.

Full Text: [2001\Gro Wat39, 492.pdf](2001/Gro%20Wat39,%20492.pdf)

Abstract: This paper uses citation data to assess whether articles published in key ground water journals such as Ground Water (GW) and Water Resources Research (WRR) are impacting research. Citation information was obtained from SCI Journal Citation Reports and The Web of Science - databases maintained by the Institute for Scientific Information (ISI), Information extracted from The Web of Science was processed further to remove corrections to papers, discussion/replies, and book reviews. Generally, there are many ground water papers published, but citations of these papers are limited. Approximately 10% to 15% of WRR articles, and 2% to 3% of GW articles attract more than 50 citations in their lifetimes. In both GW and WRR, the top 10% of papers eventually will contribute nearly half of the total yearly citations. Another emerging trend is a diminishing emphasis on citations to new work as compared to work more than 10 years in age. When articles in Ground Water or Journal of Hydrology cite papers in Water Resources Research, those papers cite work 10 or more years old half of the time. If one believes that citations are a measure of science impact, then there is cause for concern. Research is inefficient with much produced for little gain. On a typical industrial life-cycle curve, ground water research is likely ranked as mature and close to aging. At this stage, much work will have been completed and the number of truly impactful problems will have dwindled to just a few.

? (2002), “Hydrogeological research: Beginning of the end or end of the beginning?” by F.W. Schwartz, and M. Ibaraki. 2001. Ground Water 39, no. 4 : 492-498. Discussion by Miller and Gray appears on pp. 224-231 as an Issue Paper. *Ground Water*, **40** (3), 317-319.

Full Text: [2002\Gro Wat40, 317.pdf](2002/Gro%20Wat40,%20317.pdf)

# Title: Ground Water Monitoring and Remediation

Full Journal Title: Ground Water Monitoring and Remediation

ISO Abbreviated Title: Ground Water Monit. Remediat.

JCR Abbreviated Title: Ground Water Monit Remediat

ISSN: 1069-3629

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Ground Water Publishing Co

Publisher Address: 601 Dempsey Rd, Westerville, OH 43081

Subject Categories:

Water Resources: Impact Factor 0.732, / (2000)

? Lindberg, J., Sterneland, J., Johansson, P.O. and Gustafsson, J.P. (1997), Spodic material for in situ treatment of arsenic in ground water. *Ground Water Monitoring and Remediation*, **17** (4), 125-130.

Abstract: The teaching of chromium-copper-arsenic salts from old wood preservation sites is a threat to ground water at many places in Sweden. The installation of in situ reactive barriers is an attractive “passive” technique to prevent the further spreading of contaminants. The use of peat as a reactive barrier material has been suggested for heavy metals, but this material was expected to be unsatisfactory for arsenic (As). Therefore, the feasibility of using spodic B horizon material for the retention of arsenic was tested in laboratory column experiments. Contaminated soil was taken from an old preservation site and leached under conditions designed to imitate the field conditions. The arsenic load during the three-month duration of the test corresponded to a load at the field site during three years. The B horizon material proved to be efficient for retention of arsenic, despite the observation that As(III) dominated the As speciation. The As(III) concentration was reduced from 1 to 3 mg dm-3 to < 0.02 mg dm-3). Pure pear was, as expected, not suited as a reactive barrier for As, and a mixed B horizon/peat reactive barrier also proved unsatisfactory for the removal of As. It is therefore important to separate the B horizon material from any peat that is used to sorb heavy metals. Before applying the B horizon reactive barrier technique in the field, the effect of the naturally occurring variability of the reactive compounds should be tested. The inclusion of oxidizing agents in the barrier could possibly improve the lifetime considerably. Furthermore, the influence of the flow rate should be evaluated since the kinetics of the arsenic adsorption is relatively slow.

Keywords: Hydride Generation, Remediation, Adsorption, Soils

# Title: Gruppenpsychotherapie und Gruppendynamik

Full Journal Title: Gruppenpsychotherapie und Gruppendynamik

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Strauss, B., Schreiber, B. and Brahler, E. (2000), The relationship between empirical work and theory in group psychotherapy demonstrated in an analysis of the journal Gruppenpsychotherapie und Gruppendynamik. *Gruppenpsychotherapie und Gruppendynamik*, **36** (4), 305-316.

Abstract: In this article a bibliometrical analysis of two volumes of the journal Gruppenpsychotherapie and Gruppendynamik is described with the aim to assess the ratio between empirical work and theoretical contributions within a journal that should be representative for group research in Germany. The citations within 37 original articles are analysed with respect to the authors and their theoretical as well as their language-related origin (German speaking vs. Angloamerican). The quality of the articles is classified according to a schema from Buddeberg. The analysis showed a clear dominance of theoretical contributions from psychodynamic group psychotherapy. Related to quality it could be shown that the outline and hypotheses of many empirical as well as theoretical articles were specified in an insufficient manner.

Keywords: 3rd Basic Approach, Authors, Bibliometrical Analysis, Citations, Germany, Group-Therapy, Inpatient Group-Psychotherapy, Model, Oedipus, Psychosomatic-Medicine, Quality, Research, Self, Supervision, View

# Title: Gulf Research Reports

Full Journal Title: Gulf Research Reports

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chestnut, A.P. (1981), Morphometrics of the burrowing clam diplothyra-smithii Tryon. *Gulf Research Reports*, **7** (1), 1-11.

# Title: Gut

Full Journal Title: [Gut](http://global.umi.com/pqdweb?TS=0&JSEnabled=1&RQT=317&SK=2&ScQ=000028089&TS=1036747145)

ISO Abbreviated Title: Gut

JCR Abbreviated Title: Gut

ISSN: 0017-5749

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:

Gastroenterology & Hepatology: Impact Factor 6.170, 4/47 (2001)

? Calam, J. (1997), The most cited papers in *Gut*: A decade of helicobacterology. *Gut*, **40**, S7-S8.

Full Text: 1997\Gut40, S7.pdf

Keywords: Acid-Secretion, Campylobacter-Pyloridis, Cohort, Disease, Duodenal-Ulcer, Eradication, Gastritis, Papers, Pylori Infection

Reif, S., Klein I., Lubin, F., Farbstein, M., Hallak, A. and Gilat, T. (1997), Pre-illness dietary factors in inflammatory bowel-disease. *Gut*, **40** (6), 754-760.

Full Text: [G\Gut40, 754.pdf](G/Gut40,%20754.pdf)

Abstract: Background-The effect of environmental factors has been demonstrated in the pathogenesis of inflammatory bowel disease (IBD). Nutrition may be one of them. Aim-To investigate the pre-illness diet in patients with recent IBD in comparison with matched population and clinic controls. Methods-Quantified dietary histories were obtained from 87 patients with recent IBD (54 ulcerative colitis (UC) and 33 Crohn’s disease (CD)) and 144 controls. Odds ratios (OR) for IBD were derived for intake levels of various foods. Results-A high sucrose consumption was associated with an increased risk for IBD (OR 2.85 (p = 0.03) against population controls and 5.3 (p = 0.00) against clinic controls). Lactose consumption showed no effect while fructose intake was negatively associated with risk for IBD (NS). Similar trends were noted in UC and CD. A high fat intake was associated with an increased risk for UC, this was particularly marked for animal fat (OR 4.09, p = 0.02) and cholesterol (OR 4.57, p = 0.02). A high intake of fluids (p = 0.04), magnesium (p = 0.04), vitamin C, and fruits (NS) was negatively associated with the risk for IBD, while a positive association was found for retinol (p = 0.01). Most of the findings were similar in UC and CD except for potassium and vegetable consumption which showed a negative association only with risk for CD. Conclusions-An association was found between pre-illness diet and subsequent development of UC and CD. The effect of dietary components may be primary or modulatory.

Keywords: Diet, Nutrition, Ulcerative Colitis, Crohns Disease, Inflammatory Bowel Disease, Breast-Cancer Etiology, Crohns-Disease, Ulcerative-Colitis, Cigarette-Smoking, Consumption, Sugar, Fiber, Fat

Tan, W.C., Krasner, N.O., Toole, P. and Lombard, M. (1997), Enhancement of photodynamic therapy in gastric cancer cells by removal of iron. *Gut*, **41** (1), 14-18.

Full Text: [G\Gut41, 14.pdf](G/Gut41,%2014.pdf)

Abstract: Background-Aminolaevulinic acid (ALA) is an endogenous substrate in the haem biosynthetic pathway. Protoporphyrin IX (PPM), the immediate haem precursor in the pathway, has photoexcitable properties. Exogenous ALA has been used previously as a precursor agent in photodynamic therapy (PDT). Its main advantage is a short half-life and hence reduced incidence of skin photosensitivity. ALA can be toxic, however, causing, for example, transient increases in liver enzyme concentrations when given systemically and this may be dose related.Aim-To assess whether accumulation of PPM and ultimately the efficacy of PDT could be improved by modulating both ends of the haem biosynthetic pathway. Methods-Gastric cancer cells (MKN 28) were incubated with ALA (0-1000 µmolar) and desferrioxamine (0-800 µmolar) for 24 hours before exposure to argonpumped dye laser (630 nm) at different energy levels (0-40 J/cm2). Cell viability was assessed by use of the methyl-tetrazolium (MTT) assay four hours after exposure to light. Results-Total PPM accumulation increased linearly with

Lewison, G. (1998), Gastroenterology research in the United Kingdom: Funding sources and impact. *Gut*, **43** (2), 288-293.

Full Text: [G\Gut43, 288.pdf](G/Gut43,%20288.pdf)

Abstract: Aims-To determine the sources of funding for UK gastroenterology research papers and the relative impact of papers funded by different groups and of unfunded ones.

Methods-UK gastroenterology papers from 1985-94 were selectively retrieved from the Science Citation Index by means of a specially constructed filter based on their title keywords and journal names. They were looked up in libraries to determine their funding sources and these, together with their numbers of authors, numbers of addresses, and research category (clinical/basic) were considered as input parameters to the research. Output parameters analysed were mean journal impact category, citation counts by papers, and the frequency of citation by a US patent.

Results-Gastroenterology papers comprise about 7% of all UK biomedical research and 46% of them have no acknowledged funding source. One quarter of the papers acknowledged government support, and a similar fraction a private, non-profit source; 11% were funded by the pharmaceutical industry The papers acknowledging funding had significantly more impact than the others on all three measures. The citing patents had six times more UK inventors than the average for all US Patent and Trademark Office patents in the relevant classes and were mostly generic in application.

Conclusion-The variation in impact of papers funded by different sources can mostly be explained by a simple model based on the input factors (numbers of funding bodies, numbers of authors, numbers of addresses, and research type). The national science base in gastroenterology is important for the underpinning of UK invented patents citing to it.

Keywords: Bibliometric Analysis, Citation, Citations, Funding, Gastroenterology, Impact, Libraries, Patents, Performance, Research, Science, Spain, Technology, United Kingdom

Lewison, G., Grant, J. and Jansen, P. (2001), International gastroenterology research: Subject areas, impact, and funding. *Gut*, **49** (2), 295-302.

Full Text: [G\Gut49, 295.pdf](G/Gut49,%20295.pdf)

Abstract: Aims - To examine the volume and potential impact of gastroenterology research outputs from 1985 to 1998 from 14 developed countries; the overlap with research in cancer, infectious diseases, and genetics; and the funding sources for this research. To determine if countries’ research outputs correlated with their burden of corresponding diseases and inputs to their research.

Methods - Selective retrieval of papers from the Science Citation Index and manual look up of a sample to determine funding sources. Classification of journals by four categories of research level (clinical/basic) and potential impact (low/high).

Results - Gastroenterology represents about 8% of world biomedical research but over 11% in Italy, Japan, and Spain. Its potential impact is highest (but declining) for the USA. It has increased noticeably in most European countries, particularly in Finland. Gastroenterology research has become more clinical in Japan, Spain, Australia, and the Netherlands but more basic in Canada, Germany, Finland, Israel, and South Africa. Funding comes primarily from national governments, followed by national private non-profit sources and industry but little industrial funding occurs in some countries. There is a strong and positive correlation between reported deaths from gastrointestinal neoplasms and countries’ outputs of research in gastrointestinal oncology.

Conclusions - Bibliometric analysis can reveal differences between countries in their research in a subject when a common methodology is applied to an international database. Variations in research methods in different countries can plausibly explain some of the variation in the potential impact of the work.

Keywords: Bibliometrics, Funding, Impact, Journals, Mortality, Research

? Leung, W.K., Lin, S.R., Ching, J.Y.L., To, K.F., Ng, E.K.W., Chan, F.K.L., Lau, J.Y.W. and Sung, J.J.Y. (2004), Factors predicting progression of gastric intestinal metaplasia: Results of a randomised trial on *Helicobacter pylori* eradication. *Gut*, **53** (9), 1244-1249.

Full Text: [2004\Gut53, 1244.pdf](2004/Gut53,%201244.pdf)

Abstract: Background and aim: Gastric intestinal metaplasia (IM) is generally considered to be a precancerous lesion in the gastric carcinogenesis cascade. This study identified the risk factors associated with progression of IM in a randomised control study. Subjects and methods: A total of 587 Helicobacter pylori infected subjects were randomised to receive a one week course of anti-Helicobacter therapy (omeprazole, amoxicillin, and clarithromycin (OAC)) or placebo. Subjects underwent endoscopy with biopsy at baseline and at five years. Severity of IM was graded according to the updated Sydney classification and progression was defined as worsening of IM scores at five years in either the antrum or corpus, or development of neoplasia. Backward stepwise multiple logistic regression was used to identify independent risk factors associated with IM progression. Results: Of 435 subjects (220 in the OAC and 215 in the placebo group) available for analysis, 10 developed gastric cancer and three had dysplasia. Overall progression of IM was noted in 52.9% of subjects. Univariate analysis showed that persistent H pylori infection, age >45 years, male subjects, alcohol use, and drinking water from a well were significantly associated with IM progression. Duodenal ulcer and OAC treatment were associated with a reduced risk of histological progression. Progression of IM was more frequent in those with more extensive and more severe IM at baseline. With multiple logistic regression, duodenal ulcer (odds ratio (OR) 0.23 (95% confidence interval (CI) 0.09-0.58)) was found to be an independent protective factor against IM progression. Conversely, persistent H pylori infection (OR 2.13 (95% CI 1.41-3.24)), age >45 years (OR 1.92 (95% CI 1.18-3.11)), alcohol use (OR 1.67 (95% CI 1.07-2.62)), and drinking water from a well (OR 1.74 (95% CI 1.13-2.67)) were independent risk factors associated with IM progression. Conclusion: Eradication of H pylori is protective against progression of premalignant gastric lesions.

Keywords: Cancer Mortality, Carcinogenesis, Classification, Drinking-Water, Dysplasia, Follow-Up, Helicobacter Pylori, Improvement, Infection, Precancerous Lesions, Risk, Risk Factors, Treatment, Water

? Hart, P.A., Ibdah, J.A. and Marshall, J.B. (2007), Internationalisation of high-impact gastroenterology journals, 1970-2005. *Gut*, **56** (6), 895-896.

Full Text: [2007\Gut56, 895.pdf](2007/Gut56,%20895.pdf)

Keywords: Gastroenterology, Journals

? Spiller, R., Aziz, Q., Creed, F., Emmanuel, A., Houghton, L., Hungin, P., Jones, R., Kumar, D., Rubin, G., Trudgill, N. and Whorwell, P. (2007), Guidelines on the irritable bowel syndrome: mechanisms and practical management. *Gut*, **56** (12), 1770-1798.

Full Text: 2007\Gut56, 1770.pdf

Abstract: Background: IBS affects 5-11% of the population of most countries. Prevalence peaks in the third and fourth decades, with a female predominance. Aim: To provide a guide for the assessment and management of adult patients with irritable bowel syndrome. Methods: Members of the Clinical Services Committee of The British Society of Gastroenterology were allocated particular areas to produce review documents. Literature searching included systematic searches using electronic databases such as PUBMED, EMBASE, MEDLINE, Web of Science, and Cochrane databases and extensive personal reference databases. Results: Patients can usefully be classified by predominant bowel habit. Few investigations are needed except when diarrhoea is a prominent feature. Alarm features may warrant further investigation. Adverse psychological features and somatisation are often present. Ascertaining the patients’ concerns and explaining symptoms in simple terms improves outcome. IBS is a heterogeneous condition with a range of treatments, each of which benefits a small proportion of patients. Treatment of associated anxiety and depression often improves bowel and other symptoms. Randomised placebo controlled trials show benefit as follows: cognitive behavioural therapy and psychodynamic interpersonal therapy improve coping; hypnotherapy benefits global symptoms in otherwise refractory patients; antispasmodics and tricyclic antidepressants improve pain; ispaghula improves pain and bowel habit; 5-HT(3) antagonists improve global symptoms, diarrhoea, and pain but may rarely cause unexplained colitis; 5-HT(4) agonists improve global symptoms, constipation, and bloating; selective serotonin reuptake inhibitors improve global symptoms. Conclusions: Better ways of identifying which patients will respond to specific treatments are urgently needed.

Keywords: Adult, Antidepressants, Anxiety, Assessment, Bile-Acid Malabsorption, Bloating, Chronic Pelvic Pain, Cochrane, Constipation, Databases, Depression, Embase, Enterochromaffin Cell Hyperplasia, Functional Gastrointestinal Disorders, Health-Care Seeking, Intestinal Bacterial Overgrowth, Irritable Bowel Syndrome, Literature Searching, Management, Medline, Methods, Outcome, Pain, Placebo-Controlled Trial, Quality-of-Life, Randomized Controlled-Trial, Review, Rome-II Criteria, Science, Selective Serotonin Reuptake Inhibitors, Serotonin, Symptoms, Systematic, Therapy, Web of Science

? Song, F., Phesse, T., Jenkins, J., Clarke, A. and Watson, A.J.M. (2009), Cited 1 is a novel colorectal cancer gene whose deficiency inhibits the growth of colorectal cancer. *Gut*, **58** (S1), A3.

Full Text: 2009\Gut58, A3.pdf

Keywords: Cancer

# Title: Gynecologic Oncology

Full Journal Title: Gynecologic Oncology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0090-8258

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Averette, H.E. and Nguyen, H.N. (1994), The role of prophylactic oophorectomy in cancer prevention. *Gynecologic Oncology*, **55** (3), S38-S41.

Full Text: [G\Gyn Onc55, S38.pdf](G/Gyn%20Onc55,%20S38.pdf)

Abstract: Prophylactic oophorectomy is presently the only effective method of ovarian cancer prevention. This study reviews current data on how prophylactic oophorectomy (PO) should be used in different risk groups. It is estimated that 7% of ovarian cancer patients have positive family history, of which 3-9% may end up having hereditary cancer syndromes. Women in direct genetic lineage of family cancer syndromes may have up to 50% lifetime risk of ovarian cancer. Because of such a high risk, PO is indicated for women with familial cancer syndromes after childbearing or the age of 35-40 at the latest. Most women with positive family history of ovarian cancer do not have one of the recognized hereditary cancer syndromes. However, women with one or two affected relatives do have an increased lifetime risk of ovarian cancer from a baseline of 1.6 to 5-7%. This risk is ndt high enough to warrant PO recommendation for a large number of women. After being properly informed and the patient still desires surgical prevention (i.e., cancer phobia), PO then becomes an indicated procedure. In women without family history of ovarian cancer, the role of PO remains controversial. The decision of PO as a concurrent procedure to other indicated gynecologic surgeries should depend on the individual patient and her ability to comply with lifelong estrogen replacement therapy. (C) 1994 Academic Press, Inc.

Keywords: Familial Ovarian-Cancer, Women

# Title: Gynaecological Endoscopy

Full Journal Title: [Gynaecological Endoscopy](http://www3.interscience.wiley.com/journal/119485086/home)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Khan, K.S., Khan, S.F., Nwosu, C.R., Dwarakanath, L.S. and Chien, P.F.W. (1999), Laparoscopic uterosacral nerve ablation in chronic pelvic pain: An overview. *Gynaecological Endoscopy*, **8** (5), 257-265.

Full Text: [1999\Gyn End8, 257.pdf](1999/Gyn%20End8,%20257.pdf)

Abstract: Objective To assess the efficacy of laparoscopic uterine nerve ablation (LUNA) in the treatment of chronic pelvic pain, by means of a systematic overview of the published literature. Design Relevant papers were identified through electronic scanning of MEDLINE (1966 1997), EMBASE (1980m 1997), the Science Citation Index and the Cochrane Library and manual searching of the bibliography of known primary and review articles. Study selection, study quality assessment and data abstraction were performed independently in duplicate. For controlled studies data were used to generate odds ratios (OR) and their confidence intervals (CI). Subjects These were 555 women included in 11 case series and 250 women included in two controlled observational studies and three randomized trials. Main outcome measure Pain relief measured in general terms or assessed using visual analogue or numeric pain scales. Results In the case of pelvic pain with no visible pathological findings at laparoscopy: randomized studies showed that LUNA had a trend towards better pain relief compared with no surgical intervention (OR 9.4, 95% CI 0.7 to 472; P = 0.9) but its effect was inferior to presacral neurectomy (OR 0.24, 95% CI 0.07 to 0.8; P = 0.01). Where there was endometriosis, controlled non-randomized studies showed that with ablative treatment of endometriosis, the outcomes were better with than without LUNA (OR 36.7, 95% CI 3.9 to 1625; P = 0.001); however, presacral neurectomy did not show better results than LUNA (OR 0.30, 95% CI 0.03 to 1.76; P = 0.1). One randomized controlled study in patients with endometriosis showed that LUNA plus ablative treatment was better than no intervention (OR 5.7, 95% CI 1.6 to 20.3; P = 0.003), an effect that was not apparent in the subgroup with minimal endometriosis (P = 0.24). Conclusion On theoretical grounds, LUNA has the promise of an efficacious intervention in alleviating pelvic pain. However, the pitfalls in the published research that we have identified and evaluated make it impossible for us to conclude that this intervention is universally effective. At best there is a trend indicating effectiveness in relieving primary dysmenorrhoea and mild to moderate endometriosis. For the majority of women with chronic pelvic pain, there is not sufficient evidence to guide therapeutic decision making with regard to laparoscopic uterine nerve ablation.

Keywords: Article, Articles, Assessment, Bibliography, Case Series, Chronic, Chronic Pelvic Pain, Citation, Denervation, Design, Effectiveness, Endometriosis, Intervention, Laser Laparoscopy, Literature, Medical Literature, Medline, Outcomes, Pain, Pelvic Denervation, Primary, Primary Dysmenorrhea, Research, Review, Science, Science Citation Index, Selection, Systematic Review, Treatment, Users Guides, Women

# Title: Gynäkologische Endokrinologie

Full Journal Title: Gynäkologische Endokrinologie

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1610-2894 (Paper) 1610-2908 (Online)

Issues/Year:

Journal Country/Territory:

Language:

Publisher: [Springer-Verlag Heidelberg](http://www.springerlink.com/app/home/main.asp?wasp=cmw7ypruqk7vneg2dr2p)

Publisher Address:

Subject Categories:

: Impact Factor

Borkenhagen, A., Stöbel-Richter, Y. Brähler, E. and Kentenich, H. (2004), Mehrlingsproblem bei Kinderwunschpaaren: Einstellungen und Informationsgrad zur Mehrlingsschwangerschaft, selektiven Mehrlingsreduktion und zum Single-Embryo-Transfer. *Gynäkologische Endokrinologie*, **3** (3), 163-168.

Full Text: [G\Gyn End3, 163.pdf](G/Gyn%20End3,%20163.pdf)

Abstract: Das Mehrlingsproblem ist gegenwärtig eines der schwerwiegendsten der assistierten Fortpflanzung. Zur Reduktion der Mehrlingsraten müssen die Einstellungen und das Wissen von Kinderwunschpaaren zur Mehrlingsproblematik vermehrt Eingang in die reproduktionsmedizinische Behandlung finden. In einem Review werden die Ergebnisse aktueller empirischer Studien zu Einstellungen und Wissen von Kinderwunschpaaren zur Mehrlingsproblematik und -reduktion sowie zum Single-Embryo-Transfer dargestellt. Dazu wurden im Anschluss an eine Recherche in Medline, Psyndex und ausgewählten deutschsprachigen Zeitschriften 9 Studien analysiert, die zwischen 1990 und 2004 publiziert wurden. Die Analyse ergab: 1. Kinderwunschpaare haben eine sehr hohe Präferenz für eine Zwillingsschwangerschaft und eine hohe bis mittlere Präferenz für eine Drillingsschwangerschaft. 2. Mit steigendem Alter der Frau nimmt die Präferenz für eine Mehrlingsschwangerschaft zu. 3. Kinderwunschpatienten haben ein Informationsdefizit bezüglich den Folgen einer Mehrlingsschwangerschaft.

# Title: Haematologica

Full Journal Title: Haematologica

ISO Abbreviated Title: Haematologica

JCR Abbreviated Title: Haematologica

ISSN: 0390-6078

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Journal Country/Territory: Italy

Language: English

Publisher: Ferrata Storti Foundation

Publisher Address: Strada Nuova 134, 27100 Pavia, Italy

Subject Categories:

Hematology: Impact Factor 2.538, 19/60 (2000)

? Crippa, L., D’Angelo, S.V., Tomassini, L., Rizzi, B., D’Alessandro, G. and D’Angelo, A. (1997), The utility and cost-effectiveness of D-DIMER measurements in the diagnosis of deep vein thrombosis. *Haematologica*, **82** (4), 446-451.

Full Text: [1997\Haematologica82, 446.pdf](1997/Haematologica82,%20446.pdf)

Abstract: Background and Objective. The potential utility of D-dimer measurements for the diagnosis of deep vein thrombosis became evident soon after the development of reliable commercial assays. The purpose of this review is to outline some critical aspects affecting cost-effectiveness of D-dimer measurements In the diagnosis of deep vein thrombosis (DVT). Methods. The authors have been working in this field contributing original papers whose data have been used for this study. In addition, the material analyzed in this article includes papers published in the journals covered by the Science Citation Index(R) and MEDLINE(R). Results. D-dimer levels are very sensitive to the process of fibrin formation/dissolution occurring with ongoing thrombosis. However, they may not be highly specific for venous thromboembolism as they are influenced by the presence of comorbid conditions potentially elevating plasma D-dimer (cancer, surgery, infectious diseases). In addition, commercially available ELISA assays, although quantitative and reproducible, cannot be used under emergency conditions because they are time-consuming and suited for batch-processing of plasma samples. Recently, new assays have been introduced which permit fast and quantitative D-dimer estimations in individual patients. We have evaluated the utility of two new rapid assays (LPIA D-dimer, Mitsubishi, and VIDAS D-DIMER, bio-Merieux) in combination with compression real-time-B-mode ultrasonography for the detection of deep vein thrombosis in asymptomatic patients following elective hip replacement and in patients with clinically suspected deep vein thrombosis. In both settings, we identified cut-off values with optimal sensitivity which allow exclusion of deep vein thrombosis in a considerable percentage of patients, with substantial sparing of economic resources. In fact, based on a cost-effectiveness analysis, a diagnostic algorithm combining D-dimers measerement and compression ultrasonography would result in cost-savings ranging from 5% to 55% in patients with high or low clinical pretest probability respectively. However, the specificity of D-dimer measurements for deep vein thrombosis was much higher in symptomatic than in asymptomatic patients. Choice of the cut-off value proved to be dependent on the method as well as on the patient populations studied. Conclusions. The cost-effectiveness of D-dimers measurement in the diagnosis of asymptomatic DVT remains questionable. Conversely, our data strongly support the utility of D-dimers determinations in the diagnosis of symptomatic DVT. In terms of sparing economic resources, the introduction in the clinical laboratory of the rapid quantitative assays would be highly convenient, because they avoid a source of bias in the interpretation of D-dimers results, are easy to perform and do not require dedicated personnel or instrumentation. Prospective management studies validating the utility of D-dimer measurement in the diagnosis of deep vein thrombosis are urgently needed. (C) 1997, Ferrata Storti Foundation.

Keywords: Abdominal-Surgery, Algorithm, Analysis, Antithrombin-Iii Complexes, Authors, B-Mode Ultrasonography, Batch Processing, Bias, Cancer, Clinical, Contrast Venography, Cost Effectiveness, Cost Effectiveness Analysis, Cost Savings, Cost-Effectiveness, Cost-Effectiveness Analysis, D-Dimer, Data, Deep Vein Thrombosis, Development, Diagnosis, Diseases, Economic, Elective, Elisa, Emergency, Fibrin Degradation Products, Field, Hip Replacement, Hip-Surgery, Impedance Plethysmography, Infectious Diseases, Instrumentation, Journals, Latex D-Dimer, Management, Measurement, Papers, Patients, Personnel, Plasma, Plasma D-Dimer, Populations, Potential, Purpose, Review, Sensitivity, Source, Specificity, Support, Surgery, Thromboembolism, Thrombosis, Ultrasonography, Utility, Value, Vein Thrombosis, Venous Thromboembolism, Venous Thrombosis

? Agnelli, G. and Sonaglia, F. (1997), Prevention of venous thromboembolism in high risk patients. *Haematologica*, **82** (4), 496-502.

Full Text: [1997\Haematologica82, 496.pdf](1997/Haematologica82,%20496.pdf)

Abstract: Background and Objective. Venous thromboembolism includes two closely related clinical manifestations: deep vein thrombosis (DVT), more commonly of the lower limbs, and pulmonary embolism. pulmonary embolism is the most common cause of preventable death in hospitalized patients. The definition of the risk factors for venous thromboembolism should allow to adopt the most suitable prophylactic regimen. Determinants for the risk of venous thromboembolism are patient risk factors, both clinical and molecular, and the clinical setting. In this article the prophylactic regimens most widely employed in the prevention of venous thromboembolism in high-risk clinical settings will be reviewed. Then, the available guidelines for the management of thrombophilic patients will be given. Information sources. The authors have been working in this field contributing original papers. In addition, the material examined in this review article includes papers published in the journals covered by the Science Citation Index(R) and Medline(R). State of art and Perspectives. Pharmacological prophylaxis is an effective approach for reducing morbidity and mortality from venous thromboembolism. Nevertheless, prophylaxis for venous thromboembolism is under employed because the incidence of venous thromboembolism is underestimated and there is fear of bleeding side effects. Adopting the proper prophylactic strategy for venous thromboembolism requires defining the patient risk factor. Determinants for the risk of venous thromboembolism are patient risk factors, both clinical and molecular, and the clinical setting. The risk connected with the clinical setting is the only risk defined by properly performed epidemiological studies. High-risk clinical settings are major orthopedic surgery, elective neurosurgery, spinal cord injury, cancer surgery and multiple trauma. The most effective anticoagulant regimens in the prevention of venous thromboembolism in high-risk patients are adjusted-dose unfractionated heparin, low molecular weight heparins (LMWHs) and oral anticoagulants. LMWHs are as effective and safe as the other two agents, but they do not require laboratory monitoring. On the other hand, LMWHs are more expensive than unfractionated heparin and warfarin. The use of effective agents still leaves the patients with a high prevalence of venous thromboembolism. Hence the search for more effective agents such as selective thrombin inhibitors like hirudin and its analogues. In patients undergoing elective hip surgery, hirudin has been recently shown to be more effective than low-dose unfractionated heparin and the LMWH enoxaparin. (C) 1997, Ferrata Storti Foundation.

Keywords: Anticoagulant, Bleeding, Calf Thrombosis, Cancer, Citation, Deep Vein Thrombosis, Deep-Vein Thrombosis, Heparin, High Risk, High-Risk, Hirudin, Journals, Knee Surgery, Lmwhs, Low-Dose Heparin, Low-Molecular-Weight, Major Trauma, Management, Mortality, Neurosurgery, Prevalence, Pulmonary Embolism, Pulmonary-Embolism, Review, Risk, Risk Factors, Science, Subcutaneous Heparin, Surgery, Surgical Patients, Thrombosis, Total Hip-Replacement, Trauma, Venous Thromboembolism, Warfarin

? Pengo, V., Zasso, A., Barbero, F., Garelli, E. and Biasiolo, A. (1997), Low intensity warfarin therapy. *Haematologica*, **82** (6), 710-712.

Full Text: [1997\Haematologica82, 710.pdf](1997/Haematologica82,%20710.pdf)

Abstract: Background and Objective. Several studies comparing different intensities of oral anticoagulant treatment have clearly shown a relationship between bleeding complications and prolongation of prothrombin time. In the early ‘50s, de Takats suggested that low-dose oral anticoagulants might be as effective as higher doses in preventing thrombosis, at a lower risk of bleeding. This review article examines the potential of low dose warfarin therapy. information sources. The authors have been working in this field, contributing original papers. In addition, the material examined in this article includes articles published in the journals covered by the Science Citation Index(R) and Medline(R). State of art and Perspectives. The hypothesis that low-dose oral anticoagulants can be effective in preventing thrombosis was first proven by experiments in animal models, and showed that a prothrombin time ratio as low as 1.14 using rabbit brain thromboplastin was still able to confer some inhibition of experimental thrombosis. Low-dose or very low-dose warfarin were subsequently demonstrated to be effective in patients with morbid obesity and decreased antithrombin III functional and antigenic levels, in patients with indwelling catheters, in patients undergoing gynecological surgery, as well as in patients with stage IV breast cancer. Low-dose warfarin is also effective in the prevention of embolic strokes in patients with non-rheumatic atrial fibrillation. However, older patients (>75 years), who have a very high risk of bleeding, might be safer taking a very low dose of warfarin (i.e., a daily dose of 1-1.25 mg). Moreover, after a period of run-in, a fixed, very low-dose warfarin schedule does not need further laboratory control, which is a factor that could contribute to the full acceptance of treatment by patients and could stimulate a broader prescription of warfarin for the primary prevention of stroke in older patients with nonrheumatic atrial fibrillation. Therefore, we have organized a multicenter clinical trial in which 1000 patients with non-rheumatic atrial fibrillation will be randomized to receive either a fixed mini-dose of warfarin or a standard dose. Positive results might permit the treatment of most older patients with non-rheumatic atrial fibrillation, creating a benefit for the community as a consequence of its effective prevention of disabling strokes. (C) 1997, Ferrata Storti Foundation.

Keywords: Animal Models, Anticoagulant Treatment, Articles, Atrial-Fibrillation, Brain, Cancer, Citation, Heart-Valves, High Risk, High-Risk, Journals, Low-Dose Warfarin, Models, Oral Anticoagulant-Therapy, Primary, Rabbits, Review, Risk, Science, Stroke, Surgery, Therapy, Thromboplastin, Thrombosis, Treatment, Trial, Warfarin

? Berrettini, M. (1997), Anticoagulation clinics: The Italian experience. *Haematologica*, **82** (6), 713-717.

Full Text: [1997\Haematologica82, 713.pdf](1997/Haematologica82,%20713.pdf)

Abstract: Background and Objective. The clinical quality of oral anticoagulant therapy (OAT) depends on how successful physicians and patients are in achieving and maintaining levels of anticoagulation capable of preventing thromboembolic events without increasing the risk of hemorrhagic complications. Concerning the patient, education and compliance are the major problems. As for the physician, on the other hand, the management of patients receiving OAT is a complex task that requires frequent laboratory testing, dosage regulation, prompt diagnosis and treatment of thromboembolic and hemorrhagic events. It requires educated and skilled personnel and a well-organized framework of services. Anticoagulation clinics, which provide patient education, close monitoring of prothrombin time and continuous clinical surveillance, may help in improving the overall quality of OAT. Information sources. The authors have been working in this field contributing, original papers. In addition, the material examined in this article includes articles published in the journals covered by the Science Citation index(R) and Medline(R). State of art and Perspectives. The concept of a coordinated network of medical services specifically devoted to the control of OAT was developed in the Netherlands following the model created by the late Professor Jordan, who in 1949 founded the first thrombosis center at the University of Utrecht. Many other anticoagulant clinics were organized on a voluntary basis in the following decades in the Netherlands. The Dutch Federation of Thrombosis Centers was founded in 1971 and each affiliated Center is formally recognized and supported by the central Government. Today, there is a nation-wide system of regionally centralized anticoagulant control for outpatients and home patients that counts approximately 70 anticoagulant clinics (thrombosis centers), covering more than 90% of the country. Similar global approaches to the management of patients receiving OAT were proposed in other countries. In the 1950’s, a group of internists and surgeons at the University of Michigan, USA, developed a unit specifically devoted to the diagnosis and treatment of thromboembolic disease, and proposed common strategies, teaching and research programs. In 1959, Sevitt and Gallagher were the first to propose a formal recognition of an anticoagulant unit in Great Britain. Finally, the Italian Federation of Centers for the Surveillance of Anticoagulant (FCSA) therapies was founded in 1989. Nowadays, Italian anticoagulation clinics operating in the framework of the FCSA are still voluntary organizations which provide a specific medical service by continuously reorganizing the personnel, structures and resources available to meet increasing demands. Since OAT has a profound social impact, its control should not be left to the good will of dedicated people, but should instead represent a specific task of the public health system. The achievement of a formal recognition of federated centers is essential for their growth, but the unavoidable increase of the expenses needed to support anticoagulation clinics is difficult to bear in a public care system which is currently facing a substantial reduction of financial resources. In a fixed health care budget, a redistribution of existing resources is the only possible solution, but to achieve this goal, public authorities have to be convinced that the management of OAT in specific anticoagulation clinics is cost-effective. A more accurate estimate of costs is needed and should be performed by the FCSA. Finally, the FCSA should strengthen its contacts with patient organizations and other scientific associations in order to develop common action strategies for improving the quality of OAT. (C) 1997, Ferrata Storti Foundation.

Keywords: Anticoagulant, Anticoagulation, Anticoagulation Clinic, Articles, Bleeding, Citation, Coagulation, Complex, Costs, Diagnosis, Education, Global, Growth, Health, Health Care, Impact, Journals, Management, Medical, Model, Netherlands, Public Health, Reduction, Regulation, Research, Risk, Science, System, Task, Therapy, Thrombosis, Treatment, University, USA

? Arcese, W., Aversa, F., Bandini, G., De Vincentiis, A., Falda, M., Lanata, L., Lemoli, R.M., Locatelli, F., Majolino, I., Zanon, P. and Tura, S. (1998), Clinical use of allogeneic hematopoietic stem cells from sources other than bone marrow. *Haematologica*, **83** (2), 159-182.

Full Text: [1998\Haematologica83, 159.pdf](1998/Haematologica83,%20159.pdf)

Abstract: Background and Objective. Peripheral blood stem cells (PBSC) are being increasingly used as an alternative to conventional allogeneic bone marrow (BM) transplantation. This has prompted the Working Group on CD34-Positive Hematopoietic Cells to evaluate the current utilization of allogeneic PBSC in clinical hematology. Evidence and information Sources. The method employed for preparing this review was that of informal consensus development. Members of the Working Group met three times, and the participants at these meetings examined a list of problems previously prepared by the chairman. They discussed the single points in order to reach an agreement on different opinions and eventually approved the final manuscript. Some of the authors of the present review have been working in the field of stem cell transplantation and have contributed original papers in peer-reviewed journals. In addition, the material examined in the present review includes articles and abstracts published in journals covered by the Science Citation index(R) and MEDLINE(R). State of the Art. Review of the current literature shows that unmanipulated allogeneic PBSC give prompt and stable engraftment in HLA-identical sibling recipients. Despite the much higher number of T-cells infused, the incidence and severity of acute GVHD after PBSC transplant seems comparable to that observed with bone marrow (BM) cells. In comparison to the latter, PBSC probably ensure faster immunologic reconstitution in the early post-transplant period. Controversial results on the incidence and severity of acute-GVHD have been reported when CD34(+) selection methods are used. Prospective randomized trials are underway to compare the results of PBSC and BM allogeneic transplantation. In mismatched family donor transplants, T-cell depleted PBSC successfully engraft immune-myeloablated recipients through a megacell-dose effect able to overcome the HLA barrier. Experience with PBSC in the context of unrelated donor transplants is currently anecdotal and prospective trials should be completed before that practice becomes routine. Finally, there is also limited evidence that, following induction chemotherapy, the addition of PBSC to donor lymphocyte infusion (DLI) for treatment of leukemia relapse after BMT may improve the safety and effectiveness of DLI itself. Concerning cord blood (CB) transplants, the most interesting aspects are the ease of CB collection and storage, the low risk of viral contamination and the low immune reactivity of CB cells. This last property has its clinical counterpart in an apparently reduced incidence and severity of acute GVHD both in sibling and unrelated CB transplants, probably making the level of donor/recipient HLA disparity acceptable a greater degree with respect to what is required for transplants from other sources.

Keywords: Allogeneic, Allogeneic Transplantation, Alternative, Authors, Barrier, Blood, Bone, Bone Marrow, Cell Transplantation, Chemotherapy, Chronic Myelogenous Leukemia, Chronic Myeloid-Leukemia, Clinical, Collection, Colony-Stimulating Factor, Comparison, Consensus, Contamination, Context, Conventional, Cord Blood, Cord-Blood, Development, Disparity, Donor Leukocyte Infusions, Effectiveness, Evidence, Family, Field, Graft-Versus-Host Disease, Graft-Versus-Leukemia, Hematopoietic Stem Cells, Hla-Identical Siblings, Immune, Incidence, Induction, Information, Infusion, Journals, Leukemia, Literature, Long-Term Persistence, Low Risk, Methods, Opinions, Papers, Peer Reviewed Journals, Peer-Reviewed, Peripheral Blood, Practice, Property, Prospective, Randomized, Relapse, Review, Risk, Safety, Sources, Stem Cell, Stem Cell Transplantation, Stem Cells, Storage, T-Cell, Total-Body Irradiation, Transplantation, Transplants, Treatment, Umbilical-Cord-Blood, Utilization, Viral

? Prandoni, P., Piccioli, A. and Girolami, A. (1999), Cancer and venous thromboembolism: An overview. *Haematologica*, **84** (5), 437-445.

Full Text: [1999\Haematologica84, 437.pdf](1999/Haematologica84,%20437.pdf)

Abstract: Background and Objective. Although the relationship between malignant diseases and venous thromboembolism has been convincingly demonstrated, the clinical implications of this association still have to be thoroughly elucidated. The aim of this study was to review briefly the mechanisms by which cancer may induce the development of thrombosis and to analyze critically the most recent clinical advances in this field. Evidence and Information Sources. The material examined in the present review includes articles published in Journals covered by the Science Citation Index(R) and Medline(R). State of the Art. Neoplastic cells can activate the clotting system directly, thereby generating thrombin, or indirectly, by stimulating mononuclear cells to synthesize and express various procoagulants. Cancer cells and chemotherapeutic agents can injure endothelial cells, thereby intensifying hypercoagulability. Currently, primary prevention of venous thrombosis should be considered for cancer patients during and immediately after chemotherapy, when long-term indwelling central venous catheters are placed, during prolonged immobilization from any cause, and following surgical interventions. Secondary prevention of recurrent venous thromboses usually necessitates long-term anticoagulation. In some patients with cancer the condition is resistant to warfarin, and longterm adjusted high-dose heparin is required. The diagnosis of venous thromboembolism may help to uncover previously occult carcinoma by prompting a complete physical examination and a few routine tests. Perspectives. Further investigations are required to evaluate the cost-benefit ratio of extensive diagnostic screening for occult malignancy in all patients presenting with idiopathic venous thromboembolism, and to explore the potential of low molecular weight heparins for improving survival in patients with cancer. (C)1999, Ferrata Storti Foundation.

Keywords: Acute Pulmonary-Embolism, Anticoagulation, Articles, Cancer, Chemotherapy, Citation, Clinical Course, Deep-Vein-Thrombosis, Development, Diagnosis, Endothelial Cells, Evidence, Heparin, Immobilization, Journals, Low Molecular Weight Heparin, Low-Dose Warfarin, Low-Molecular-Weight, Mechanisms, Metastatic Breast-Cancer, Occult Cancer, Primary, Randomized Trial, Review, Science, Screening, Sources, Standardization Committee, System, Thrombosis, Tumor Procoagulants, Venous Thromboembolism, Warfarin

? Grignani, G. and Maiolo, A. (2000), Cytokines and hemostasis. *Haematologica*, **85** (9), 967-972.

Full Text: [2000\Haematologica85, 967.pdf](2000/Haematologica85,%20967.pdf)

Abstract: Background and Objectives. Cytokines are low molecular weight polypeptides that act as pleiotropic mediators of inflammation and may contribute significantly to regulation of hemostatic balance in both physiologic and pathologic conditions. The purpose of this review is to underline the most significant progresses recently achieved in this rapidly growing area. Design and Methods. The authors have been involved both at home and abroad in experimental and clinical research in this held for years and have contributed original papers in peer-reviewed journals. In addition, the material examined in the present review includes articles published in journals covered by the Science Citation Index and Medline. Results. Tissue factor, a transmembrane glycoprotein that serves as a surface receptor for coagulation factor VIIa, plays a key role in the initiation of coagulation processes. Very little, if any, tissue factor activity is detectable in normal conditions on the cell surface of monocytes and endothelial cells. However, upon proper stimulation by a number of agents such activity may be expressed in these cells, which can then contribute significantly to clotting activation. Pro inflammatory cytokines. Interleukin-1(IL-1), IL-6 and tumor necrosis factor (TNF) are effective inducers of tissue factor upregulation and may trigger endothelial cells to change their antithrombotic properties into a procoagulant, clot-promoting state. Indeed, much experimental and clinical evidence has been accumulated to suggest that cytokines play a key role in the pathophysiology of hemostatic abnormalities in different disease states. These include, inter alia, the coagulopathy observed during septicemia, the veno occlusive disease of the liver after bone marrow transplantation, the prothrombotic state associated with atherosclerotic vessels, the occurrence of deep venous thrombosis after major abdominal surgery and the thrombotic tendency of patients with cancer. Several new antithrombotic strategies based on these new concepts have been attempted in experimental models of thrombosis and also in man. Examples of new possible antithrombotic agents are the tissue factor pathway inhibitor, Fab fragments of monoclonal antibodies directed against factor VII or factor VIIa, mutant forms of biologically inactive tissue factor and inhibition of cytokines involved in the regulation of tissue factor expression. Many of these studies have produced positive or interesting results, although more must be learned before the appropriate drug and the adequate dose are defined in the different clinical situations. Conclusions. Pro-inflammatory cytokines (IL-1, IL-6 and TNF) play a key role in tissue factor expression on monocytes and on endothelial cells and contribute significantly to regulation of hemostatic balance in physiologic and pathologic conditions. This effect is of great interest from both speculative and practical viewpoints. (C) 2000, Ferrata Storti Foundation.

Keywords: Activation, Articles, Blood-Coagulation, Bone-Marrow Transplantation, Cancer, Change, Citation, Clinical Research, Coagulation, Cytokines, Design, Disseminated Intravascular Coagulation, Endothelial Cells, Endothelial-Cells, Experimental Endotoxemia, Hemostasis, Human Cancer-Cells, Journals, Medline, Models, Monocytes, Occurrence, Play, Positive, Primary Antiphospholipid Syndrome, Procoagulant Activity, Regulation, Research, Review, Science, Science Citation Index, State, Surgery, Tissue Factor, Tissue Factor Pathway, Transplantation, Tumor-Necrosis-Factor

? Curti, M., Pistotti, V., Gabutti, G. and Klersy, C. (2001), Impact factor and electronic versions of biomedical scientific journals. *Haematologica*, **86** (10), 1015-1020.

Full Text: [2001\Haematologica86, 1015.pdf](2001/Haematologica86,%201015.pdf)

Abstract: Background and Objectives. The development of electronic editions of scientific journals and the rapid spread of scientific information might modify the pattern the bibliographic citations, and thus the impact factor and quality of journals. We assessed changes in the impact factor over years of a number of journals and whether the presence of an electronic version of the journal was associated with the impact factor score.

Design and Methods. This is a retrospective longitudinal study. The availability of journals (table of contents (TOC), abstracts, full text and free full text) on Internet, in years 1995-2000, was assessed between December 2000 and January 2001. The first 20 top-journals from 8 subject categories were included. Changes in impact factor overtime and association with Internet availability were modeled.

Results. Overall, 118/139 journals (85%) had their TOC on the Internet, of these 107 (77%) had abstracts, 97 (70%) had full text and 33 (24%) free full text. The median impact factor for all journals was 1.65, 2.08, 2.10, 2.21 and 2.35 for the years from 1995 to 1999, respectively. This increase was statistically significant, with differences among subject categories. The presence of TOC, abstracts and full text on the Internet was also significantly associated with higher impact factor, after accounting for time and subject category.

Interpretation and Conclusions. The impact factor has been used for assessing the quality of journals. We identified a new limitation of this indicator: the impact factor seems to be related to the amount of circulation of information through Internet. This could be a temporary limitation, associated with diffusion of journals on, and spread of Internet. (C) 2001, Ferrata Storti Foundation.

Keywords: Internet, Impact Factor, Scientific Documentation

? Bocchia, M., Bronte, V., Colombo, M.P., De Vincentiis, A., Di Nicola, M., Forni, G., Lanata, L., Lemoli, R.M., Massaia, M., Rondelli, D., Zanon, P. and Tura, S. (2000), Antitumor vaccination: Where we stand. *Haematologica*, **85** (11), 1172-1206.

Full Text: [2000\Haematologica85, 1172.pdf](2000/Haematologica85,%201172.pdf)

Abstract: Background and Objectives, Vaccination is an effective medical procedure of preventive medicine based on the induction of a long-lasting immunologic memory characterized by mechanisms endowed with high destructive potential and specificity. In the last few years, identification of tumor-associated antigens (TAA) has prompted the development of different strategies for antitumor vaccination, aimed at inducing specific recognition of TAA in order to elicit a persistent immune memory that may eliminate residual tumor cells and protect recipients from relapses. In this review characterization of TAA, different potential means of vaccination in experimental models and preliminary data from clinical trials in humans have been examined by the Working Group on Hematopoietic Cells. Evidence and Information Sources. The method employed for preparing this review was that of informal consensus development. Members of the Working Group met four times and discussed the single points, previously assigned by the chairman, in order to achieve an agreement on different opinions and.-approve the final manuscript. Some of the authors of the present review have been working in the field of antitumor immunotherapy and have contributed original papers to peer-reviewed journals. In addition, the material examined in the present review includes articles and abstracts published in journals covered by the Science Citation Index and Medline. State of the art The cellular basis of antitumor immune memory consists in the generation and extended persistence of expanded populations of T- and B-lymphocytes that specifically recognize and react against TAA. The efficacy of the memory can be modulated by compounds, called “adjuvants”, such as certain bacterial products and mineral oils, cytokines, chemokines, by monoclonal antibodies I triggering cc-stimulatory receptors. Strategies that have been shown in preclinical models to be efficient in protecting from tumor engraftment, or in preventing a tumor rechallenge, include vaccination by means of soluble proteins or peptides, recombinant viruses or bacteria as TAA genes vectors, DNA injection professional antigen-presenting cells, namely dentritic cells, either pulsed with TAA or transduced with or-specific genes, provides a useful alternative for inducing antitumor cytotoxic activity. Some of le approaches have been tested in phase I/II clinical trials in hematologic malignancies, such as lymphoproliferative diseases or chronic myeloid leukemia, and in solid tumors, such as melanoma, colon cancer, prostate cancer and renal cell carcinoma types of vaccines, use of adjuvants, : of vaccination as well as selection of patients eligible for this procedure are discussed in this as. Perspectives. Experimental models demonstrate the possibility of curing cancer through the active induction of a specific immune response to TAA. However, while pre-clinical research has identified several possible targets and strategies for tumor vaccination the clinical scenario is far more complex for a number of possible reasons. Since experimental data suggest that vaccination is more likely to be effective on small tumor burden, such as a minimal residual disease after conventional treatments, or tumors at an early stage of disease, better selection of patients allow more reliable clinical results to be obtained. a poor correlation is frequently observed the ability of TAA to induce a T-cell response vitro and clinical responses. Controversial findings may also be due to the techniques used for monitoring the immune status. Therefore, the development reliable assays for efficient monitoring; of the state of immunization of cancer patients against TAA is an important goal that will markedly improve the progress of antitumor vaccines. Finally, given the promising results, identification of new or mutated involved in neoplastic events might provide the opportunity to vaccinate susceptible subjects against foreseeable cancer in the next future. (C)2000, Ferrata Storti Foundation.

Keywords: Active Specific Immunotherapy, Adjuvants, Alternative, Antibodies, Antigen-Presenting Cells, Antitumor Vaccination, Art, Authors, Autologous Melanoma-Cells, Bacteria, Burden, Cancer, Characterization, Chronic, Chronic Myelogenous Leukemia, Chronic Myeloid-Leukemia, Citation, Clinical, Clinical Trials, Colony-Stimulating Factor, Consensus, Conventional, Correlation, Cytokines, Cytotoxic T-Lymphocytes, Data, Development, Disease, Diseases, DNA, Efficacy, Established Pulmonary Metastases, Events, Experimental, Field, Generation, Genes, Hematologic, Human Dendritic Cells, Humans, Identification, Immune, Immune Response, Immunization, Immunotherapy, Induction, Journals, Leukemia, Mechanisms, Medical, Medicine, Melanoma, Memory, Models, Monitoring, NOV, Opinions, Papers, Patients, Peer Reviewed Journals, Peer-Reviewed, Persistence, Populations, Potential, Pre-Clinical, Procedure, Progress, Prostate Cancer, Proteins, Renal, Research, Review, Scenario, Science, Science Citation Index, Small, Specificity, State, Techniques, Tumor, Tumor-Necrosis-Factor, Vaccination, Vaccines

# Title: Handbook of Nonlinear Regression Models

Marcel Dekker, New York

Ratkowsky, D.A. (1990), *Handbook of Nonlinear Regression Models*, Marcel Dekker, Inc. New York.

# Title: Handbook on the Toxicology of Metals

Elsevier, Amsterdam

Beijer, K. and Jernel饘, A. (1979), *Handbook on the Toxicology of Metals* (Edited by Friberg, L., Nordberg, G.F. and Vouk, V.B.), Elsevier, Amsterdam, 47-63, 197-207.

# Title: Harmful Algae

Full Journal Title: [Harmful Algae](http://www.sciencedirect.com/science/journal/15689883)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1568-9883

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ross, G., Haghseresht, F. and Cloete, T.E. (2008), The effect of pH and anoxia on the performance of Phoslock®, a phosphorus binding clay. *Harmful Algae*, **7** (4), 545-550.

Full Text: [2008\Har Alg7, 545.pdf](2008/Har%20Alg7,%20545.pdf)

Abstract: This study examined the adsorption of phosphate by Phoslock, a lanthanum modified clay, by investigating the effect of solution pH and presence of algal mass on its kinetic behavior. In addition, the effect of anoxic conditions on its ability to retain the adsorbed phosphate was studied. It was found that Phoslok(R) was most effective at pH values between 5 and 7, and the adsorption capacity decreased above pH 9. The adsorption capacity was lower in algae-containing lake water than in prepared reverse osmosis water solutions. The phosphorus was not released from the Phoslock(R) under anoxic conditions. (C) 2007 Elsevier B.V. All rights reserved.

Keywords: Anoxia, Adsorption Capacity, Kinetics, Ph, Phoslock, Aqueous-Solutions, Removal, Sorbents, Sorption, Ions, Salt

# Title: Harvard Review of Psychiatry

Full Journal Title: Harvard Review of Psychiatry

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hunt, G.E., Cleary, M. and Walter, G. (2010), Psychiatry and the Hirsch h-index: The relationship between journal impact factors and accrued citations. *Harvard Review of Psychiatry*, **18** (4), 207-219.

Full Text: [2010\Har Rev Psy18, 207.pdf](2010/Har%20Rev%20Psy18,%20207.pdf)

Abstract: There is considerable debate on the use and abuse of journal impact factors and on selecting the most appropriate indicator to assess research outcome for an individual or group of scientists. Internet searches using Web of Science and Scopus were conducted to retrieve citation data for an individual in order to calculate nine variants of Hirsch’s h-index. Citations to articles published in a wide range of psychiatric journals in the periods 1995-99 and 2000-05 were analyzed using Web of Science. Comparisons were made between journal impact factor, h-index of citations from publication to 2008, and the proportion of articles cited at least 30 or 50 times. For up to 14 years post-publication, there was a strong positive relationship between journal impact factor and h-index for citations received. Journal impact factor was also compared to the percentage of articles cited at least 30 or 50 times a comparison that showed wide variations between journals with similar impact factors. This study found that 40%-50% of the articles published in the top ten psychiatry journals ranked by impact factor acquire 30 to 50 citations within ten to fifteen years. Despite certain flaws and weaknesses, the h-index provides a better way to assess long-term performance of articles or authors than using a journal’s impact factor, and it provides an alternative way to assess a journal’s long-term ranking. (HARV REV PSYCHIATRY 2010;18:207-219.).

Keywords: Authors, Citations, Google-Scholar, h-Index, Impact Factor, Indicators, Journal, Journal Impact Factor, Psychiatry, Psychiatry Journals, Publication, Quality, Research, Researchers, Science, Scientists, Scopus, Standard Bibliometric Measures, Web, Web of Science, Web-of-Science

? Freire, R.C., Perna, G. and Nardi, A.E. (2010), Panic disorder respiratory subtype: Psychopathology, laboratory challenge tests, and response to treatment. *Harvard Review of Psychiatry*, **18** (4), 220-229.

Full Text: 2010\Har Rev Psy18, 220.pdf

Abstract: Objective: Our objective is to summarize the new findings concerning the respiratory subtype (RS) of panic disorder (PD) since its first description. Methods: Two searches were made in the Institute for Scientific Information Web of Science: with the keywords “panic disorder” and “respiratory symptoms,” and all articles that cited Briggs and colleagues’ 1993 article “Subtyping of Panic Disorder by Symptom Profile” (Br J Psychiatry 1993;163:201-9). Altogether, 133 articles were reviewed. Results: We describe and discuss RS epidemiology, genetics, psychopathology, demographic features, clinical features, correlations with the respiratory system, traumatic suffocation history, provocative tests, and nocturnal panic. Compared to patients with the nonrespiratory subtype (non-RS), the RS patients had higher familial history of PD, lower comorbidity with depression, longer duration of illness, lower neuroticism scores, and higher scores in severity scales, such as the Panic and Agoraphobia Scale, Panic-Agoraphobia Spectrum scale and the Clinical Global Impression scale. Tests to induce panic attacks, such as those with CO(2), hyperventilation, and caffeine, produce panic attacks in a higher proportion of RS patients than non-RS patients. Differences in the subtypes’ improvement with the pharmacologic treatment were found. There are also some controversial findings regarding the RS, including the age of onset of PD, and alcohol and tobacco use in RS patients. Conclusions: Some characteristics, such as the increased sensitivity to CO2 and the higher familial history of PD, clearly distinguish the RS from the non-RS. Nevertheless, there are also controversial findings. More studies are needed to determine the validity of the RS subtype. (HARV REV PSYCHIATRY 2010;18:220-229.).

Keywords: 35-Percent Carbon-Dioxide, Alcohol, Attacks, Caffeine, Caffeine Challenge, Carbon Dioxide, Clinical-Features, Co2, Co2 Challenge, Comorbidity, Depression, Disorder, Dyspnea-Fear Theory, Epidemiology, Genetics, History, Methods, Nocturnal Panic Attacks, Panic Attacks, Panic Disorder, Phobic Anxiety, Psychiatry, Pulmonary-Function, Respiratory Symptom, Scale, Science, Scientific Information, Sodium Lactate, Symptom Dimensions, Tobacco, Traumatic Suffocation, Treatment, Validity, Web of Science

# Title: Hautarzt

Full Journal Title: Hautarzt

ISO Abbreviated Title: Hautarzt

JCR Abbreviated Title: Hautarzt

ISSN: 0017-8470

Issues/Year: 12

Journal Country/Territory: Germany

Language: English

Publisher: Springer Verlag

Publisher Address: 175 Fifth Ave, New York, NY 10010

Subject Categories:

Dermatology & Venereal Diseases: Impact Factor

? Platschek, H. and Lubach, D. (1989), Brown discoloration of hair and nails by water with high iron content. *Hautarzt*, **40** (7), 441-442.

Iliev, D., Furrer, L. and Elsner, P. (1998), Estimating the quality of life of dermatologic patients. *Hautarzt*, **49** (6), 453-456.

Full Text: [H\Hautarzt49, 453.pdf](H/Hautarzt49,%20453.pdf)

Abstract: A judgement on the patient’s quality of life cannot be based solely on the information about the clinical severity of a disease.Very often there is no correlation between these parameters.lt is necessary to assess the quality of life by a health status questionnaire since non-life threatening diseases common in dermatology influence the quality of life very much.The most frequently used questionnaires are the SF-36 and the Nottingham Health Profile. However, these forms do not evaluate all dermatologic patients adequately.Therefore specific tools such as the DLQI (Dermatology Life Quality Index) and Skindex have been established for dermatology. Further disease-specific questionnaires have been created to measure time related changes in dermatological patients.

Keywords: Nottingham Health Profile, Of-Life, Clinical-Trials, IQOLA Project, SF-36, Rhinoconjunctivitis, Questionnaire, Disability, Quality of Life, SF-36, Nottingham Health Profile, Skindex, DLQI, Health Status

# Title: Hazardous and Industrial Wastes

Hazardous and Industrial Wastes: Proceeding of the Mid-Alantic Industrial Wastes

Nonavinakere, S. and Reed, B.E. (1996), Fly ash enhanced metal removal process. *Hazardous and Industrial Wastes*, **27**, 588-599.

# Title: Hazardous Waste Consultant

Full Journal Title: [Hazardous Waste Consultant](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=07380232)

ISO Abbreviated Title: Hazard. Waste Consult.

JCR Abbreviated Title: Hazardous Waste Cons

ISSN: 0738-0232

Issues/Year: 7

Journal Country/Territory: United States

Language: English

Publisher: Elsevier Science Inc

Publisher Address: 655 Avenue of the Americas, New York, NY 10010

Subject Categories:

Engineering, Environmental: Impact Factor

Green, D.H. *et al.* (1994), Peat moss beads remove metals from waste-water. *Hazardous Waste Consultant*, **12** (2), 1.19-1.21.

Full Text: [H\Haz Was Con12, 1.19.pdf](H/Haz%20Was%20Con12,%201.19.pdf)

? (1994), New incinerator and furnace enhance hazardous-waste treatment capabilities at Canadian facility. *Hazardous Waste Consultant*, **12** (1), A16-A20.

? Cooper, D. and Whittaker, H. (1994), New adsorption microfiltration method enhances arsenic removal from water. *Hazardous Waste Consultant*, **12** (3), A3-A6.

? (1994), EPA provides guidance on estimating health risks from incinerator emissions. *Hazardous Waste Consultant*, **12** (3), D21-D23.

? (1994), Hydrogen-peroxide or ozone injection may improve incinerator DRE without boosting NOX. *Hazardous Waste Consultant*, **12** (4), A36-A37.

? (1994), Risk assessment plan for WTI incinerator reviewed. *Hazardous Waste Consultant*, **12** (4), B28.

? (1994), Supreme-court rules municipal incinerator ash is not exempt from RCRA. *Hazardous Waste Consultant*, **12** (4), C1-C3.

? Price, J. and Sinback, T. (1994), Westinghouse incinerator destroys dioxins with support of local-community. *Hazardous Waste Consultant*, **12** (5), A5-A8.

? (1994), More BIF and incinerator violations cited, settled. *Hazardous Waste Consultant*, **12** (5), C7-C11.

? (1994), Solid-waste equipment used to process incinerator feed. *Hazardous Waste Consultant*, **12** (7), A35-A37.

(1997), First explosives-only incinerator in commercial operation. *Hazardous Waste Consultant*, **15** (1), A8-A10.

Full Text: [H\Haz Was Con15, A8.pdf](H/Haz%20Was%20Con15,%20A8.pdf)

? (1999), Supercritical water oxidation offers viable alternative to incinerator upgrade. *Hazardous Waste Consultant*, **17** (1), A11-A13.

Full Text: [1999\Haz Was Con17, A11.pdf](1999/Haz%20Was%20Con17,%20A11.pdf)

# Title: Hazardous Waste & Hazardous Materials

Full Journal Title: Hazardous Waste & Hazardous Materials

ISO Abbreviated Title: Hazard. Waste Hazard. Mater.

JCR Abbreviated Title: Hazard Waste Hazard Mater

ISSN: 0882-5696

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Mary Ann Liebert Inc Publ, Larchmont

Publisher Address:

Subject Categories:

: Impact Factor

Khan, J.A., Pal, D. and Morse, J.S. (1993), Numerical modeling of a rotary kiln incinerator. *Hazardous Waste & Hazardous Materials*, **10** (1), 81-95.

Abstract: A computational modelling study is performed for a full-scale rotary kiln incinerator, using the commercial fluid mechanics code FLUENT. The coordinate system is three-dimensional, and turbulence and buoyancy are also modelled. A global one-step reaction is used for methane combustion. Heat transfer modelling is limited to conduction and convection. The leak air locations and flowrates, as well as the heat flux at the kiln walls are varied to study their effects on the kiln operation. A comparison is made with full-scale kiln data [1-3], and good qualitative agreement is reached. The issue of grid dependence is addressed but not resolved.

Chen, K.S., Tu, J.T. and Chang, Y.R. (1993), Simulation of steady-state heat and mass-transfer in a rotary kiln incinerator. *Hazardous Waste & Hazardous Materials*, **10** (4), 397-411.

Abstract: Simulation is presented for steady-state heat and mass transfer in the combustion chamber of a rotary kiln. The gas-phase region in the chamber is divided into 3x8x4 computational volumes in r-, theta-, and z-coordinates, respectively. Conservations of mass and energy are formulated in each volume, in which convection and radiation transfers coupled with energy balance and volatilization of waste bed are considered with plug flow model. The volatilization rate of wastes is considered by using the volatilization model for a mixture of cellulose and toluene. The governing equations for all computation cells together with the boundary and auxiliary conditions constitute a nonlinear system of equations and are solved numerically. Effects of percentage excess air, rotation speed and inclination angle of the kiln at a fixed waste loading level are examined and discussed. Comparisons between two waste volatilization models are also made.

Cowley, R.J., Gallagher, B.P. and Nee, B.M. (1994), Development and execution of a metals pretest program for a hazardous waste incinerator. *Hazardous Waste & Hazardous Materials*, **11** (1), 31-51.

Abstract: Eastman Kodak Company owns and operates a hazardous waste incinerator at the Kodak Park Site facility, located in Rochester, New York. The incinerator consists of a rotary kiln followed by a secondary combustion chamber. Particulate and HCI control is provided by a quench chamber and a venturi scrubber. In May, 1991, a Trial Burn Plan was submitted for the incinerator as part of the NYS Hazardous Waste Management Facility Permit Application process. A key requirement of the Trial Burn was to demonstrate the hazardous waste incinerator’s ability to control heavy metal emissions. To achieve this, an aqueous metals test protocol was developed to evaluate the incinerator’s metals control capability under worst case conditions. Prior to the actual Trial Burn, an extensive metals pretest program was conducted at the facility to evaluate the incinerator metals control capability as a function of metal species, metals feedrate, waste chlorine content and combustion chamber temperatures. As a result of this program it was demonstrated that the high pressure differential venturi scrubber effectively controls emissions of heavy metals to levels prescribed in USEPA Guidance. Also, the program demonstrated the impact that combustion chamber temperatures and waste chlorine content have on incinerator metals control capability.

Ho, T.C., Lee, H.T., Kuo, T.H., Chen, D. and Bostick, W.D. (1994), Analysis of incinerator performance and metal emissions from recent trial and test burns. *Hazardous Waste & Hazardous Materials*, **11** (1), 53-70.

Abstract: Recent trial-and test-burn data from five rotary kiln incinerator facilities were analyzed for combustion performance and **metal** **emissions**. The incinerator facilities examined included: DuPont’s Gulf Coast Regional Waste Incinerator in Orange, Texas; Chemical Waste Management’s Incinerator in Port Arthur, Texas; Rollins Environmental Service’s Incinerator in Deer Park, Texas; Martin Marietta’s TSCA Incinerator in Oak Ridge, Tennessee; and EPA’s Incineration Research Facility in Jefferson, Arkansas. The analysis involved the use of a PC-based computer program capable of performing material and energy balance calculations and predicting equilibrium compositions based on the minimization of system free energy. For each analysis, the feed data of waste and fuel and the corresponding operating parameters associated with incinerator and/or afterburner operation were input to the program and the program simulated the combustion performance under equilibrium conditions. In the analysis, the field-recorded performance data were compared with the simulated equilibrium results and the incinerator performance, including the quality of the field data, the combustion efficiency, the percent excess air, the heat loss, and the amount of air inleakage, was evaluated. In addition, the field-obtained metal data were analyzed for emission rate and metal balance.

Hinshaw, G.D. (1994), Behavior and control of metals in a hazardous waste incinerator. *Hazardous Waste & Hazardous Materials*, **11** (1), 93-109.

Abstract: In conjunction with a performance test series used to develop trial burn test conditions, supplementary sampling and analysis were performed to study the behavior of metals in an incinerator’s combustion system and the control of metals in the incinerator’s air pollution control equipment (APCE) train. The test incinerator was a Nichols Monohearth primary chamber with an afterburner; APCE consisted of a spray dryer, a cooler/condenser, a venturi scrubber, a baffle-absorber, and a mist eliminator. Multiple metals stack sampling was performed at the inlet to the APCE system, concurrent with incinerator feed and stack sampling. Analysis of these additional samples allowed evaluation of metals partitioning in the combustion system as well as APCE removal efficiencies as a function of chlorine feed concentration and venturi differential pressure. X-Ray diffractometry was applied to selected samples to speciate any crystalline phases present, and scanning electron microscopy with energy dispersive X-ray spectroscopy was used to study the morphology, size, and composition of particles captured via conventional sampling techniques. Arsenic, beryllium, cadmium, chromium, and lead compounds were spiked at known rates, and additionally, several nontoxic metals natively present in the feeds were evaluated as potential surrogates, including copper, iron, titanium, and zinc.

Kafkewitz, D., Armenante, P.M., Hinshalwood, G. and Sanagustin, G. (1994), Immobilization of heavy metals in incinerator ash by the activity of *Desulfovibrio desulfuricans*. *Hazardous Waste & Hazardous Materials*, **11** (4), 519-527.

Abstract: The ash produced by the incineration of domestic refuse contains significant amounts of heavy metals. Because incerator ash is often disposed of by burial in landfills, leaching of the heavy metals into groundwater is an environmental hazard associated with incineration. Although ash is considered to have the potential to be highly toxic, the anaerobic sulfate reducing bacterium Desulfovibrio desulfuricans can grow in the presence of incinerator ash and significantly increase the leach resistance of the lead, cadmium, and chromium that is present in the ash. The data suggest that conditions compatible with microbial sulfidogenesis in landfills may be of value in preventing metal leaching should other containment startegies prove ineffective.

Chen, Y.Y. and Lee, D.J. (1994), A steady-state model of a rotary kiln incinerator. *Hazardous Waste & Hazardous Materials*, **11** (4), 541-559.

Abstract: A simple steady state model for a rotary kiln incinerator operating under excess-air mode is developed and the resulting governing equations are solved numerically. The focus is to examine the effects of some usually ignored factors, including the thermal radiation between all enclosed surfaces in a kiln, the solid/gas reaction and the existence of surface flame, on the kiln behaviour, but to fit all experimental data exactly.

The results demonstrate that, since the length/diameter ratio is small for a rotary kiln incinerator, the thermal radiation heat transfer is the most significant process determinant, and the usually adopted “unity view factor” assumption might introduce serious errors. The effects of other factors, such as heat convection/conduction contributions, the enclosed surface emissivity, and the feed particle size, are only secondary. The thermal radiation exchanges between gas and exposed surfaces are also discussed.

Johnson, L.D., Fuerst, R.G., Logan, T.J., Midgett, M.R., Peterson, M.R., Albritton, J. and Jayanty, R.K.M. (1995), Development of a laboratory method for estimation of hydrogen chloride emission potential of incinerator feed materials. *Hazardous Waste & Hazardous Materials*, **12** (1), 61-69.

Abstract: A laboratory method was developed to provide an estimate of the amount of hydrogen chloride (HCl) gas formed during waste incineration. The method involves heating the waste sample to 900°C in a tube furnace, removing particles from the resulting gases by filtration, collecting HCl gas in a water-filled impinger, and measuring the collected HCl as chloride using ion chromatography. The original goal of this project was to develop and evaluate a method that would allow determining, in the laboratory, the amount of HCl formed upon full-scale incineration of a given hazardous waste feed material. Although the laboratory equipment and procedures performed as designed, the data show that results are very sensitive to materials of construction of the furnace zone, availability of hydrogen, and probably other factors that are difficult to translate accurately from laboratory to full-scale equipment. In particular, the incomplete and variable conversion of inorganic chlorine compounds during incineration makes estimating HCl formation from a real waste highly unreliable. This same variable conversion of inorganic chlorides also makes using any so-called total organochlorine analysis results extremely undependable for estimating HCl emissions. This paper describes the test method developed, the evaluation experiments performed, and the basis for the conclusion that the method is not applicable to accurate prediction of hydrogen chloride emissions from hazardous waste incinerators.

Thomson, M., Lucas, D., Koshland, C.P. and Sawyer, R.F. (1996), Reducing hazardous waste incinerator emissions through blending: A study of 1,1,1-trichloroethane injection. *Hazardous Waste & Hazardous Materials*, **13** (3), 387-398.

Abstract: We investigate whether blending liquid hazardous wastes with hydrocarbons such as alkanes can improve the destruction efficiency and reduce the combustion byproduct levels in the post-flame region of a laboratory scale combustor. Outlet species concentrations are measured with an FTIR spectrometer for mixtures of 1,1,1-trichloroethane and 25% (by volume) dodecane or heptane injected as a spray of droplets. We also inject sprays of liquid pure 1,1,1-trichloroethane, gaseous pure 1,1,1-trichloroethane, and gaseous 1,1,1-trichloroethane with 25% (by volume) heptane. Once vaporized, the 1,1,1-trichloroethane decomposes to form CO2 and HCl through the intermediates 1,1-dichloroethylene, phosgene, acetylene, and carbon monoxide. The 1,1,1-trichloroethane/alkane mixtures also form the intermediate ethylene. No significant differences are observed between injecting the compounds as a droplet spray or as a gaseous jet, not an unexpected result as the mixing time of the gas jet is longer than the vaporization time of the droplets. The addition of heptane or dodecane to 1,1,1-trichloroethane produces two principal effects: an increase in ethylene, acetylene and carbon monoxide levels for injection temperatures between 950 to 1040 K, and a decrease in 1,1-dichloroethylene, phosgene, acetylene, and carbon monoxide levels for injection temperatures greater than 1050 K. Reaction of the injected alkane causes the former effect, while the additional heat of combustion of the alkane additives causes the latter.

Keywords: 1,1,1-C2H3Cl3, Combustion, Oxidation

Katsumata, P.T. and Kastenberg, W.E. (1996), Fate and transport of methanol fuel from spills and leaks. *Hazardous Waste & Hazardous Materials*, **13** (4), 485-498.

Abstract: This paper describes the results of a computer simulation that models the transport and fate of methanol introduced into surface water and ground water environments. Several different scenarios involving substantial (5,000 gallon) releases of methanol were modeled using GEOTOX, a multimedia environmental compartment model for examining the transport and transformation of chemical substances in various environmental release situations. These results provide an improved theoretical basis to help explain the fate of methanol spilled or leaked into fresh surface or ground waters and better determine the extent of related public health risk. For comparative purposes, one fuel spill scenario was also modeled for the common gasoline constituents, benzene, toluene, ethylbenzene and xylenes (BTEX). The results presented in this paper show that approximately all of the methanol introduced into the environment from any of the three release scenarios will be removed fairly quickly due to either volatilization, advection or degradation. Thus the possibility of contaminating groundwater supplies to the extent of endangering human health is very small. In comparing the results of the first scenario to a similar gasoline release, the hazard posed by the BTEX compounds of the gasoline release will be greater than that of the methanol release. The BTEX compounds will persist much longer in the environment than methanol.

# Title: Headache

Full Journal Title: [Headache](http://www3.interscience.wiley.com/journal/118518032/home)

ISO Abbreviated Title: Headache

JCR Abbreviated Title: Headache

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Harrington, M.G. (2006), Cerebrospinal fluid biomarkers in primary headache disorders. *Headache*, **46** (7), 1075-1087.

Full Text: 2006\Headache46, 1075.pdf

Abstract: Objective.-The object of this review is to examine the published literature for cerebrospinal fluid laboratory measures of primary headache disorders to identify biomarkers and provide recommendations for future biomarker discovery. Background.-Biomarkers may distinguish deviation from a normal state, provide insight into mechanisms of pathophysiology, quantify the degree of change, discriminate what may be clinically overlapping disorders, and allow monitoring and/or selection of specific treatment. High-throughput, discovery technologies fuel the ability to reveal more biomarkers than past hypothesis-driven studies. Design or Methods.-Publications were identified in PUBMED, ISI web of knowledge (both Web of Science and BIOSYS), and SciFinder, using the key words for cerebrospinal fluid (CSF) and migraine, headache, or biomarkers. Additional references were sought from the papers identified in these searches. Data were assessed relating to all primary headache types for clinical and scientific methods and results. Results.-Fifty-five out of 82 biomarkers were found from 55 publications, though none have been validated for clinical utility. Data for site (ventricular, cervical, lumbar) and timing of CSF collection, headache state, and diagnostic description were patchy, and controls were often poorly defined. Most routinely performed CSF measurements were within normal limits. Most levels of pain-related molecules were reduced, and concentrations of most neurotransmitters, neuropeptides, proteins, and small molecules were increased. Though few studies assessed the specificity of biomarkers for primary headaches, it is clear that there are differences in CSF biomarkers between migraine, cluster headache, tension-type headache, and trigeminal neuralgia. Conclusions.-The high proportion (67%) of biomarkers identified from laboratory measures tested thus far predicts that many more biomarkers will be identified for primary headaches when more candidates are evaluated. In order to discover and evaluate more biomarkers, especially those that may have clinical application for headache management, 3 recommendations are encouraged: prospective design of care-independent studies; evaluation of more clinical variables; and evaluation of substantially more candidates by using discovery-based research methods. Outlines of approaches to pursue these aims are proposed.

Keywords: Acid Levels, Attacks, Biomarker Identification, Biomarkers, Cerebrospinal Fluid, Cerebrospinal Fluid Biomarkers, Chronic Migraine Patients, Clinical Utility, Cluster Headache, Csf Beta-Ep, Evaluation, Free Intervals, Glutamate Levels, ISI, Knowledge, Literature, Management, Monitoring, Normal, Papers, Plasma, Primary, Primary Headache Disorders, Publications, Pubmed, Research, Review, Science, Tension-Type Headache, Treatment, Tryptophan, Web of Science

? Schurks, M., Rist, P.M. and Kurth, T. (2010), *MTHFR* 677C > T and *ACE* D, I polymorphisms in migraine: A systematic review and meta-analysis. *Headache*, **50** (4), 588-599.

Full Text: [2010\Headache50, 588.pdf](2010/Headache50,%20588.pdf)

Abstract: Background.- Data on the association between the MTHFR 677C > T and ACE D, I polymorphisms and migraine including aura status are conflicting. Objective.- The objective of this study is to perform a systematic review and meta-analysis on this topic. Methods.- We searched for studies published until March 2009 using electronic databases (MEDLINE, EMBASE, Science Citation Index) and reference lists of studies and reviews on the topic. Assessment for eligibility of studies and extraction of data was performed by 2 independent investigators. For each study we calculated the odds ratios (OR) and 95% confidence intervals (CI) assuming additive, dominant, and recessive genetic models. We then calculated pooled ORs and 95% CIs. Results.- Thirteen studies investigated the association between the MTHFR 677C > T polymorphism and migraine. The TT genotype was associated with an increased risk for any migraine, which only appeared for migraine with aura (pooled OR = 1.48, 95% CI 1.02-2.13), but not for migraine without aura. Nine studies investigated the association of the ACE D, I polymorphism with migraine. The II genotype was associated with a reduced risk for migraine with aura (pooled OR = 0.71, 95% CI 0.55-0.93) and migraine without aura (pooled OR = 0.84, 95% CI 0.70-0.99). Results for both variants were driven by studies in non-Caucasian populations. Results among Caucasians did not suggest an association. Extractable data did not allow investigation of gene-gene interactions. Conslusions.- The MTHFR 677TT genotype is associated with an increased risk for migraine with aura, while the ACE II genotype is protective against both migraine with and without aura. Results for both variants appeared only among non-Caucasian populations. There was no association among Caucasians.

Keywords: Ace D, Angiotensin-Converting Enzyme, Association, Aura, C677t Polymorphism, Cardiovascular-Disease, Citation, Databases, Gene Deletion Polymorphism, I Polymorphism, Insertion, Deletion Polymorphism, Medline, Meta-Analysis, Methylenetetrahydrofolate Reductase, Migraine, Models, MTHFR 677C > T Polymorphism, Prevalence, Review, Risk, Science, Science Citation Index, Systematic Review, Topic

# Title: Health

Full Journal Title: [Health](http://hea.sagepub.com/archive/)

ISO Abbreviated Title: Health

JCR Abbreviated Title: Health

ISSN: 1363-4593

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Winnick, T.A. (2007), Trends in attention to complementary and alternative medicine in the American medical literature. *Health*, **11** (3), 371-399.

Full Text: [2007\Health11, 371.pdf](2007/Health11,%20371.pdf)

Abstract: For decades, complementary and alternative medicine (CAM) has been a topic of discussion within American medical journals. This research examines trends in the amount of coverage CAM receives in top professional journals in US medicine in order to ascertain if the timing of this discussion is linked to demographic, economic or political changes occurring in US society and affecting organized medicine. Pooled time series analyses of the number of published documents in five prestigious American medical journals between 1965 and 1999 were conducted, and findings of models with unlagged and lagged variables are presented. Results indicate that coverage of CAM is related to a proportionately older population, disability, innovation in health care financing and expanded licensing for non-physician health care providers. These associations point to a profession actively monitoring its competitors in a rapidly changing medical marketplace.

Keywords: Alternative, Analyses, Care, Changes, Complementary, Complementary and Alternative Medicine, Coverage, Disability, Economic, Financing, Health, Health Care, Health Care Financing, Innovation, Journals, Licensing, Literature, Medical, Medical Journals, Medical Literature, Medicine, Models, Monitoring, Population, Profession, Providers, Research, Society, Time Series, Timing, Trends, US

# Title: Health Bulletin (Edinb)

Full Journal Title: Health Bulletin (Edinb)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Sullivan, F.M., Lewison, G. and Clarkson, J. (2002), What Scottish primary care researchers are doing to recover their standing in the UK? *Health Bulletin (Edinb)*, **60** (1), 7-12.

Full Text: Hea Bul60, 7

Abstract: OBJECTIVE: To compare the outputs of Scottish PC research with the rest of the UK. DESIGN: Bibliometric analysis of the research level and potential impact of research publications. Papers are categorised by level (RL) from basic research to clinical observation and potential impact category (PIC), a 5 year impact factor on a numerical scale. SETTING: Interrogation of the Wellcome Trust’s Research Outputs Database 1988-97. SUBJECTS: 17, 303 papers, 2,280 arising from Scottish primary care. RESULTS: Scottish primary care publications totalled 14% of the published research in the UK during 1988, by 1997 it had fallen to 10%. PC researchers in the rest of the UK produced a 60% increase (1169 to 1866 per annum) in publications compared to our 25% increase (201 to 251 per annum) over the same period. Scottish papers were less likely to be presenting basic science. The mean potential impact was slightly lower than the rest of the UK (1.89 compared to 1.94, s.e.m.0.02). CONCLUSION: Scottish PC research outputs grew more slowly than the rest of the UK during 1988-97. The research interests and journals selected by the research community contributed to this pattern. The climate, infrastructure and skills required for more effective PC research during this period were also significant factors. The Scottish School of Primary Care provides a mechanism for everyone in NHSScotland and Higher Education Institutions to address the underlying issues identified in this analysis. As a ‘baseline’ analysis, this report will allow progress to be monitored as the SSPC becomes increasingly effective.

# Title: Health Care Management Review

Full Journal Title: Health Care Management Review

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0361-6274

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Dopson, S., FitzGerald, L., Ferlie, E., Gabbay, J. and Locock, L. (2002), No magic targets! Changing clinical practice to become more evidence based. *Health Care Management Review*, **27** (3), 35-47.

Abstract: This article focuses on the diffusion and adoption of innovations in clinical practice. The authors are specifically interested in underresearched questions concerning the latter stages of the creation, diffusion, and adoption of new knowledge, namely: What makes this information credible and therefore utilized? Why do actors decide to use new knowledge? and what is the significance of the social context of which actors are a part?

Keywords: Adoption, Clinical, Clinical Practice, Context, Diffusion, Evidence, Evidence Based, Evidence-Based, Information, Knowledge, Practice, Significance, Social

# Title: Health Communication

Full Journal Title: [Health Communication](http://www.informaworld.com/smpp/title~content=t775653649)

ISO Abbreviated Title: Health Commun.

JCR Abbreviated Title: Health Commun

ISSN: 1041-0236

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Lawrence Erlbaum Assoc Inc-Taylor & Francis

Publisher Address: 325 Chestnut Street, Ste 800, Philadelphia, PA 19106

Subject Categories:

Communication: Impact Factor 1.047, 16/45 (2007)

Health Policy & Services: Impact Factor 1.047, 28/40 (2007)

? Campo, S. and Mastin, T. (2007), Placing the burden on the individual: Overweight and obesity in African American and mainstream women’s magazines. *Health Communication*, **22** (3), 229-240.

Full text: [2007\Hea Com22, 229.pdf](2007/Hea%20Com22,%20229.pdf)

Abstract: One third of all U.S. adult women, and more than 75% of African American women, are overweight or obese. This study examined overweight and obesity editorial content (N=406) in three mainstream and three African American women’s magazines between 1984 and 2004. Content analysis was used to determine which strategies were suggested regarding diet, overweight, and obesity, which components of social cognitive theory were offered (behavior, person, or environment), and whether or not there were differences in the genres. The results suggest that although a wide range of strategies were being offered, the vast majority were behavioral changes with an individual solution focus. Although African American and mainstream magazines suggested many of the same strategies, nearly half more frequently appeared in one or the other genre. Mainstream magazines were twice as likely to offer the limiting or eliminating of fast food or junk food, eating more protein, eating lower-fat foods, and eating smaller portions. African American magazines were much more likely to cover fad diets and to suggest readers rely on God or faith in their diet plans. The average number of strategies offered per article was significantly higher in mainstream than in African American magazines.

Keywords: Adult, African American, Analysis, Behavior, Burden, Changes, Diet, Environment, Food, Obese, Obesity, Overweight, Person, Protein, Social, Solution, Theory, Women

? Dutta, M.J. and Boyd, J. (2007), Turning “Smoking man” images around: Portrayals of smoking in men’s magazines as a blueprint for smoking cessation campaigns. *Health Communication*, **22** (3), 253-263.

Full text: [2007\Hea Com22, 253.pdf](2007/Hea%20Com22,%20253.pdf)

Abstract: Published scholarship documents the prevalence and health risks of smoking among men. There is also a rich tradition of studying the normative influences of the media in constructing and propagating images of healthy/unhealthy behaviors such as smoking. To understand the construction of these media-propagated smoking images toward male audiences, this article studies all advertising and editorial content of 3 major men’s magazines for 2001 using rhetorical and content analyses. The emergent themes construct the smoking man as sensual, in another place, independent, and mysterious. The authors recommend turning around these themes of the masculine “smoking man” for the purpose of strategic media planning and developing message-targeting guidelines for smoking cessation and prevention messages directed at men.

Keywords: Advertising, Analyses, Construction, Developing, Guidelines, Health, Male, Media, Men, Planning, Prevalence, Prevention, Purpose, Risks, Scholarship, Smoking, Strategic

# Title: Health Data in the Information Society

Full Journal Title: Health Data in the Information Society

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Soualmia, L.F., Darmon, S.J., Le Duff, F., Douyere, M. and Thelwall, M. (2002), Web Impact Factor: A bibliometric criterion applied to medical informatics societies’ Web sites. *Health Data in the Information Society*, **90**, 178-183.

Abstract: Several methods are available to evaluate and compare medical journals. The most popular is the journal Impact Factor, derived from averaging counts of citations to articles. Ingwersen adapted this method to assess the attractiveness of Web sites, defining the external Web Impact Factor (WIF) to be the number of external pages containing a link to a given Web site. This paper applies the WIF to 43 medical informatics societies’ Web sites using advanced search engine queries to obtain the necessary link counts. The WIF was compared to the number of publications available in the Medline bibliographic database in medical informatics in these 43 countries. Between these two metrics, the observed Pearson correlation was 0.952 (p<0.01) and the Spearman rank correlation was 0.548 (p<0.01) showing in both cases a positive and strong significant correlation. Conclusion: the WIF of medicalm informatics society’s Web site is statistically related to national productivity and discrepancies can be used to indicate countries where there are either weak medical informatics associations, or ones that do not make optimal use of the Web.

Keywords: Bibliographic Database, Bibliometric, Bibliometrics, Citations, Countries, Database, Health Information, Internet, Journals, Medical, Medical Informatics, Medical Journals, Medline, Productivity, Publications, Search Engine

# Title: Health Economics

Full Journal Title: [Health Economics](http://www3.interscience.wiley.com/cgi-bin/jhome/5749)

ISO Abbreviated Title: Health Econ.

JCR Abbreviated Title: Health Econ

ISSN: 1057-9230

Issues/Year: 8

Journal Country/Territory: English

Language: England

Publisher: John Wiley & Sons Ltd

Publisher Address: The Atrium, Southern Gate, Chichester PO19 8SQ, W Sussex, England

Subject Categories:

Health Care Sciences & Services: Impact Factor 1.591 (2004)

Notes: highly cited

? Diener, A., O’Brien, B. and Gafni, A. (1998), Health care contingent valuation studies: A review and classification of the literature. *Health Economics*, **7** (4), 313-326.

Full Text: [1998\Hea Eco7, 313.pdf](1998/Hea%20Eco7,%20313.pdf)

Abstract: Purpose: The contingent valuation method (CVM) is a survey-based approach for eliciting consumer’s monetary valuations for programme benefits for use in cost-benefit analysis (CBA). We used the conceptual framework of O’Brien and Gafni (1996) to classify and critically appraise health care CVM studies. Methods: Search of computerized health care and economic citation databases (e.g. MEDLINE, ECONLIT) and manual search for papers published between 1984-1996 reporting primary data valuing health programme benefits in monetary units by CVM using willingness-to-pay (WTP) or accept (WTA). We classified studies using both empirical (i.e. who was surveyed and how) and conceptual criteria (i.e. which measure of consumer utility was measured and why). Results: 48 CVM studies were retrieved; the majority (42) undertook money valuation in the context of cost benefit analysis (CBA), with the remainder being pricing/demand studies. Among the 42 CBA studies, the consumer utility being measured (i.e. compensating (CV) vs. equivalent variation (EV) was explicitly stated in only three (7%) studies). WTP was measured in 95% of studies and WTA in 5%. By cross-tabulation, 42 (91%) studies were designed as WTP/CV, two (4%) were WTP/CV, two (4%) were WTA/CV and no studies used WTA/EV. Most studies were administered by mail (52%) with 38% being in-person interviews. Value elicitation techniques included open-ended questions (38%), payment cards (19%) discrete choice questions (26%) or bidding games (29%). Some form of construct validation tests, particularly associations between WTP and income, were done in 21 studies (50%). Conclusions: (i) The number of health care CVM studies is growing rapidly and the majority are done in the context of CBA; (ii) there is wide variation among health care CVM studies in terms of the types of questions being posed and the elicitation formats being used; (iii) classification and appraisal of the literature is difficult because reporting of methods and their relationship with the conceptual framework of CBA is poor; (iii) the applicability to health care of the CVM guidelines issued by the National Oceanic and Atmospheric Administration (NOAA) panel for environmental economics is unclear. (C) 1998 John Wiley & Sons, Ltd.

Keywords: Analysis, Approach, Benefit Analysis, Care, Choice, Citation, Classification, Context, Contingent Valuation, Cost, Cost Benefit, Cost-Benefit Analysis, Criteria, CVM, Data, Databases, Economic, Economics, Environmental, Environmental Economics, Framework, Guidelines, Health, Health Care, Interviews, Literature, Measure, MEDLINE, Methods, Papers, Primary, Reporting, Review, Techniques, Utility, Validation, Valuation, Willingness to Pay, WTA, WTP

? Maynard, A. and Kanavos, P. (2000), *Health Economics*: An evolving paradigm. *Health Economics*, **9** (3), 183-190.

Full Text: [2000\Hea Eco9, 183.pdf](2000/Hea%20Eco9,%20183.pdf)

Keywords: Economics, Paradigm

? Rubin, R.M. and Chang, C.F. (2003), A bibliometric analysis of health economics articles in the economics literature: 1991-2000. *Health Economics*, **12** (5), 403-414.

Full Text: [2003\Hea Eco12, 403.pdf](2003/Hea%20Eco12,%20403.pdf)

Abstract: This paper describes and analyzes trends in health economics articles indexed in the economics literature from 1991 to 2000. demonstrating the robust state of publication in the field during the past decade. While articles, pages, and the number of journals increased, single authorship declined dramatically from almost half of articles published to only one-third, and papers with four or more authors increased three-fold. Over three-fourths of articles were analyses of healthcare markets or health production, while policy oriented articles constituted the third largest share. Author concentration ratios decreased almost by half and the Herfindhal-Hirschman index of author concentration declined from 14 in 1991 to only 4 in 1999. Copyright (C) 2003 John Wiley Sons, Ltd.

Keywords: Health Economics Articles, Bibliometric Analysis, Health Economics Literature, Scholarly Journals

? Bonastre, J., le Vaillant, M. and de Pouvourville, G. (2011), The impact of research on hospital costs of care: An empirical study. *Health Economics*, **20** (1), 73-84.

Full Text: [2011\Hea Eco20, 73.pdf](2011/Hea%20Eco20,%2073.pdf)

Abstract: The goal of this study was to examine the impact of research activities on hospital costs and lengths of stay in French public hospitals. Our data consist of a random sample of 30 000 inpatient stays in 38 hospitals that were extracted from the French Hospital Cost Survey database. Hospital characteristics were added using data from a French national survey and performing a bibliometric study. This is a retrospective study of hospitalizations. We used multilevel modelling. We considered separate models to explain the cost per day and the length of hospital stay (LOS). Research output was defined based on the quartiles of the distribution of the number of impact-weighted scientific publications produced in our sample of hospitals over a 6-year period. Research production was associated with a higher cost of care. The cost per day was 19% higher in hospitals in the 3rd quartile and 42% higher in hospitals in the 4th quartile compared to that in hospitals that were not involved in research activities. This result was sensitive to the type of care under consideration. The effect was stronger in oncology but not significant in routine care. Scientific production did not impact the LOS. Copyright (C) 2010 John Wiley & Sons, Ltd.

Keywords: Bibliometric, Bibliometric Study, Cost, Data, Database, Efficiency, French, Funding, Hospital Costs, Impact, Length, Medical-Service Increment, Modelling, Models, Multilevel Modelling, Output, Payment, Production, Publications, Research, Research Output, Scientific Production, Scientific Publications, Stay, Survey, Teaching Hospitals, Teaching Sift, Web of Science

# Title: Health Education & Behavior

Full Journal Title: [Health Education & Behavior](http://heb.sagepub.com/archive/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1090-1981

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Simons-Morton, B. (2007), Defined by publication: A commentary on health education and health promotion publication trends. *Health Education & Behavior*, **34** (1), 26-30.

Full Text: [2007\Hea Edu Beh34, 26.pdf](2007/Hea%20Edu%20Beh34,%2026.pdf)

Keywords: Education, Health, Health Education, Health Promotion, Promotion, Publication, Trends

# Title: Health Education Journal

Full Journal Title: Health Education Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Friedman, D.B. and Hoffman-Goetz, L. (2008), Literacy and health literacy as defined in cancer education research: A systematic review. *Health Education Journal*, **67** (4), 285-304.

Full Text: [2008\Hea Edu J67, 285.pdf](2008/Hea%20Edu%20J67,%20285.pdf)

Abstract: Background Limited literacy and health literacy are associated with lack of cancer screening and later stage cancer diagnoses. Objective To systematically review the literature for definitions of literacy and health literacy as related to patient access, use, and comprehension of cancer prevention and treatment education. Methods Original research articles written from 1992 to 2006 inclusive with the terms health literacy and/or literacy in the title, abstract or key words and explicitly linked to cancer information were found by searching MEDLINE, PsycINFO, CSA Sociological Abstracts, Social Sciences Citation Index, and Cumulative Index to Nursing and Allied Health Literature (CINAHL). Results A final sample of 78 studies was included in this review. Forty-five articles mentioned literacy, seven were on health literacy, and 26 discussed both literacy and health literacy. Only 15 articles (19.2 per cent) defined literacy and/or health literacy. Conclusion This systematic review indicates that definitions of literacy and health literacy are not being used consistently in the cancer education literature. Best practice definitions of literacy and health literacy are important, especially when screening individuals for their understanding of cancer prevention and treatment information.

Keywords: Breast-Cancer, Cancer Education, Citation, Colorectal-Cancer, Health Literacy, Literacy, Literature, Low-Income Patients, Metastatic Prostate-Cancer, Nutrition Education, Outcomes Assessment, Patient-Education, Prevention, Quality-of-Life, Randomized Controlled-Trial, Research, Review, Social Sciences, Socioeconomic-Status, Systematic Review

# Title: Health Education Quarterly

Full Journal Title: Health Education Quarterly

ISO Abbreviated Title: Health. Educ. Q.

JCR Abbreviated Title: Health Educ Q

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Gielen, A.C., Wilson, M.E., Faden, R.R., Wissow, L. and Harvilchuck, J.D. (1995), In-home injury prevention practices for infants and toddlers: The role of parental beliefs, barriers, and housing quality. *Health Education Quarterly*, **22** (1), 85-95.

Abstract: The present research was designed to contribute to the empirical literature on the scope and determinants of parents’ injury prevention practices among families living in disadvantaged, urban areas. One hundred fifty mothers were interviewed about their living environment when they brought their children (ages 6-36 months) to a hospital-based, pediatric primary care clinic. Only 37% of respondents reported that they knew their hot water temperature was 125° or less. A majority (59%) of families reported that they did not use stair gates. More than one fourth (27%) of respondents said they did not have smoke detectors. Mothers uniformly reported very favorable attitudes and beliefs and strong support from others for in-home injury prevention practices. Factors significantly associated with the number of injury prevention practices implemented were family income, housing quality, and environmental barriers. Instead of attempting solely to persuade parents about the value of injury prevention practices, skill-based interventions are needed to help parents overcome specific barriers that result from living in substandard housing and having very limited financial resources.

# Title: Health Education Research

Full Journal Title: [Health Education Research](http://her.oxfordjournals.org/); [Health Education Research](http://www.swetswise.com/eAccess/viewTitleIssues.do?titleID=90882)

ISO Abbreviated Title: Health Educ. Res.

JCR Abbreviated Title:

ISSN: 0268-1153

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schloman, B.F. and Byrne, T.J. (1992), Patterns of information transfer in health education: A bibliometric analysis of the research literature. *Health Education Research*, **7** (1), 117-128.

Full Text: [1992\Hea Edu Res7, 117.pdf](1992/Hea%20Edu%20Res7,%20117.pdf)

Abstract: The purpose of this study is to examine the extent to which health education has become a distinctly separate field of inquiry as evidenced by the patterns of information transfer in the health education research literature. Bibliometric analysis is used to determine: (1) if health education has an identifiable core of journals, (2) the extent to which health education research is derivative of research from other disciplines and (3) the extent to which research from other disciplines draws upon research published in health education journals. The results suggest that there is an identifiable core of journals that serve to characterize health education as a distinct field of inquiry. However, health education research is found to be more derivative of research from other fields than are the other comparative fields in the sample. Moreover, researchers in other disciplines use health education research less than half as often as health education uses its own research. Differences in citing patterns in journals dedicated to health education and by researchers publishing on health education topics in research journals of other areas seem to indicate that health education research is not one unified undertaking.

Keywords: Citation Analysis, Specialties

? Connell, C.M. (1999), Older adults in health education research: Some recommendations. *Health Education Research*, **14** (3), 427-431.

Full Text: [1999\Hea Edu Res14, 27.pdf](1999/Hea%20Edu%20Res14,%2027.pdf)

Abstract: A review of articles published in two health education journals is provided to examine the extent to which older adults were included in published research. The review suggests that older adults were included in about 15% of the research articles published in *Health Education and Behavior* and *Health Education Research*. Of the articles that include older adults, age differences in study processes and outcomes are rarely examined, and very few studies advance specific hypotheses based on a theoretical or conceptual model of aging or older adulthood. Several recommendations for health education research are suggested.

? Camacho-Miñano, M.J., LaVoi, N.M. and Barr-Anderson, D.J. (2011), Interventions to promote physical activity among young and adolescent girls: A systematic review. *Health Education Research*, **26** (6), 1025-1049.

Full Text: [2011\Hea Edu Res26, 1025.pdf](2011/Hea%20Edu%20Res26,%201025.pdf)

Abstract: A narrative systematic review was conducted to describe the available evidence from physical activity (PA) interventions that targeted girls aged 5-18 years and to determine their effectiveness and key characteristics of success. Systematic literature searches were conducted using four databases: PubMed, Web of Science, PsychInfo and SPORTDiscus and by examining the reference lists of included articles and published relevant reviews, to identify studies published in English from 2000 to July 2010. Randomized controlled trials or quasi-experimental designs with pre-test and post-test behavioral outcome data (objective or self-report measure) were included. Methodological quality was assessed using a checklist and conclusions were made concerning effectiveness. A total of 29 articles were reviewed, describing the evaluation of 21 interventions. Ten studies reported a favorable intervention effect upon PA outcomes, seven of which were rated as having a high methodological quality. Multi-component school-based interventions that also offer a physical education that address the unique needs of girls seemed to be the most effective. Although family support is revealed as ineffective, peer strategies showed promising evidence. The review finishes highlighting possible intervention strategies and reporting areas where further investigation is required.

Keywords: Activity Participation, Activity Program, Adolescent, African-American, Aged, Behavior-Change, Children, Databases, Education, Effectiveness, English, Evaluation, Family, Health-Promotion, Intervention, Interventions, Literature, Middle School Girls, Outcome, Outcomes, Physical Activity, Pubmed, Quality, Randomized Controlled Trials, Randomized Controlled-Trial, Review, Science, Self-Report, Success, Systematic, Systematic Review, Web of Science, Youth

# Title: Health Information and Libraries Journal

Full Journal Title: [Health Information and Libraries Journal](http://weblinks3.epnet.com/HJAFdetail.asp?tb=1&_ug=dbs+0+ln+en%2Dus+sid+C3CD5652%2D8CBD%2D4FA1%2DA812%2DFAF430A672EE%40Sessionmgr2+2BDF&_uh=btn+N+idb+afhish+jdb+afhjnh+op+phrase+ss+ID++EVZ+87CD&_us=sm+ES+E6C7&)

ISO Abbrev. Title: Heatlth Info. Libr. J.

JCR Abbrev. Title: Health Info Libr J

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Publisher: Wiley-Blackwell Publishing, Inc

Publisher Address: Commerce Place, 350 Main St, Malden 02148, MA

Subject Categories:

Information Science & Library Science: Impact Factor 0.939, 30/61 (2008) SSCI

Robu, I., Marineanu, D., Aciu, I. and Wood-Lamont, S. (2001), Improving standards in the scientific biomedical community in Romania by using journal ranking to improve journal quality. *Health Information and Libraries Journal*, **18** (2), 91-98.

Full Text: [H\Hea Inf Lib J18, 91.pdf](H/Hea%20Inf%20Lib%20J18,%2091.pdf)

Abstract: The paper articulates the problems of journal publication in a relatively small country such as Romania where locally (i.e. nationally) published journals include most of the national medical scientific output. The starting point was a study ordered by the Cluj University of Medicine and Pharmacy Scientific Council, for the purpose of obtaining an objectively ranked list of all current Romanian biomedical journals that could be used in the evaluation of the scientific activity of the university academic staff. Sixty-five current biomedical journals were identified - of which more than half were new titles that had appeared over the past 5 years. None of these are included in the Science Citation Index or Journal Citation Reports (JCR). A set of criteria was used for ranking the journals: peer review, inclusion in international databases, publication time lag, language of articles and abstracts, journal specific index and domestic impact factor. The period covered, along with tools and formulas used are presented. The problems of Romanian biomedical journals as well as ways of improving publishing standards are discussed. Also emphasized is the necessity for increased awareness in the medical scholarly community and the role of the library in this respect.

Booth, A. (2003), Collective decisions. *Health Information and Libraries Journal*, **20** (3), 185-188.

Full Text: [H\Hea Inf Lib J20, 185.pdf](H/Hea%20Inf%20Lib%20J20,%20185.pdf)

Royle P. and Waugh, N. (2004), Should systematic reviews include searches for published errata? *Health Information and Libraries Journal*, **21** (1), 14-20.

Full Text: [H\Hea Inf Lib J21, 14.pdf](H/Hea%20Inf%20Lib%20J21,%2014.pdf)

Abstract: Our objective was to perform a pilot study to estimate the proportion of published errata linked to randomized controlled trials (RCTs) that are worthwhile obtaining when doing a systematic review. medline was searched for records that had both ‘randomized-controlled-trial’ in the publication type field and ‘erratum’ in the comments field. One hundred records from four general medical journals were examined independently from two different perspectives. From the information specialist’s perspective, 74% of the errata were considered worthwhile obtaining; these were mainly errors in tables or figures. Another 9% described less serious errors, but were worth obtaining if easily available. The other 17% were minor errors. From the perspective of the experienced reviewer/public health consultant, 5% of errata were classified as likely to affect a meta-analysis, and 10% as having significant errors that would affect the interpretation of the RCT, but no effect on a meta-analysis; 85% were not considered important enough to affect either. About 5% of errata to RCTs appeared to matter in terms of changing the final conclusions of a systematic review. However, the majority of errata were considered to be worthwhile obtaining, on the basis that having full and accurate data can reduce confusion and save reviewers time.

? Leung, S., Chan, K. and Song, L. (2006), Publishing trends in Chinese medicine and related subjects documented in WorldCat. *Health Information and Libraries Journal*, **23** (1), 13-22.

Full Text: [2006\Hea Inf Lib J23, 13.pdf](2006/Hea%20Inf%20Lib%20J23,%2013.pdf)

Abstract: Background: Chinese medicine (CM) has been the subject of increasing interest in the past 30 years, both as a discipline and in the larger context of alternative medicine. It has steadily been accepted by and integrated into the medical and health-care fields in many countries. Objective: This study aims to gain an overview of how CM has been interpreted and presented to the world outside China and to identify emerging trends. Methods: This study is designed to analyse the publishing trends of CM and related subjects in all languages except Chinese, ranging from books and serials to audio-visual and electronic resources found in WorldCat, the world’s largest bibliographic database produced by OnLine Computer Library Center (OCLC). Results: The findings showed a flourishing growth of publications in CM and related subjects beginning in the 1970s with greater coverage on acupuncture. The materials in English language constitute the major portion of total output. Conclusion: We conclude that Chinese medicine has steadily gained recognition in the world based on the analysis of publication records. The translation of original works and analysis of journal literature and conference proceedings on Chinese medicine merit further study.

Keywords: Acupuncture, Alternative, Analysis, China, Chinese, Context, Coverage, Database, Flourishing, Growth, Health Care, Journal, Languages, Literature, Medical, Medicine, Publication, Publications, Publishing, Records, Serials, Translation, Trends, World

? Ullah, M. and Butt, I.F. (2008), Rating Pakistani medical journals using the principles of citation analysis. *Health Information and Libraries Journal*, **25** (1), 50-54.

Full Text: [2008\Hea Inf Lib J25, 50.pdf](2008/Hea%20Inf%20Lib%20J25,%2050.pdf)

Abstract: Objective: To quantify the impact of Pakistani Medical Journals using the principles of citation analysis. Methods: References of articles published in 2006 in three selected Pakistani medical Journals were collected and examined. The number of citations for each Pakistani medical journal was totalled. The first ranking of journals was based on the total number of citations; second ranking was based on impact factor 2006 and third ranking was based on the 5-year impact factor. Self-citations were excluded in all the three ratings. Results: A total of 9079 citations in 567 articles were examined. Forty-nine separate Pakistani medical journals were cited. The Journal of the Pakistan Medical Association remains on the top in all three rankings, while Journal of College of Physicians and Surgeons-Pakistan attains second position in the ranking based on the total number of citations. The Pakistan Journal of Medical Sciences moves to second position in the ranking based on the impact factor 2006. The Journal of Ayub Medical College, Abbottabad moves to second position in the ranking based on the 5-year impact factor. Conclusion: This study examined the citation pattern of Pakistani medical journals. The impact factor, despite its limitations, is a valid indicator of quality for journals.

Keywords: Analysis, Citation, Citation Analysis, Citations, Impact Factor, Impact Factors, Journals, Medical Journals, Sciences, Self-Citations

? Ullah, M., Butt, I.F. and Haroon, M. (2008), The *Journal of Ayub Medical College*: A 10-year bibliometric study. *Health Information and Libraries Journal*, **25** (2), 116-124.

Full Text: [2008\Hea Inf Lib J25, 116.pdf](2008/Hea%20Inf%20Lib%20J25,%20116.pdf)

Abstract: Objective: To conduct a bibliometric evaluation of the Journal of Ayub Medical College (JAMC), Abbottabad, Pakistan. Methods The data of articles, citations and authors of JAMC from 1997 to 2006 were collected and analysed in terms of bibliometric parameters. Results: The number of articles published per year ranges between 27 and 97; most of the articles (47.2%) have 11-20 citations. Three-author contributions ranked the highest (134; 23.43%); the most prolific authors contributed seven articles; 295 (51.57%) of the authors are geographically affiliated to the North West Frontier Province (NWFP), Pakistan; the most popular subject is Internal Medicine; journal self-cited references are 43; 7769 (77.94%) of the citations were from foreign journals; the most productive institution is Ayub Medical College, Abbottabad, Pakistan. Conclusion: The number of papers published in JAMC per issue has been increasing over the last 10 years, and the core region is NWFP, Pakistan. Original articles are the main type of papers for this journal. The publication is open for all fields of medical sciences.

Keywords: Authors, Bibliometric, Bibliometric Evaluation, Bibliometric Study, Citation Analysis, Citations, Data, Evaluation, Foreign, Institution, Journal, Journal Self-Cited, Journals, Jun, Medical, North, Open, Pakistan, Papers, Publication, References, Sciences

? Booth, A., Carroll, C., Papaioannou, D., Sutton, A. and Wong, R. (2009), Applying findings from a systematic review of workplace-based e-learning: implications for health information professionals. *Health Information and Libraries Journal*, **26** (1), 4-21.

Full Text: [2009\Hea Inf Lib J26, 4.pdf](2009/Hea%20Inf%20Lib%20J26,%204.pdf)

Abstract: Objectives: To systematically review the UK published literature on e-learning in the health workplace and to apply the findings to one of the most prolific UK e-learning initiatives in the health sector-the National Library for Health Facilitated Online Learning Interactive Opportunity (FOLIO) Programme. Methods: Sensitive searches were conducted across ASSIA, Australian Education Index, British Education Index, CINAHL, CSA Abstracts, Dissertation Abstracts, Emerald, ERIC, IBSS, Index to Theses, LISA, MEDLINE, PSYCINFO and Social Science Citation Index. Additional citations were identified from reference lists of included studies and of relevant reviews; citation tracking and contact with experts. Twenty-nine studies met the inclusion criteria and were coded and analysed using thematic analysis as described by Miles & Huberman (Qualitative Data Analysis: A Sourcebook of New Methods. Newbury Park, CA: Sage, 1984). Results: Five broad themes were identified from the 29 included studies: (i) peer communication; (ii) flexibility; (iii) support; (iv) knowledge validation; and (v) course presentation and design. These broad themes were supported by a total of eleven sub-themes. Components from the FOLIO Programme were analysed and existing and proposed developments were mapped against each sub-theme. This provides a valuable framework for ongoing course development. Conclusion: Librarians involved in delivering and supporting e-learning can benefit from applying the findings from the systematic review to existing programmes, exemplified by the FOLIO Programme. The resultant framework can also be used in developing new e-learning programmes.

Keywords: Citation, Citations, Education, Internet, Knowledge, Medline, Reproductive Medicine, Science, Systematic Review, UK

? Garg, K.C., Kumar, S., Madhavi, Y. and Bahl, M. (2009), Bibliometrics of global malaria vaccine research. *Health Information and Libraries Journal*, **26** (1), 22-31.

Full Text: [2009\Hea Inf Lib J26, 22.pdf](2009/Hea%20Inf%20Lib%20J26,%2022.pdf)

Abstract: Objectives: This study evaluates malaria vaccine research carried out in different parts of the world during 1972-2004 using different bibliometric indicators. Method : Data have been downloaded from PubMed for the period 1972-2004 using the keywords (malaria\* or plasmodium or falciparum) and (vaccine\*) in the title and abstract fields. The study examined the pattern of growth of the output, its geographical distribution, profile of different countries in different subfields and pattern of citations using GOOGLE Scholar. Results: Malaria vaccine research output is gradually increasing. The USA, followed by the UK and Australia contributed the highest number of papers. Publication activity has decreased in Switzerland and Sweden, but has increased in Brazil and China. The majority of the countries have focused on the development of asexual blood stage malaria. Citations per paper and incidence of high-quality papers for the USA, the UK, Papua New Guinea and Denmark are more than the average. The majority of the prolific institutions are located in the USA, the UK, France and Australia. Conclusion: The last two decades have witnessed considerable growth in research output in this field, while a successful malaria vaccine still remains elusive. Interestingly, the countries like the USA, the UK and Australia that lead in the quantity, quality and citation of this output are often not those directly affected by malaria.

Keywords: Bibliometric, Bibliometric Indicators, Bibliometrics, Brazil, Citation, Citations, Computer-Science, Countries, Development, France, Growth, India, Indicators, Malaria, Output, Papers, Publication, Pubmed, Quality, Research, Research Output, Rts,S, As02a, Safety

? Benamer, H.T.S., Bredan, A. and Bakoush, O. (2009), A negative trend of biomedical research in Libya: A bibliometric study. *Health Information and Libraries Journal*, **26** (3), 240-245.

Full Text: [2009\Hea Inf Lib J26, 240.pdf](2009/Hea%20Inf%20Lib%20J26,%20240.pdf)

Abstract: Background: It is well established that Libya is lagging behind its peers in biomedical research. The aim of this study is to analyse all the original biomedical publications affiliated with Libya from 1973 to 2007. Methods: PubMed and the Science Citation Index Expanded were searched for ‘original research’ biomedical studies affiliated with Libya. The generated data were hand searched and 329 ‘original research’ studies were included in the analysis. Results: The first study was published in 1973. Publication rate peaked to an average of 15.2 studies per year during 1986-1996 and dropped to an average of 8.8 studies per year during 1997-2007. Of 166 first authors; 41% were Libyans and 59% were expatriates. The latter contributed 104 studies between 1986 and 1996 and 36 studies between 1997 and 2007, while the Libyans contributed 63 and 61 studies in the two respective periods. Authors affiliated with Benghazi produced 67% of the published studies, while authors from Tripoli produced 30% and other medical schools, hospitals and research centres from other Libyan cities produced only 3%. Conclusion: This study showed a decline in biomedical research publication in Libya. We propose that the lack of a research culture among the Libyan medical professionals is one of the factors contributing to this decline, which coincided with the departure of expatriate doctors from Libya. Raising awareness of the importance of research and improving research skills among Libyan medical professionals may help to reverse the current trend.

Keywords: Bibliometric Study, Citation, Geography, Libya, Publication, Publications, Research, Science

? Zainal, H. and Zainab, A.N. (2011), Biomedical and health sciences publication productivity from Malaysia. *Health Information and Libraries Journal*, **28** (3), 216-225.

Full Text: [2011\Hea Inf Lib J28, 216.pdf](2011/Hea%20Inf%20Lib%20J28,%20216.pdf)

Abstract: Background: The aim of this study was to examine Malaysian contributions in the field of biomedical and health sciences. Methods: In this study, 3697 publications affiliated to Malaysian addresses from the SCI database between 1990 and 2005 were sampled. This study also explored publication productivity trends, authorship and collaboration pattern, core journals used, and citations obtained. Results: Main contributions were journal articles (73.3%). Most authors (63.7%) contributed only one article and 16.1% produced over 30-68 publications. Multi-authored works were the norm. The productive authors were named either first or second in publications. There were active collaborations with authors from Asia-Pacific countries (35%) and Europe (30%). The majority of publications were contributed by institutions of higher learning (87%). Core journals used follow quite close to Bradford’s zonal ratios of 44:152:581. The active research areas were identified. About 71.3% of publications received citations especially those published from 1995 to 1999. Conclusion: This study helped librarians identify active researchers, active research areas and journals relevant to biomedical and health sciences researchers and useful when producing reports to university management and planning medical collection policies and deciding on journal subscriptions and cancellations.

Keywords: Authors, Authorship, Bibliometric Analysis, Bibliometrics, Biomedical, Citation Analysis, Citations, Collaboration, Europe, Health Sciences, Journal, Journal Use, Journals, Learning, Library, Malaysia, Medical, Medicine, Methods, Parasitology, Patterns, Policies, Publication, Publication Productivity, Publications, Research, Researchers, SCI, Sciences, Scopus, Trends, Tropical-Medicine, University

# Title: Health Medicine Recsearch and Practice

Full Journal Title: [Health Medicine Recsearch and Practice](http://e29.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=&NaviLink=%e9%ab%98%e6%a0%a1%e4%bf%9d%e5%81%a5%e5%8c%bb%e5%ad%a6%e7%a0%94%e7%a9%b6%e4%b8%8e%e5%ae%9e%e8%b7%b5)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zeng, R.F. and Zhao, W.L. (2005), Bibliometric analysis of health education on AIDS in China. *Health Medicine Recsearch and Practice*, **2** (2), 45-48.

Full Text: [2005\Hea Med Rec Pra2, 45.pdf](2005/Hea%20Med%20Rec%20Pra2,%2045.pdf)

Abstract: Objective To analyze the situation of AIDS health education in twenty five years in China and un derstand thoroughly the research of AIDS health education in our country. Method Search out the bibliogra phy about AIDS health education f rom CBMdisc, and use the method of bibliomet ric to analyze the index that include the amount of publishing each year, the degree and the rate of cooperation, periodical dist ribution and locality dist ribution. Results Two hundred and sixty three literature about AIDS health education were searched. The degree of cooperation is 3193, the rate of cooperation is 82.50 %. 1916 authors, 535 institution and 139 magazines are related to. Conclusion Analyze the main people, locality dist ribution and the situation of AIDS health education in our count ry quantitatively. Definite the emphases and hot spot, whole show and main organization, and show the direction of further study and development clearly.

Keywords: AIDS, Health Education, Bibliometric Analysis

# Title: Health Physics

Full Journal Title: Health Physics

ISO Abbreviated Title: Health Phys.

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ISSN: 0017-9078

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:

Radiology, Nuclear Medicine & Medical Imaging: Impact Factor

? Mccurdy, D.E. and Mellor, R.A. (1981), The concentration of Ra-226 and Ra-228 in domestic and imported bottled waters. *Health Physics*, **40** (2), 250-254.

? Bujdoso, E., Lyon, W.S. and Braun, T. (1981), Scientometric Study of *Health Physics*. *Health Physics*, **41** (2), 233-242.

? Mills, W.A. (1985), Regulatory consideration in radiation protection. *Health Physics*, **48** (5), 701-704.

Abstract: A regulatory scheme is suggested that identifies regions labeled “unacceptable” and “safe” as the upper and lower bounds and “operational” region is identified as the continuum between the two extremes. These regions are associated with levels of annual risk of cancer death for a given level of lifetime exposure between 100 mrem/yr and 1 mrem/yr, upper and lower bounds, respectively. Concern is expressed with establishing public health standards at ALARA (as low as reasonably achievable) levels, which result in lower standards for reference, and views are presented on several issues of interest in regulations for protection of the public from radioactivity in drinking water. Based on the regulatory scheme suggested, the author concludes that existing standards for drinking water appear to be lower than necessary.

? Holbert, K.E., Stewart, B.D. and Eshraghi, P. (1995), Measurement of radioactivity in Arizona groundwater using improved analytical techniques for samples with high dissolved solids. *Health Physics*, **68** (2), 185-194.

Abstract: Radiochemical analyses of 667 samples collected over the 5-y period 1989 to 1993 indicate that approximately 2% of Arizona drinking water supplies from groundwater sources violate current regulatory standards. About 1% of the population is affected. The 1996 change in regulatory requirements will bring some Arizona water systems into compliance through 226Ra limit relaxation, while others will become noncompliant due to new limits on uranium levels. Maximum concentrations in Arizona of adjusted gross alpha, gross beta, and 226Ra activities are higher than levels found in the U.S. Environmental Protection Agency’s national survey. Sampling results show a correlation between radionuclide concentration and localized geology. Improved radiochemical methods are described that result in greater accuracy and sensitivity for samples high in dissolved solids, as are typical in Arizona.

? Tries, M.A., Ring, J.P. and Chabot, G.E. (1996), Environmental monitoring for a low-level radioactive waste management facility: Incinerator operations. *Health Physics*, **71** (3), 384-394.

Abstract: An environmental monitoring program has been developed for Harvard University, Southborough campus, to assess the local environmental concentrations of radionuclides released in incinerator effluents. The campus is host to the University’s low-level radioactive waste management facility, which consists of 6,000 drum capacity decay-storage buildings; a 250 drum capacity decay-storage freezer; and a controlled-air incinerator. Developmental considerations were based on the characteristics and use of the incinerator, which has a capacity of 8 tons per day and is operated 5% of the time for the volume reduction of Type 0 and Type 4 wastes contaminated with a variety of radionuclides used in biomedical research-some in microsphere form. Monitoring was established for air, leafy vegetation, leaf-litter, and surface soil media, Field sampling was optimized regarding location and time based on the action of atmospheric, terrestrial, and biotic transport mechanisms. Preliminary results indicate transient concentrations of H-3 and I-125 in vegetation directly exposed to the dispersing plume. Measurable particulate depositions have not been observed.

Keywords: Monitoring, Environmental, Incineration, Waste Management, Radiation, Low-Level, Atmospheric Release, Tritium Transport, Tritiated-Water, Soil

# Title: Health & Place

Full Journal Title: [Health & Place](http://www.sciencedirect.com/science/journal/13538292)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1353-8292

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? MacKian, S.C. (2008), What the papers say: Reading therapeutic landscapes of women’s health and empowerment in Uganda. *Health & Place*, **14** (1), 106-115.

Full Text: [2008\Hea Pla,14, 106.pdf](2008/Hea%20Pla,14,%20106.pdf)

Abstract: The Ugandan Ministry of Health emphasises the pivotal position of women in securing the nation’s health. Drawing on the concept of therapeutic landscapes, this paper explores media constructions of health in Uganda in order to question what role these may play in creating or undermining a ‘therapeutic landscape’ which supports women’s empowerment in a health context. The paper argues for the importance of understanding discursively constructed notions of health in order to ground the promotion of a health care strategy in the everyday lives and discourses of the users implicated. Given the Ugandan government’s current drive to both empower women and push an agenda of formally provided health care, this paper provides an exploratory analysis of how far newspapers facilitate or hinder this vision. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Analysis, Care, Constructed, Context, Drive, Empowerment, Health, Health Care, Landscape, Landscapes, Media, Papers, Promotion, Rights, Role, Therapeutic, Uganda, Understanding, Women, Women’s Health

# Title: Health Policy

Full Journal Title: [Health Policy](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5882&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=556f0e287411ba9199b076fecca7a232)

ISO Abbreviated Title: Health Policy

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ISSN: 0168-8510

Issues/Year: 12

Journal Country/Territory: Ireland

Language: English

Publisher: Elsevier Sci Ireland Ltd

Publisher Address: Customer Relations Manager, Bay 15, Shannon Industrial Estate Co, Clare, IR

Subject Categories:

Health Care Sciences & Services: Impact Factor

Blumenschein, K. and Johannesson, M. (1996), Incorporating quality of life changes into economic evaluations of health care: An overview. *Health Policy*, **36** (2), 155-166.

Full Text: [H\Hea Pol36, 155.pdf](H/Hea%20Pol36,%20155.pdf)

Abstract: The demand for economic evaluations of health care programs, especially pharmaceuticals, is steadily increasing. One of the most important issues in this field is how to measure, value and incorporate changes in quality of life into the economic evaluation. We provide an overview of the different approaches to measure changes in quality of life: quality of life instruments, the quality-adjusted life-year (QALY) approach and the willingness to pay approach. Quality of life instruments have major practical advantages since they are easy to administer. The results of these instruments cannot, however, be used in economic evaluations. In economic evaluations, the quality of life has to be measured on the 0 (death) to 1 (full health) scale necessary to construct QALYs, or the willingness to pay for the change in quality of life has to be measured. Such measurements are, however, much less straightforward to carry out. It would therefore be a major advance if it would be possible to directly translate the duality of life score into a QALY weight or the willingness to pay. It is recommended that more systematic research should be carried out on the relationship between duality of life, QALY weights, and willingness to pay.

Keywords: Antihypertensive Therapy, Willingness, Pay, Preferences, Valuation, Economic Evaluation, Quality of Life, Qalys, Willingness to Pay, Pharmaceuticals

Holmberg, H., Carlsson, P., Löfman, O. and Varenhorst, E. (1998), Economic evaluation of screening for prostate cancer: A randomized population based programme during a 10-year period in Sweden. *Health Policy*, **45** (2), 133-147.

Full Text: [H\Hea Pol45, 133.pdf](H/Hea%20Pol45,%20133.pdf)

Abstract: Prostate cancer is a growing health problem representing considerable costs. Screening and early curative treatment may reduce morbidity and possibly prevent future escalating costs. However, population screening programmes are generally not well accepted at present due to uncerainty about whether screening for prostate cancer can result in reduced mortality. Evidence from large, randomized, controlled trials is still lacking. The objective of this study was to calculate clinical and economic consequences of general prostate cancer screening based on a limited screening trial in a Swedish community and a decision-tree model. A random selection of 1492 men (50-69 years) were invited to repeated screening in 1987, They have been examined every third year (four rounds). The other 7679 men in the population act as controls. The results show that the total incremental health care costs for prostate cacer will increase by 179 million SEK per year with screening compared to no-screening. The number of detected cases of localized cancer will increase by about 1000, which represents an additional cost of about 158 000 SEK per case. In conclusion, general screening for prostate cancer can be performed with a reasonable cost per detected localized cancer. Information on the long-term effect on life quality and cancer mortality is unknown. (C) 1998 Elsevier Science Ireland Ltd. All rights reserved.

Keywords: Carcinoma, Prostate Cancer, Screening, Economic Evaluation, Decision Model

? Buljac-Samardzic, M., kker-van Doorn, C.M., van Wijngaarden, J.D.H. and van Wijk, K.P. (2010), Interventions to improve team effectiveness: A systematic review. *Health Policy*, **94** (3), 183-195.

Full Text: 2010\Hea Pol94, 183.pdf

Abstract: Objectives: To review the literature on interventions to improve team effectiveness and identify their ‘evidence based’-level. Methods: Major data bases (PUBMED, Web of Science, PsycInfo and Cochrane Library) were systematically searched for all relevant papers. Inclusion criteria were: peer-reviewed papers, published in English between January 1990 and April 2008, which present empirically based studies focussing on interventions to improve team effectiveness in health care. A data abstraction form was developed to summarize each paper. The Grading of Recommendations, Assessment, Development, and Evaluation Scale was used to assess the level of empirical evidence. Results: Forty-eight papers were included in this review. Three categories of interventions were identified: training, tools, and organisational interventions. Target groups were mostly multidisciplinary teams in acute care. The majority of the studies found a positive association between the intervention and non-technical team skills. Most articles presented research with a low level of evidence. Positive results in combination with a moderate or high level of evidence were found for some specific interventions: Simulation training, Crew Resource Management training, Team-based training and projects on Continuous quality improvement. Conclusions: There are only some studies available with high quality evidence on interventions to improve team effectiveness. These studies show that team training can improve the effectiveness of multidisciplinary teams in acute (hospital) care. (C) 2009 Elsevier Ireland Ltd. All rights reserved.

Keywords: Assessment, Cochrane, Communication, Complex Interventions, Development Program, Effectiveness, Evaluation, Health Care, Health-Care, Hospital, Human Patient Simulator, Interdisciplinary Team, Intervention, Intervention Studies, Interventions, Literature, Management, Methods, Operating-Room, Papers, Patient Care Teams, Pubmed, Quality Improvement, Randomized Controlled-Trial, Research, Review, Safety Research, Scale, Science, Systematic, Systematic Review, Training, Training-Program, Web of Science

? Nykiforuk, C.I.J., Osler, G.E. and Viehbeck, S. (2010), The evolution of smoke-free spaces policy literature: A bibliometric analysis. *Health Policy*, **97** (1), 1-7.

Full Text: [2010\Hea Pol97, 1.pdf](2010/Hea%20Pol97,%201.pdf)

Abstract: Objectives: This paper describes patterns in the international published literature regarding smoke-free spaces policy through a bibliometric analysis of journals, articles and authors from 1990 to 2009. Methods: Secondary data from a recent systematic literature review were analyzed. Bibliometric techniques included statistical analysis of publication counts and co-citation analysis. Findings were generated through calculations of frequencies of journals. authors, and articles published per year. Analysis was conducted for five policy-relevant domains: public place, schools, private space, workplace, and tobacco industry tactics. Results: Of the 5656 total articles examined, scientific articles written for the public place and workplace domains far outweighed those for schools, private spaces, and tobacco industry. This bibliometric analysis indicated that publication patterns aligned with patterns of policy activity and increasing sophistication in the evolution of smoke-free spaces policy development. This finding held for analyses by article. journal, and author over all years. The analysis also revealed relatively high numbers of unique authors publishing on smoke-free spaces policy each year. Conclusions: This study identified patterns regarding the publication of scientific articles, by varying journals and authors, and illustrated sub-field priorities both recently and for the entire 20-year period examined. (C) 2010 Elsevier Ireland Ltd. All rights reserved.

Keywords: Bibliometric, Bibliometric Analysis, Bibliometrics, Health Policy, Latin-America, Tobacco Smoke Pollution

# Title: Health Psychology

Full Journal Title: Health Psychology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Cabizuca, M., Marques-Portella, C., Mendlowicz, M.V., Coutinho, E.S.F. and Figueira, I. (2009), Posttraumatic stress disorder in parents of children with chronic illnesses: A meta-analysis. *Health Psychology*, **28** (3), 379-388.

Abstract: Objective: To estimate PTSD prevalence in parents of children with chronic illnesses or undergoing invasive procedures, and its association with higher risk of PTSD among parents. Methods: Sixteen studies reporting prevalence of PTSD in parents of children with chronic illnesses were identified through a systematic review in PUBMED, Web of Science, Pilots and Psycinfo databases. Main Outcome Measures: Pooled current PTSD prevalence was calculated for parents from these studies. Pooled PT SD prevalence ratios were obtained by comparing parents of children with chronic diseases with parents of healthy children. Meta-regression was used to identify variables that could account for the lack of homogeneity. Results: Pooled PTSD prevalence was 19.6% in mothers, 11.6% in fathers, and 22.8% in parents in general (p < .001). Pooled prevalence ratio for the four studies reporting on mothers and comparison healthy groups was 4.2 (p < .001). Conclusions: The high prevalence of PTSD found in this population highlights the importance of promptly assessing and treating post-traumatic symptoms in parents of children with chronic diseases as a key step to prevent the negative consequences of PTSD and preserve their competency as caregivers.

Keywords: Adolescent Survivors, Bad-News, Childhood-Cancer, Children, Chronic Illnesses, Databases, Meta-Analysis, Methods, Mothers, Myocardial-Infarction, National Comorbidity Survey, Parents, Pediatric Cancer Survivors, Posttraumatic Stress Disorder, Prevalence, PTSD, Ratio, Review, Risk, Science, Stress, Symptoms, Systematic, Systematic Review, Transplant Recipients, Traumatic Stress, Web of Science

# Title: Health Psychology Review

Full Journal Title: Health Psychology Review

ISO Abbreviated Title:

JCR Abbreviated Title:

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: Impact Factor

? Smith, J.A. (2011), Evaluating the contribution of interpretative phenomenological analysis. *Health Psychology Review*, **5** (1), 9-27.

Full Text: [2011\Hea Psy Rev5, 9.pdf](2011/Hea%20Psy%20Rev5,%209.pdf)

Abstract: A This paper presents the results of a review of studies employing interpretative phenomenological analysis (IPA) obtained from three of the major databases: web of science, medline and psychinfo. Between 1996 and 2008, 293 papers presenting empirical IPA studies were published. Trends over time are presented. This is followed by a categorisation of the content area of that corpus. The biggest specific area of research within IPA is illness experience, it forming the subject of nearly a quarter of the corpus. The paper then describes a guide for evaluating IPA research which is used to assess the illness experience papers. Detailed summaries are provided of the papers rated as good. These summaries describe the substantive findings as well as the markers of high quality. The paper finishes with a summary of core features of high-quality IPA work.

Keywords: Analysis, Back-Pain, Chronic-Fatigue-Syndrome, Contribution, Databases, Disease, Experience, Identity, Illness Experience, Interpretative Phenomenological Analysis, Medline, Papers, Psychology, Qualitative, Qualitative Research, Quality, Research, Review, Science, Trends, Trustworthiness, Web of Science

? Smith, J.A. (2011), Evaluating the contribution of interpretative phenomenological analysis: A reply to the commentaries and further development of criteria. *Health Psychology Review*, **5** (1), 55-61.

Full Text: [2011\Hea Psy Rev5, 55.pdf](2011/Hea%20Psy%20Rev5,%2055.pdf)

Keywords: Health

# Title: Health Research Policy and Systems

Full Journal Title: [Health Research Policy and Systems](http://www.pubmedcentral.nih.gov/tocrender.fcgi?journal=143&action=archive)

ISO Abbreviated Title:

JCR Abbreviated Title: Health Res Policy Syst

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? González Block, M.A. (2006), The state of international collaboration for health systems research: What do publications tell? *Health Research Policy and Systems*, **4**, 7, doi: 10.1186/1478-4505-4-7.

Full Text: [2006\Hea Res Pol Sys4, 7.pdf](2006/Hea%20Res%20Pol%20Sys4,%207.pdf)

Abstract: AIM: International collaboration for health system development has been identified as a critical input to meet pressing global health needs. North-South collaboration has the potential to benefit both parties, while South-South collaboration offers promise to strengthen capacity rapidly and efficiently across developing countries. There is an emerging trend to analyze the fruits of such collaboration. This paper builds on this trend by applying an innovative concept-based bibliometric method to identify the international scope of collaboration within the field of health policy and systems research. Two key questions are addressed: to what extent are papers comparing developing countries as against reporting on single country studies? To what extent are papers in either case being produced by researchers within their respective countries or through North-South or South-South collaboration? METHODS: A total of 8,751 papers published in MEDLINE between 1999 and 2003 with data on health systems and policies in developing countries were identified and content-analyzed using an innovative concept-based search technology. A sample of 13% of papers was used to identify the corresponding institution and countries covered. The sampled data was then analyzed by income group. RESULTS: Papers with an international, cross-country focus account for only 10% of the total. Just over a third of all papers are led by upper middle income country authors, closely followed by authors from high income countries. Just under half of all papers target low income countries. Cross-country papers are led mostly by institutions in high income countries, with 74% of the total. Only seven countries concentrate 60% of the papers led by developing country institutions. Institutions in the United States and the United Kingdom concentrate between them as many as 68% of the papers led by high income countries. Only 11% of all single-country papers and 21% of multi-country studies are the product of South-South collaboration. Health Financing is the topic with the greatest international scope, with 26% of all papers in the topic. Topics such as Costing and Cost Effectiveness, Finance, Sector Analysis and Insurance, regardless of their national or international scope, are led in 38% to 54% of cases by high income authors. CONCLUSION: While there is modest health systems research capacity in many developing countries for single country studies, capacity is severely limited for multi-country studies. While North-South collaboration is important, the number of international studies is still very limited to produce the kind of knowledge required to learn from experiences across countries. The fact that lead institutions as well as study countries are concentrated in a handful of mostly middle income countries attests to great disparities in research capacity. However, disparities in research capacity and interest are also evident in the North. It is urgent to build cross-country research capacity including appropriate forms of South-South and North-South collaboration.

Keywords: Bibliometric, Capacity, Collaboration, Concentrate, Country, Data, Developing, Developing Countries, Developing Country, Development, Field, Health, Health Policy, Health System, Health Systems, Health Systems Research, Institutions, International, Knowledge, Lead, Methods, Needs, North, Papers, Policies, Policy, Potential, Publications, Reporting, Research, Scope, State, Systems, Technology, Trend, United Kingdom, United States

? Groneberg-Kloft, B., Scutaru, C., Kreiter, C., Kolzow, S., Fischer, A. and Quarcoo, D. (2008), Institutional operating figures in basic and applied sciences: Scientometric analysis of quantitative output benchmarking. *Health Research Policy and Systems*, **6**, 6, doi:10.1186/1478-4505-6-6.

Full Text: [2008\Hea Res Pol Sys6, 6.pdf](2008/Hea%20Res%20Pol%20Sys6,%206.pdf)

Abstract: BACKGROUND: Institutional operating figures and benchmarking systems are important features for the implementation of efficacy in basic and applied sciences. They are needed for research evaluation and funding policy. However, the current policy settings for research evaluation urgently need review since there may be imbalances present in many areas. METHODS: The present study assessed benchmarking of research output. By the use of large data bases research output was categorized and analyzed. Specific areas of major research activity were identified by comparing publication density on different organ systems and inter- and intrafield comparison was performed for selected countries. RESULTS: Novel density-equalizing mappings were constructed that illustrate trends of publication activity and identify subsets of major interest in a total of 5,527,558 published items. A dichotomy was present between Western countries such as the US, UK or Germany and Asian countries such as Japan, China or South Korea concerning research focuses. CONCLUSION: The present study is the first large scale analysis of global research activity and output over the last 50 years. The presently described assessment of operating figures at the national and international level can be used to identify single areas of research that are heavily focused. Further research on qualitative output benchmarking is needed to improve current policy settings for research evaluation.

Keywords: Analysis, Asian, Assessment, Background, Benchmarking, China, Comparison, Constructed, Data, Efficacy, Evaluation, First, Funding, Germany, Implementation, International, Japan, Korea, Methods, Policy, Publication, Publication Activity, Qualitative, Research, Research Evaluation, Review, Scale, Sciences, Systems, Trends, UK, US

# Title: Health Risk & Society

Full Journal Title: [Health Risk & Society](http://www.informaworld.com/smpp/title~db=all~content=t713424479~tab=issueslist)

ISO Abbreviated Title:

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ISSN: 1369-8575

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Subject Categories:

: Impact Factor

? Lewison, G. (2008), The reporting of the risks from severe acute respiratory syndrome (SARS) in the news media, 2003-2004. *Health Risk & Society*, **10** (3), 241-262.

Full Text: [2008\Hea Ris Soc10, 241.pdf](2008/Hea%20Ris%20Soc10,%20241.pdf)

Abstract: This paper analyses coverage of the risks from Severe Acute Respiratory Syndrome (SARS) in March 2003 to April 2004 in 15 news media from seven countries (Canada, France, Germany, Hong Kong, Spain, the UK and the USA) as part of an analysis of risk management for the European Commission. A total of 1014 relevant news articles were found and coded for their presentational tone or ‘scariness,’ the types of risk (health, financial and political) mentioned, the countries involved, and the documents, people and organizations cited. The main period of the epidemic (as reported internationally) lasted 3 months from the end of March to the end of June 2003, by which time over 770 people had died worldwide. In the early weeks, the tone of the articles was somewhat scary, but by the end of May much had been learned about the disease, its likely death rate and how to contain it, and the articles became less numerous and more moderate in tone. Because of the rapid spread of the disease, there was not time for it to become politicized. Some 62 documents were cited in the news articles, mostly research papers. The people and organizations most cited were the WHO, medical personnel, officials, governments, politicians and scientists; the latter tended to make the news articles less scary. Public reaction to the news, in the form of statistics on air travellers to the Far East and to Toronto, Canada, suggests that the health risks of the latter were seen as much less serious than those of the former.

Keywords: SARS, Newspapers, Risk, Research, Scariness, Financial, Political, Health, Genome Sequence, Health-Risks, Communication, Coronavirus, Disease, Newspapers, Epidemic, Coverage, Students, China

? Heyman, B. (2010), Screening for health risks: A social science perspective. *Health Risk & Society*, **12** (1), 1-6.

Full Text: [2010\Hea Ris Soc12, 1.pdf](2010/Hea%20Ris%20Soc12,%201.pdf)

Abstract: Health screening promises to reduce risks to individuals via probabilistic sifting of populations for medical conditions. The categorisation and selection of ‘conditions’ such as cardiovascular events, dementia and depression for screening itself requires prior interpretive labour which usually remains unexamined. Screening systems can take diverse organisational forms and varying relationships to health status, as when purported disease precursors, for example ‘pre-cancerous’ polyps, or supposed risk factors, such as high cholesterol themselves, become targets for screening. Screening at best yields small, although not necessarily unworthwhile, net population health gains. It also creates new risks, leaving some individuals worse-off than if they had been left alone. The difficulties associated with attempting to measure small net gains through randomised controlled trials are sometimes underestimated. Despite endemic doubts about its clinical utility, bibliometric analysis of published papers shows that responses to health risks are coming to be increasingly thought about in terms of screening. This shift is superimposed on a strengthening tendency to view health through the lens of risk. It merits further scrutiny as a societal phenomenon.

Keywords: Bibliometric Analysis, Depression, Health Conditions, Health Risk Management, Health Risks, Papers, Population Health, Risk Thinking, Screening

? Heyman, B. (2010), Screening for health risks: A second editorial. *Health Risk & Society*, **12** (2), 81-84.

Full Text: [2010\Hea Ris Soc12, 81.pdf](2010/Hea%20Ris%20Soc12,%2081.pdf)

Abstract: This editorial discusses nine papers concerned with health risk screening, and two papers reporting original research on risk management for children and adolescents. Five of the screening papers were published in a previous issue of Health, Risk Society (Vol. 12, No. 1) along with an analytic editorial. This issue (Vol. 12, No. 2) contains an annexe with four additional screening papers plus a second editorial covering all nine papers. The papers illustrate the increasing scope of screening applications ‘from the cradle to the grave’. They cover risk screening for Down’s syndrome (Gross 2010), child welfare and protection (Munro 2010, Parton 2010), Chlamydia (Balfe 2010), mental health service user violence (Langan 2010), Huntingdon’s disease (Leontini 2010), coronary heart disease (Peckham and Hann 2010), cancer (Craddock Lee 2010), and dementia (Milne 2010). The screening papers fall into two strands: one questioning the utility of current systems (Langan 2010, Milne 2010, Munro 2010, Parton 2010, Peckham and Hann 2010); the other presenting original findings concerning the perspectives of eligible candidates (Balfe 2010, Craddock Lee 2010, Gross 2010, Leontini 2010). The two papers concerned with children and adolescents, published in the second part of the present issue, also consider risk perspectives, with particular reference to cultural comparisons. These papers focus on attitudes to and knowledge about sexual health in relation to uncertainty about the future (Davis and Niebes-Davis 2010), and parental views about children’s exposure to environmental pollution (Dabrowska and Wismer 2010).

Keywords: Bibliometric Analysis, Children, Health Conditions, Health Risk Management, Health Risks, Papers, Research, Risk Thinking, Screening

# Title: Health Services Research

Full Journal Title: [Health Services Research](http://www.blackwell-synergy.com/loi/hesr); [Health Services Research](http://infotrac.galegroup.com/itw/infomark/0/1/1/purl=rc18_EAIM_0__jn+%22Health+Services+Research%22?sw_aep=jrycal5)

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Phillips, K.A., Morrison, K.R., Andersen, R. and Aday, L.A. (1998), Understanding the context of healthcare utilization: Assessing environmental and provider-related variables in the behavioral model of utilization. *Health Services Research*, **33** (3), 571-596.

Full Text: Hea Ser Res33, 571.pdf

Abstract: Objective. The behavioral model of utilization, developed by Andersen, Aday, and others, is one of the most frequently used frameworks for analyzing the factors that are associated with patient utilization of healthcare services. However, the use of the model for examining the context within which utilization occurs-the role of the environment and provider-related factors-has been largely neglected. Objective: To conduct a systematic review and analysis to determine if studies of medical care utilization that have used the behavioral model during the last 20 years have included environmental and provider-related variables and the methods used to analyze these variables and potential solutions. Data Sources. The Social Science Citation Index and Science Citation Index. We included all articles from 1975-1995 that cited any of three key articles on the behavioral model, that included all articles that were empirical analyses and studies of formal medical care utilization, and articles that specifically stated their use of the behavioral model (n = 139). Study Design. Design was a systematic literature review. Data Analysis. We use a structured review process to code articles on whether they included contextual variables: (1) environmental variables (characteristics of the healthcare delivery system, external environment, and community-level enabling factors); and (2) provider-related variables (patient factors that may be influenced by providers and provider characteristics that interact with patient characteristics to influence utilization). We also examined the methods used in studies that included contextual variables. Principal Findings. Forty-five percent of the studies included environmental variables and 50 percent included provider-related variables. Few studies examined specific measures of the healthcare system or provider characteristics or used methods other than simple regression analysis with hierarchical entry of variables. Only 14 percent of studies analyzed the context of healthcare by including both environmental and provider-related variables as well as using relevant methods.

Keywords: Utilization Behavior, Behavioral Model, Context of Healthcare Utilization, Methods, National Insured Population, Medical-Care, Physician Utilization, United-States, Services, Access, Women, Multivariate, Patterns, Matter

Clancy, C. and Simpson, L. (1998), Looking forward to impact: Moving beyond serendipity. *Health Services Research*, **37** (4), xiv-xxiii.

Full Text: [H\Hea Ser Res37, xiv.pdf](H/Hea%20Ser%20Res37,%20xiv.pdf)

? Cooper, R.A., Getzen, T.E. and Laud, P. (2003), Economic expansion is a major determinant of physician supply and utilization. *Health Services Research*, **38** (2), 675-696.

Full Text: [2003\Hea Ser Res38, 675.pdf](2003/Hea%20Ser%20Res38,%20675.pdf)

Abstract: Objective. To assess the relationship between levels of economic development and the supply and utilization of physicians. Data Sources Data were obtained from the American Medical Association, American Osteopathic Association, Organization for Economic Cooperation and Development (OECD), Bureau of Health Professions, Bureau of Labor Statistics, Bureau of Economic Analysis, Census Bureau, Health Care Financing Administration, and historical sources. Study Design. Economic development, expressed as real per capita gross domestic product (GDP) or personal income, was correlated with per capita health care labor and physician supply within countries and states over periods of time spanning 25-70 years and across countries, states, and metropolitan statistical areas (MSAs) at multiple points in time over periods of up to 30 years. Longitudinal data were analyzed in four complementary ways: (1) simple univariate regressions; (2) regressions in which temporal trends were partialled out; (3) time series comparing percentage differences across segments of time; and (4) a bivariate Granger causality test. Cross-sectional data were assessed at multiple time points by means of univariate regression analyses.  
Principal Findings. Under each analytic scenario; physician supply correlated with differences in GDP or personal income. Longitudinal correlations were associated with temporal lags of approximately 5 years for health employment and 10 years for changes in physician supply. The magnitude of changes in per capita physician supply in the United States was equivalent to differences of approximately 0.75 percent for each 1.0 percent difference in GDP. The greatest effects of economic expansion were on the medical specialties, whereas the surgical and hospital-based specialties were affected to a lesser degree, and levels of economic expansion had little influence on family/general practice. Conclusions. Economic expansion has a strong, lagged relationship with changes in physician supply. This suggests that economic projections could serve as a gauge for projecting the future utilization of physician services.

Keywords: Physician Supply, Health Care Expenditures, Health Care Labor Force, Health-Care, United-States, Nonphysician Clinician, Workforce, Shortage, Services, Reform

# Title: Health & Social Care in the Community

Full Journal Title: Health & Social Care in the Community

ISO Abbreviated Title:

JCR Abbreviated Title:

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: Impact Factor

? Robertson, J., Hatton, C., Wells, E., Collins, M., Langer, S., Welch, V. and Emerson, E. (2011), The impacts of short break provision on families with a disabled child: An international literature review. *Health & Social Care in the Community*, **19** (4), 337-371.

Abstract: There are widespread assumptions about the potential impacts of short breaks on family carers and disabled children. This review aims to evaluate the existing international research evidence concerning the impacts of short breaks on families with a disabled child. Electronic literature searches were conducted using ASSIA, PsycInfo, CINAHL, and Web of Science, and requests for information were sent to selected email lists. of 60 articles or reports identified for inclusion in the review, the vast majority of studies were cross-sectional, with only eight studies using quasi-experimental pre-post designs or longitudinal designs. Nonetheless, the consistency with which sonic findings have been reported suggests that short breaks appear to have the potential to positively impact on not only the well-being of carers, but also the children receiving short breaks and their families as a whole. Additional research is warranted in a number of areas. First, research needs to consider the impact of short breaks on fathers. Second, there is a need to consider in more depth how short breaks can impact on the siblings of disabled children. Third, research could consider how best short breaks can be combined with other interventions to maximise the impact for disabled children and their families. Fourth, research needs to look at the longer term impact of short breaks on outcomes for disabled children and their families. What is needed is evidence on what type of short breaks are best for children and families with particular characteristics at particular times during the course of the child’s maturation towards adulthood.

Keywords: Carers, Child, Children, Developmental-Disabilities, Disabled Children, Families, Home, Hospice Program, Impact, Information, Interventions, Life, Literature, Literature Review, Needs, Outcomes, Parents, Quality, Research, Residential Respite Care, Respite, Review, Science, Short Breaks, Support, Web of Science, Young-People

# Title: Health Technology Assessment

Full Journal Title: [Health Technology Assessment](http://www.hta.ac.uk/project/htapubs.asp)

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JCR Abbreviated Title: Health Technol Assess

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: Impact Factor

? Mowatt, G., Bower, D.J., Brebner, J.A., Cairns, J.A., Grant, A.M. and Mckee, L. (1997), When and how to assess fast-changing technologies: A comparative study of medical applications of four generic technologies. *Health Technology Assessment*, **1** (14), 1-149.

Full Text: [1997\Hea Tec Ass1-14, 1.pdf](1997/Hea%20Tec%20Ass1-14,%201.pdf)

Abstract: OBJECTIVES. To try to identify the optimal time at which to start assessing new and fast-evolving health technologies. To provide insight into factors influencing the timing of assessments and the choice of methods for assessing new and fast-changing technologies. HOW THE RESEARCH WAS CONDUCTED. A series of literature reviews were undertaken covering the general principles involved in the timing of health technology assessments (HTAs). Additionally, the reported assessments of laparoscopic cholecystectomy, chorionic villus sampling (CVS), teleradiology, teledermatology, genetic screening for predisposition to breast cancer, and gene therapy for cystic fibrosis were reviewed to try to identify the factors that influenced the timing of these assessments. Key individuals in each field were also interviewed. The selected technologies allowed comparison between those that were new and evolving and those that were relatively well-established. A bibliometric study of publication trends was also undertaken to see whether these trends would suggest points in the development of a technology that could be used as indicators that assessment should be started. RESEARCH FINDINGS. TIMING. The precise point at which assessment should start was not identified but the bibliometric study suggested that extending this approach might give useful results. For all health technologies, more regular reporting of outcomes and side-effects should be encouraged during the period after initial assessment and, where the technology is fast-changing, reassessment should take place from time to time. The precise intervals were not identified and the problem remains of deciding when a technology has changed enough to warrant reassessment. FACTORS INFLUENCING TIMING. Published reports of assessments did not generally specify the reasons for their timing, but a number of factors appear to have influenced the timing of those assessments, directly or indirectly. Product champions and opinion leaders pioneer the introduction of new technologies into clinical practice, and their reports may lead to the rapid diffusion of such technologies before they have been adequately evaluated, as was the case with laparoscopic cholecystectomy; this diffusion may limit the methods of evaluation that can then be used. It is therefore important to assess new health technologies before diffusion takes place. The extent to which regulatory control is imposed on the introduction of new health technologies can also influence the timing of assessments. Such controls might have helped to restrict the diffusion of laparoscopic cholecystectomy, making a large and widely generalisable randomised controlled trial (RCT) feasible. The source and availability of funding for studies may influence the nature and timing of trials. Many telemedicine evaluations were funded by commercial telecommunications organisations and were thus restricted in their timing (and biased towards the technological aspects of the applications) by the availability of funds. Media coverage undoubtedly has an influence although this influence is not always predictable; it may generate ‘favourable’ publicity about new health technologies, which can lead to immediate demands for the new technique, as was the case with laparosocpic cholecystectomy with its apparent benefits. Thus assessments should be made before media coverage exerts popular pressure on purchasers to adopt the technology and dissuades patients from participating in RCTs (because of fear they may be randomised to the standard treatment as occurred in a US trial of CVS). Innovators should also be cautious in the claims that they make to the media.

Keywords: Approach, Assessing, Assessment, Assessments, Availability, Bibliometric, Bibliometric Study, Breast Cancer, Cancer, Choice, Cholecystectomy, Clinical, Clinical Practice, Comparative Study, Comparison, Control, Controlled Trial, Coverage, Cystic Fibrosis, Development, Diffusion, Evaluation, Fear, Fibrosis, Field, Funding, Gene, General, Genetic, Genetic Screening, Health, Indicators, Intervals, Laparoscopic, Lead, Literature, Media, Medical, Methods, Objectives, Outcomes, Patients, Practice, Pressure, Principles, Publication, Randomised, Randomised Controlled Trial, RCT, Reporting, Research, Reviews, Sampling, Screening, Side Effects, Source, Standard, Technologies, Technology, Telemedicine, Teleradiology, Therapy, Timing, Treatment, Trends, Trial, US

? Picot, J., Jones, J., Colquitt, J.L., Gospodarevskaya, E., Loveman, E., Baxter, L. and Clegg, A.J. (2009), The clinical effectiveness and cost-effectiveness of bariatric (weight loss) surgery for obesity: A systematic review and economic evaluation. *Health Technology Assessment*, **13** (41), 1-214.

Full Text: [2009\Hea Tec Ass13-41, 1.pdf](2009/Hea%20Tec%20Ass13-41,%201.pdf)

Abstract: Objectives: To assess the clinical effectiveness and cost-effectiveness of bariatric surgery for obesity. Data sources: Seventeen electronic databases were searched [MEDLINE; EMBASE; PreMedline In-Process & Other Non-Indexed Citations; The Cochrane Library including the Cochrane Systematic Reviews Database, Cochrane Controlled Trials Register, DARE, NHS EED and HTA databases; Web of Knowledge Science Citation Index (SCI); Web of Knowledge ISI Proceedings; PsycInfo; CRD databases; BIOSIS; and databases listing ongoing clinical trials] from inception to August 2008. Bibliographies of related papers were assessed and experts were contacted to identify additional published and unpublished references Review methods: Two reviewers independently screened titles and abstracts for eligibility. Inclusion criteria were applied to the full text using a standard form. Interventions investigated were open and laparoscopic bariatric surgical procedures in widespread current use compared with one another and with non-surgical interventions. Population comprised adult patients with body mass index (BMI) >= 30 and young obese people. Main outcomes were at least one of the following after at least 12 months follow-up: measures of weight change; quality of life (QoL); perioperative and postoperative mortality and morbidity; change in obesity-related comorbidities; cost-effectiveness. Studies eligible for inclusion in the systematic review for comparisons of Surgery versus Surgery were RCTs. For comparisons of Surgery versus Non-surgical procedures eligible studies were RCTs, controlled clinical trials and prospective cohort studies (with a control cohort). Studies eligible for inclusion in the systematic review of cost-effectiveness were full cost-effectiveness analyses, cost-utility analyses, cost-benefit analyses and cost-consequence analyses. One reviewer performed data extraction, which was checked by two reviewers independently. Two reviewers independently applied quality assessment criteria and differences in opinion were resolved at each stage. Studies were synthesised through a narrative review with full tabulation of the results of all included studies. In the economic model the analysis was developed for three patient populations, those with BMI >= 40; BMI >= 30 and < 40 with Type 2 diabetes at baseline; and BMI >= 30 and < 35. Models were applied with assumptions on costs and comorbidity. Results: A total of 5386 references were identified of which 26 were included in the clinical effectiveness review: three randomised controlled trials (RCTs) and three cohort studies compared surgery with nonsurgical interventions and 20 RCTs compared different surgical procedures. Bariatric surgery was a more effective intervention for weight loss than non-surgical options. In one large cohort study weight loss was still apparent 10 years after surgery, whereas patients receiving conventional treatment had gained weight. Some measures of QoL improved after surgery but not others. After surgery statistically fewer people had metabolic syndrome and there was higher remission of Type 2 diabetes than in non-surgical groups. In one large cohort study the incidence of three out of six comorbidities assessed 10 years after surgery was significantly reduced compared with conventional therapy. Gastric bypass (GBP) was more effective for weight loss than vertical banded gastroplasty (VBG) and adjustable gastric banding (AGB). Laparoscopic isolated sleeve gastrectomy (LISG) was more effective than AGB in one study. GBP and banded GBP led to similar weight loss and results for GBP versus LISG and VBG versus AGB were equivocal. All comparisons of open versus laparoscopic surgeries found similar weight losses in each group. Comorbidities after surgery improved in all groups, but with no significant differences between different surgical interventions. Adverse event reporting varied; mortality ranged from none to 10%. Adverse events from conventional therapy included intolerance to medication, acute cholecystitis and gastrointestinal problems. Major adverse events following surgery, some necessitating reoperation, included anastomosis leakage, pneumonia, pulmonary embolism, band slippage and band erosion. Bariatric surgery was cost-effective in comparison to non-surgical treatment in the reviewed published estimates of cost-effectiveness. However, these estimates are likely to be unreliable and not generalisable because of methodological shortcomings and the modelling assumptions made. Therefore a new economic model was developed. Surgical management was more costly than non-surgical management in each of the three patient populations analysed, but gave improved outcomes. For morbid obesity, incremental cost-effectiveness ratios (ICERs) (base case) ranged between 2000 pound and 4000 pound per QALY gained. They remained within the range regarded as cost-effective from an NHS decision-making perspective when assumptions for deterministic sensitivity analysis were changed. For BMI >= 30 and < 40, ICERs were 18,930 pound at two years and 1397 pound at 20 years, and for BMI >= 30 and < 35, ICERs were 60,754 pound at two years and 12,763 pound at 20 years. Deterministic and probabilistic sensitivity analyses produced ICERs which were generally within the range considered cost-effective, particularly at the long twenty year time horizons, although for the BMI 30-35 group some ICERs were above the acceptable range. Conclusions: Bariatric surgery appears to be a clinically effective and cost-effective intervention for moderately to severely obese people compared with non-surgical interventions. Uncertainties remain and further research is required to provide detailed data on patient QoL; impact of surgeon experience on outcome; late complications leading to reoperation; duration of comorbidity remission; resource use. Good-quality RCTs will provide evidence on bariatric surgery for young people and for adults with class I or class II obesity. New research must report on the resolution and/or development of comorbidities such as Type 2 diabetes and hypertension so that the potential benefits of early intervention can be assessed.

Keywords: 2-Year Follow-up, Assessment, Body-Mass Index, Cardiovascular Risk-Factors, Change, Citation, Citations, Clinical Trials, Cohort, Comparison, Cost Effectiveness, Costs, Criteria, Database, Databases, Development, Early Intervention, Economic, Effectiveness, Erosion, Evaluation, Groups, Health-Related Utility, Hypertension, Impact, Intervention, Isi, Knowledge, Management, Methods, Model, Modelling, Models, Morbid-Obesity, Mortality, Narrative, Outcomes, Prospective Randomized-Trial, Pulmonary Embolism, Quality-of-Life, Research, Resolution, Review, SCI, Science, Science Citation Index, Sensitivity Analysis, Structured Commercial Program, Surgery, Systematic Review, Therapy, Treatment, Vertical Banded Gastroplasty, Web of Knowledge, Y Gastric Bypass

? Chambers, D., Epstein, D., Walker, S., Fayter, D., Paton, F., Wright, K., Michaels, J., Thomas, S., Sculpher, M. and Woolacott, N. (2009), Endovascular stents for abdominal aortic aneurysms: A systematic review and economic model. *Health Technology Assessment*, **13** (48), 1-214.

Full Text: [2009\Hea Tec Ass13-48, 1.pdf](2009/Hea%20Tec%20Ass13-48,%201.pdf)

Abstract: Objective: To determine the clinical effectiveness and cost-effectiveness of endovascular aneurysm repair (EVAR) of infrarenal abdominal aortic aneurysms (AAAs) in patients at varying levels of risk. Data sources: The following bibliographic databases were searched (2005-February 2007): BIOSIS Previews,(R) CINAHL, Cochrane Central Register of Controlled Trials, EMBASE, ISI Proceedings, MEDLINE,(R) MEDLINE (R) In-Process & Other Non-Indexed Citations, Science Citation Index and Zetoc Conferences. Review methods: A systematic review of the clinical effectiveness of EVAR was performed using standard methods. Meta-analysis was employed to estimate a summary measure of treatment effect on relevant outcomes based on intention to treat analyses. A second systematic review was undertaken to identify existing cost-effectiveness analyses of EVAR compared with open surgery and non-surgical interventions. Two new decision models were developed to inform the review. Results: Six RCTs were included in the clinical effectiveness review. Thirty-four studies evaluated the role of patients’ baseline characteristics in predicting risks of particular outcomes after EVAR. The majority were based on data relating to devices in current use from the EUROSTAR registry. Compared with open repair EVAR reduces operative mortality (odds ratio 0.35, 95% CI 0.19 to 0.63) and medium-term aneurysm-related mortality (hazard ratio 0.49, 95% CI 0.29 to 0.83) but offers no significant difference in all-cause mortality. EVAR is associated with increased rates of complications and reinterventions, which are not offset by any increase in health-related quality of life. EVAR trial 2 comparing EVAR with non-surgical management in patients unfit for open repair found no differences in mortality between groups; however, substantial numbers of patients randomised to non-surgical management crossed over to receive surgical repair of their aneurysm. The cost-effectiveness systematic review identified six published decision models. Both models considered relevant for the decision in the UK concluded that EVAR was not cost-effective on average compared with open repair at a threshold of 20,000 pound per quality-adjusted life-year (QALY). Another model concluded that EVAR would be on average more cost-effective than no surgical intervention in unfit patients at this threshold. The Medtronic model concluded that EVAR was more cost-effective than open repair for fit patients at this threshold. The York economic evaluations found that EVAR is not cost-effective compared with open repair on average at a threshold of 30,000 pound per QALY, with the results very sensitive to model assumptions and the baseline risk of operative mortality. Exploratory analysis to evaluate management options in patients unsuitable for open surgery suggested that the cost-effectiveness of EVAR may be sensitive to aneurysm size and patient’s age at operation. Indicative modelling suggests that EVAR may be cost-effective for small aneurysms in some patient groups. Ongoing RCTs will provide further evidence relating to these patients. Conclusion: Open repair is more likely to be cost-effective than EVAR on average in patients considered fit for open surgery. EVAR is likely to be more cost-effective than open repair for a subgroup of patients at higher risk of operative mortality These results are based on extrapolation of mid-term results of clinical trials. Evidence does not currently support EVAR for the treatment of ruptured aneurysms. Further follow-up of the existing UK trials should be undertaken and the relative costs of procedures and devices should be investigated further.

Keywords: Characteristics, Citation, Citations, Clinical Trials, Cost Effectiveness, Cost-Effectiveness Analysis, Costs, Databases, Economic, Effectiveness, Elective Open Repair, Emergency Open Repair, European Pivotal Trial, Evidence, Groups, Health-Related Quality of Life, High-Risk Patients, Intervention, Isi, Long-Term Survival, Management, Medline, Meta-Analysis, Methods, Model, Modelling, Models, Mortality, Open Surgical Repair, Outcomes, Quality-of-Life, Randomized Controlled-Trial, Review, Risk, Science, Science Citation Index, Surgery, Systematic Review, Treatment, UK, Veterans-Affairs Hospitals

? Black, C., Clar, C., Henderson, R., MacEachern, C., McNamee, P., Quayyum, Z., Royle, P. and Thomas, S. (2009), The clinical effectiveness of glucosamine and chondroitin supplements in slowing or arresting progression of osteoarthritis of the knee: A systematic review and economic evaluation. *Health Technology Assessment*, **13** (52), 1-148.

Full Text: [2009\Hea Tec Ass13-52, 1.pdf](2009/Hea%20Tec%20Ass13-52,%201.pdf)

Abstract: Objective: To assess the clinical effectiveness and cost effectiveness of glucosamine sulphate/hydrochloride and chondroitin sulphate in modifying the progression of osteoarthritis (OA) of the knee. Data sources: Electronic databases were searched from 1950 to 2008 and included: MEDLINE and PUBMED; EMBASE; Cochrane Library (including Cochrane Systematic Reviews Database, CENTRAL, DARE, NHS EED and HTA databases); Allied and Complementary Medicine (AMED); National Research Register (NRR); Web of Science Proceedings; Current Controlled Trials; and Clinical Trials.gov. Other sources included bibliographies of retrieved papers, registered but unpublished trials, internet searches and the Food Standards Agency website. Review methods: A search was conducted for systematic reviews of randomised controlled trials (RCTs), which were used to identify RCTs of at least 12 months’ duration and updated with searches for primary studies. A cost-effectiveness model was constructed using cohort simulation and drawing on available evidence. Sensitivity analysis was undertaken and value of information analysis conducted. A review of studies of mechanism of action was carried out to explore the biological plausibility of the preparations. Results: Five systematic reviews and one clinical guideline met the inclusion criteria. They reported inconsistent conclusions with only modest effects on reported pain and function. A reduction in joint space narrowing was more consistently observed, but the effect size was small and the clinical significance uncertain. A separate review of eight primary trials of > 12 months’ duration showed evidence of statistically significant improvements in joint space loss, pain and function for glucosamine sulphate, but the clinical importance of these differences was not clear. In two studies of glucosamine sulphate, the need for knee arthroplasty was reduced from 14.5% to 6.3% at 8 years’ follow-up. For other preparations of glucosamine, chondroitin and combination therapy, there was less evidence to support a clinical effect. Cost-effectiveness modelling was restricted to glucosamine sulphate. Over a lifetime horizon the incremental cost per quality-adjusted life-year (QALY) gain for adding glucosamine sulphate to current care was estimated to be 21,335 pound. Deterministic sensitivity analysis suggested that the cost-effectiveness of glucosamine sulphate therapy was particularly dependent on the magnitude of the quality of life (QoL) gain, the change in knee arthroplasty probability with therapy and the discount rate. At a cost per QALY gained threshold of 20,000 pound, the likelihood that glucosamine sulphate is more cost-effective than current care is 0.43, while at a threshold of 300,000 pound, the probability rises to 0.73. Probabilistic sensitivity analysis showed that estimates were imprecise and subject to a degree of decision uncertainty. Value of information analysis demonstrated the need for further research. Several biologically plausible mechanisms of action for glucosamine sulphate and chondroitin were proposed. Conclusions: There was evidence that glucosamine sulphate shows some clinical effectiveness in the treatment of OA of the knee. No trial data came from the UK and caution should be exercised in generalising the findings to the UK health-care setting. Cost-effectiveness was not conclusively demonstrated. There was evidence to support the potential clinical impact of glucosamine sulphate. The value of information analysis identified three research priorities: QoL, structural outcomes and knee arthroplasty. The biological mechanism of glucosamine sulphate and chondroitin remains uncertain and, in particular, the proposal that the active substance may be sulphate should be explored further.

Keywords: Analysis, Arthroplasty, Articular-Cartilage Explants, Chondrocyte-Mediated Catabolism, Clinical Effectiveness, Cochrane, Combination Therapy, Cost-Effectiveness, Databases, Double-Blind, Effectiveness, Embase, Evaluation, Follow-up, Gene-Expression, Health Care, Healthy Male-Volunteers, Impact, Information, Joint Space, Mechanism, Mechanism of Action, Medline, Model, Oral Glucosamine, Outcomes, Pain, Papers, Placebo-Controlled Trial, Primary, Pubmed, Quality of Life, Randomized Controlled-Trials, Research, Review, Risk-Factors, Science, Systematic, Systematic Review, Systematic Reviews, Therapy, Treatment, UK, Web of Science

? Burch, J., Paulden, M., Conti, S., Stock, C., Corbett, M., Welton, N.J., Ades, A.E., Sutton, A., Cooper, N., Elliot, A.J., Nicholson, K., Duffy, S., McKenna, C., Stewart, L., Westwood, M. and Palmer, S. (2009), Antiviral drugs for the treatment of influenza: A systematic review and economic evaluation. *Health Technology Assessment*, **13** (58), 1-290.

Full Text: [2009\Hea Tec Ass13, 1.pdf](2009/Hea%20Tec%20Ass13,%201.pdf)

Abstract: Objectives: To evaluate the clinical effectiveness (including adverse events) and cost-effectiveness of antivirals for the treatment of naturally acquired influenza for ‘at-risk’ and otherwise healthy populations. Data sources: Eleven electronic databases (MEDLINE, EMBASE, Cumulative Index to Nursing and Allied Health Literature, Pascal, Science Citation Index, BIOSIS, Latin American and Caribbean Health Sciences, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, Database of Abstracts of Reviews of Effects, and Health Technology Assessment Database) were searched from October 2001 to November 2007. A supplementary search was undertaken in June 2008 for information relating to drug resistance during the 2007-8 influenza season. Review methods: Systematic reviews of the evidence on the clinical effectiveness and cost-effectiveness of antivirals for the treatment of influenza were undertaken. Twenty-nine randomised controlled trials comparing antivirals with each other, placebo, or best symptomatic care were included in the evaluation of clinical effectiveness in patients presenting with an influenza-like illness (ILI). Primary outcomes were measures of symptom duration (median time to alleviation of symptoms and median time to return to normal activity). Incidence of complications, mortality, hospitalisations, antibiotic use (as a surrogate for complications) and adverse events was also assessed. In addition, an independent decision model was developed to evaluate the cost-effectiveness of antiviral treatment from the perspective of the UK NHS. Results: Amantadine was excluded at an early stage, owing to a lack of any new trials that met the inclusion criteria and the limitations of the existing evidence. The review therefore focused on the neuraminiclase inhibitors (NIs) oseltarrivir and zanarnivir, both of which were found to be effective in reducing symptom duration (zanamavir by 0.5- 1.0 days and oseltarnivir by 0.5-1.5 days). However, the effect sizes were often small and unlikely to be clinically significant in many cases, particularly in healthy adults. For the at-risk subgroups, effect sizes for differences in symptom duration were generally larger, and potentially more clinically significant, than those seen in healthy adults (median duration of symptoms reduced by 1-2 days with zanarnivir and 0.50-0.75 days with oseltarnivir). However, there was greater uncertainty around these results, with estimates often failing to reach statistical significance. The most consistent data and strongest evidence related to antibiotic use, with both zanarnivir and oseltarnivir resulting in statistically significant reductions in antibiotic use. In general, the estimates from the cost-effectiveness model were more favourable in at-risk populations (including adults and children with comorbid conditions and the elderly) compared with otherwise healthy populations. Zanamivir was the optimal NI treatment in each of the at-risk populations considered, and oseltarnivir was optimal for healthy populations (both adults and children). Conclusions: The clinical effectiveness data for population subgroups used to inform the multiparameter evidence synthesis and costeffectiveness modelling were, in places, limited and this should be borne in mind when interpreting the findings of this review. Trials were often not designed to determine clinical effectiveness in population subgroups and hence, although the direction of effect was clear, estimates of differences in symptom duration tended to be subject to greater uncertainty in subgroups. Despite some concerns, the use of Nis in at-risk populations appeared to be a cost-effective approach for the treatment of influenza. Well-designed observational studies might also be considered to evaluate the clinical course of influenza in terms of complications, hospitalisation, mortality and quality of life, as well as the impact of Nis.

Keywords: B Virus-Infections, Citation, Cost-Effectiveness Analysis, Database, Double-Blind, Elderly, Evaluation, High-Risk Population, Impact, Inhaled Zanamivir, Literature, Medical Decision-Making, Medline, Mixed Treatment Comparisons, Neuraminidase Inhibitor Zanamivir, Otherwise Healthy-Adults, Randomized Controlled-Trial, Review, Science Citation Index, Systematic Review, Treatment, UK

? Bond, M., Wyatt, K., Lloyd, J., Welch, K. and Taylor, R. (2009), Systematic review of the effectiveness and cost-effectiveness of weight management schemes for the under fives: A short report. *Health Technology Assessment*, **13** (61), 1-99.

Full Text: [2009\Hea Tec Ass13-61, 1.pdf](2009/Hea%20Tec%20Ass13-61,%201.pdf)

Abstract: Objective: To search for, review and synthesise studies of the effectiveness and cost-effectiveness of weight management schemes for the under fives. Data sources: MEDLINE [Ovid], MEDLINE In-Process [Ovid], EMBASE (Ovid], CAB [Ovid], Health Management Information Consortium [Ovid],The Cochrane Database of Systematic Reviews, Cochrane Register of Controlled Trials, Science Citation Index Expanded [Web of Science], Conference Proceedings Citation Index [The Web of Science], Database of Abstract Reviews [CRD; Centre for Reviews and Dissemination], HTA [CRD], PsycINFO [Ebsco], NHS CRD. These databases were searched from 1990 to February 2009. Supplementary internet searches were additionally conducted. Review methods: Relevant clinical effectiveness studies were identified in two stages. Titles and abstracts returned by the search strategy were examined independently by three researchers and screened for possible inclusion. Disagreements were resolved by discussion. Full texts of the identified studies were obtained. Three researchers examined these independently for inclusion or exclusion, and disagreements were again resolved by discussion. Results: One of the randomised controlled trials (RCTs) was from the UK. It measured the effects of a physical activity intervention for children in nurseries combined with home-based health education for their parents; this was compared to usual care. The main outcome measure was body mass index (BMI); secondary measures were weight and physical activity. At the 12-month follow-up, no statistically significant differences were found between the groups on any measure. However, a trend, favouring the intervention, was found for BMI and weight. The other two RCTs were from the USA. The larger trial investigated the effects of a combined preschool and home intervention in African American and Latino communities. Nutrition education and physical activity programmes were aimed at under fives in preschool. The home component consisted of related health education and homework for the parents, who received a small financial reward on completion. The I - and 2-year results for the African American sites showed a significantly slower rate of increase in BMI than for results at baseline, for the intervention group than for the control group. However, in the Latino communities no such differences were found. The second US trial was a much smaller home-based parental education programme in Native American communities in the USA and Canada. The intervention consisted of a parental skills course for parents to improve their children’s diet and physical activity.This was compared with a course providing skills to improve child behaviour. Follow-up was at 16 weeks and showed no significant differences between groups in BMI. Conclusions: No controlled trials addressing the issue of treating obesity or evidence of cost-effectiveness studies in the under fives’ population were found. From the three prevention studies, apart from the larger US trial, the interventions showed no statistically significant differences in BMI and weight between the intervention and control groups (although there was some evidence of positive trends for BMI and weight). It should also be noted that these conclusions are based on only three dissimilar studies, thereby making the drawing of firm conclusions difficult. Further research is urgently needed in well-designed UK-based RCTs of weight management schemes aimed at the prevention of obesity, that combine with cost-effectiveness studies targeted at preschool children with long-term follow-up.

Keywords: Body-Mass Index, Childhood Obesity, Citation, Database, Education, Groups, Hip-Hop, Medline, Obesity Prevention Program, Pediatric Obesity, Physical-Activity, Preschool-Children, Quality-of-Life, Randomized-Trials, Research, Review, Science Citation Index, Sedentary Behaviors, UK

? Craig, D., McDaid, C., Fonseca, T., Stock, C., Duffy, S. and Woolacott, N. (2009), Are adverse effects incorporated in economic models? An initial review of current practice. *Health Technology Assessment*, **13** (62), 1-182.

Full Text: [2009\Hea Tec Ass13-62, 1.pdf](2009/Hea%20Tec%20Ass13-62,%201.pdf)

Abstract: Objectives: To identify methodological research on the incorporation of adverse effects in economic models and to review current practice. Data sources: Major electronic databases (Cochrane Methodology Register, Health Economic Evaluations Database, NHS Economic Evaluation Database, EconLit, EMBASE, Health Management Information Consortium, IDEAS, MEDLINE and Science Citation Index) were searched from inception to September 2007. Health technology assessment (HTA) reports commissioned by the National Institute for Health Research (NIHR) HTA programme and published between 2004 and 2007 were also reviewed. Review methods: The reviews of methodological research on the inclusion of adverse effects in decision models and of current practice were carried out according to standard methods. Data were summarised in a narrative synthesis. Results: Of the 719 potentially relevant references in the methodological research review, five met the inclusion criteria; however, they contained little information of direct relevance to the incorporation of adverse effects in models. Of the 194 HTA monographs published from 2004 to 2007, 80 were reviewed, covering a range of research and therapeutic areas. In total, 85% of the reports included adverse effects in the clinical effectiveness review and 54% of the decision models included adverse effects in the model; 49% included adverse effects in the clinical review and model. The link between adverse effects in the clinical review and model was generally weak; only 3/80 (<4%) used the results of a meta-analysis from the systematic review of clinical effectiveness and none used only data from the review without further manipulation. Of the models including adverse effects, 67% used a clinical adverse effects parameter, 79% used a cost of adverse effects parameter, 86% used one of these and 60% used both. Most models (83%) used utilities, but only two (2.5%) used solely utilities to incorporate adverse effects and were explicit that the utility captured relevant adverse effects; 53% of those models that included utilities derived them from patients on treatment and could therefore be interpreted as capturing adverse effects. In total, 30% of the models that included adverse effects used withdrawals related to drug toxicity and therefore might be interpreted as using withdrawals to capture adverse effects, but this was explicitly stated in only three reports. Of the 37 models that did not include adverse effects, 18 provided justification for this omission, most commonly lack of data; 19 appeared to make no explicit consideration of adverse effects in the model. Conclusions: There is an implicit assumption within modelling guidance that adverse effects are very important but there is a lack of clarity regarding how they should be dealt with and considered in modelling. In many cases a lack of clear reporting in the HTAs made it extremely difficult to ascertain what had actually been carried out in consideration of adverse effects. The main recommendation is for much clearer and explicit reporting of adverse effects, or their exclusion, in decision models and for explicit recognition in future guidelines that ‘all relevant outcomes’ should include some consideration of adverse events.

Keywords: Assessment, Chronic Hepatitis-C, Citation, Clinical Effectiveness, Cognitive-Behavioral Therapy, Cost-Effectiveness Analysis, Database, Drug-Reactions, Evaluation, Health Technology-Assessment, Ideas, Medline, Meta-Analysis, Pegylated Interferon Alpha-2A, Randomized Controlled-Trial, Rapid Diagnostic-Tests, Research, Review, Science Citation Index, Systematic Review, Systematic Reviews, Treatment

? Mowatt, G., Zhu, S., Kilonzo, M., Boachie, C., Fraser, C., Griffiths, T.R.L., N’Dow, J., Nabi, G., Cook, J. and Vale, L. (2010), Systematic review of the clinical effectiveness and cost-effectiveness of photodynamic diagnosis and urine biomarkers (FISH, ImmunoCyt, NMP22) and cytology for the detection and follow-up of bladder cancer. *Health Technology Assessment*, **14** (4), 1-356.

Full Text: [2010\Hea Tec Ass14, 1.pdf](2010/Hea%20Tec%20Ass14,%201.pdf)

Abstract: Objective: To assess the clinical effectiveness and cost-effectiveness of photodynamic diagnosis (PDD) compared with white light cystoscopy (WLC), and urine biomarkers [fluorescence in situ hybridisation (FISH), ImmunoCyt, NMP22] and cytology for the detection and follow-up of bladder cancer. Data sources: Major electronic databases including MEDLINE, MEDLINE In-Process, EMBASE, BIOSIS, Science Citation Index, Health Management Information Consortium and the Cochrane Controlled Trials Register were searched until April 2008. Review methods: A systematic review of the literature was carried out according to standard methods. An economic model was constructed to assess the cost-effectiveness of alternative diagnostic and follow-up strategies for the diagnosis and management of patients with bladder cancer. Results: In total, 27 studies reported PDD test performance. In pooled estimates [95% confidence interval (Cl)] for patient-level analysis, PDD had higher sensitivity than WLC [92% (80% to 100%) versus 71% (49% to 93%)] but lower specificity [57% (36% to 79%) versus 72% (47% to 96%)]. Similar results were found for biopsy-level analysis. The median sensitivities (range) of PDD and WLC for detecting lower risk, less aggressive tumours were similar for patient-level detection [92% (20% to 95%) versus 95% (8% to 100%)], but sensitivity was higher for PDD than for WLC for biopsy-level detection [96% (88% to 100%) versus 88% (74% to 100%)]. For more aggressive, higher-risk tumours the median sensitivity of PDD for both patient-level [89% (6% to 100%)] and biopsy-level [99% (54% to 100%)] detection was higher than those of WLC [56% (0% to 100%) and 67% (0% to 100%) respectively]. Four RCTs comparing PDD with WLC reported effectiveness outcomes. PDD use at transurethral resection of bladder tumour resulted in fewer residual tumours at check cystoscopy [relative risk, RR, 0.37 (95% Cl 0.20 to 0.69)] and longer recurrence-free survival [RR 1.37 (95% Cl 1.18 to 1.59)] compared with WLC. In 71 studies reporting the performance of biomarkers and cytology in detecting bladder cancer, sensitivity (95% CI) was highest for ImmunoCyt [84% (77% to 91%)] and lowest for cytology [44% (38% to 51%)], whereas specificity was highest for cytology [96% (94% to 98%)] and lowest for ImmunoCyt [75% (68% to 83%)]. In the cost-effectiveness analysis the most effective strategy in terms of true positive cases (44) and life-years (11.66) [flexible cystoscopy (CSC) and ImmunoCyt followed by PDD in initial diagnosis and CSC followed by WLC in follow-up] had an incremental cost per life-year of over 270,000 pound. The least effective strategy [cytology followed by WLC in initial diagnosis (average cost over 20 years L 1403, average life expectancy 11.59)] was most likely to be considered cost-effective when society’s willingness to pay was less than 00,000 per life-year. No strategy was cost-effective more than 50% of the time, but four of the eight strategies in the probabilistic sensitivity analysis (three involving a biomarker or PDD) were each associated with a 20% chance of being considered cost-effective. In sensitivity analyses the results were most sensitive to the pretest probability of disease (5% in the base case). Conclusions: The advantages of PDD’s higher sensitivity in detecting bladder cancer have to be weighed against the disadvantages of a higher false-positive rate. Taking into account the assumptions made in the model, strategies involving biomarkers and/or PDD provide additional benefits at a cost that society might be willing to pay. Strategies replacing WLC with PDD provide more life-years but it is unclear whether they are worth the extra cost.

Keywords: 5-Aminolevulinic Acid, Bta Stat Test, Cancer, Care Proteomic Assay, Citation, Databases, Diagnosis, In-Situ Hybridization, Induced Fluorescence Endoscopy, Induced Porphyrin Fluorescence, Literature, Medical-Research-Council, Medline, Nuclear-Matrix Protein-22, Positive, Review, Science, Science Citation Index, Systematic Review, Transitional-Cell Carcinoma, White-Light Cystoscopy

? Cummins, E., Royle, P., Snaith, A., Greene, A., Robertson, L., McIntyre, L. and Waugh, N. (2010), Clinical effectiveness and cost-effectiveness of continuous subcutaneous insulin infusion for diabetes: Systematic review and economic evaluation. *Health Technology Assessment*, **14** (11), 1-208.

Full Text: [2010\Hea Tec Ass14-11, 1.pdf](2010/Hea%20Tec%20Ass14-11,%201.pdf)

Abstract: Background: The National Institute for Health and Clinical Excellence (NICE) was reviewing its previous guidance on continuous subcutaneous insulin infusion (CSII). The review provided an assessment of evidence which had been published since the previous NICE appraisal (TA 151) in 2007. Objectives: To examine the clinical effectiveness and cost-effectiveness of using CSII to treat diabetes. To update the previous assessment report by reviewing evidence that has emerged since the last appraisal, and to take account of developments in alternative therapies, in particular the long-acting analogue insulins, which cause fewer problems with hypoglycaemia. Data sources:A systematic review of the literature and an economic evaluation were carried out. The bibliographic databases used were MEDLINE and EMBASE, 2002 to June 2007. The Cochrane Library (all sections), the Science Citation Index (for meeting abstracts only) and the website of the 2007 American Diabetes Association were also searched. Review methods: The primary focus for type I diabetes mellitus (TI DM) was the comparison of CSII with multiple daily injection (MDI), based on the newer insulin analogues, but trials of neutral protamine Hagedorn (NPH)-based MDI that had been published since the last assessment were identified and described in brief. For type 2 diabetes mellitus (T2DM), all trials of MDI versus CSII were included, whether the longacting insulin was analogue or not, because there was no evidence that analogue-based MDI was better than NPH-based MDI. Trials that were shorter than 12 weeks were excluded. Information on the patients’ perspectives was obtained from four sources: the submission from the pump users group Insulin Pump Therapy (INPUT); interviews with parents of young children who were members of INPUT; some recent 2010 Queen’s Printer and Controller of HMSO. All rights reserved. studies; and from a summary of findings from the previous assessment report. Economic modelling used the Center for Outcomes Research (CORE) model, through an arrangement with the NICE and the pump manufacturers, whose submission also used the CORE model. Results: The 74 studies used for analysis included eight randomised controlled trials (RCTs) of CSII versus analogue-based MDI in either T I DM or T2DM, eight new (since the last NICE appraisal) RCTs of CSII versus NPH-based MDI in TI DM, 48 observational studies of CSII, six studies of CSII in pregnancy, and four systematic reviews. The following benefits of CSII were highlighted: better control of blood glucose levels, as reflected by glycated haemoglobin (HbAk) levels, with the size of improvement depending on the level before starting CSII; reduction in swings in blood glucose levels, and in problems due to the dawn phenomenon; fewer problems with hypoglycaemic episodes; reduction in insulin dose per day, thereby partly off-setting the cost of CSII; improved quality of life, including a reduction in the chronic fear of severe hypoglycaemia; more flexibility of lifestyle no need to eat at fixed intervals, more freedom of lifestyle and easier participation in social and physical activity; and benefits for the patients’ family. The submission from INPUT emphasised the quality of life gains from CSII, as well as improved control and fewer hypoglycaemic episodes.Also, there was a marked discrepancy between the improvement in social quality of life reported by successful pump users, and the lack of convincing health-related quality of life gains reported in the trials. With regard to economic evaluation, the main cost of CSII is for consumables, such as tubing and cannulas, and is about 800-2000 pound per year The cost of the pump, assuming 4-year life, adds another 430-720 pound per annum. The extra cost compared with analogue-based MDI averages 1700. Most studies, assuming a reduction in HbA(1c) level of 1.2%, found CSII to be cost-effective. Limitations: The most important weakness of the evidence was the very small number of randomised trials of CSII against the most modern forms of MDI, using analogue insulins. Conclusions: Based on the totality of evidence, using observational studies to supplement the limited data from randomised trials against best MDI, CSII provides some advantages over MDI in T I DM for both children and adults. However, there was no evidence that CSII is better than analogue-based MDI in T2DM or in pregnancy. Further trials with larger numbers and longer durations comparing CSII and optimised MDI in adults, adolescents and children are needed. In addition, there should be a trial of CSII versus MDI with similar provision of structured education in both arms. A trial is also needed for pregnant women with pre-existing diabetes, to investigate using CSII to the best effect.

Keywords: Adolescents, Assessment, Basal-Bolus Regimen, Bedtime NPH Insulin, Children, Citation, Comparison, Core, Cost Effectiveness, Databases, Economic, Education, Evaluation, Health-Related Quality of Life, Improved Glycemic Control, Input, Literature, Long-Term, Medline, Meeting Abstracts, Methods, Model, Modelling, Multiple Daily Injections, Neutral Protamine Hagedorn, Pregnancy, Primary, Pump Therapy, Quality-of-Life, Randomized Cross-Over, Reduction, Regular Human Insulin, Research, Review, Science, Science Citation Index, Systematic Review, Ti

? Clar, C., Barnard, K., Cummins, E., Royle, P. and Waugh, N. (2010), Self-monitoring of blood glucose in type 2 diabetes: Systematic review. *Health Technology Assessment*, **14** (12), 1-140.

Full Text: [2010\Hea Tec Ass14-12, 1.pdf](2010/Hea%20Tec%20Ass14-12,%201.pdf)

Abstract: Objectives: To examine whether or not self-monitoring of blood glucose (SMBG) is worthwhile, in terms of glycaennic control, hypoglycaemia, quality of life (QoL) and cost per quality-adjusted life-year (QALY), in people with type 2 diabetes (T2DM) who were not treated with insulin or who were on basal insulin in combination with oral agents. Data sources: Literature searched included systematic reviews published since 1996, and a systematic review and meta-analyses of randomised controlled trials (RCTs) identified from the reviews, and from searches for more recent trials, along with review of qualitative and economic studies. Search strategies were limited to the English language and to articles published since 1996, and included: databases searched from 1996 to April 2009 The Cochrane Library, MEDLINE, EMBASE, PsycINFO,Web of Science limited to meeting abstracts; and websites. Review methods: The intervention was selftesting of blood glucose with a meter and test strips. Studies included adult patients with T2DM on any oral treatment or combination of regimens, including lifestyle, oral agents or once-daily basal insulin. Existing systematic reviews of SMBG were summarised and results compared. Evidence synthesis of all of the studies meeting the inclusion criteria was carried out using a narrative review. Data were analysed by outcome and subgroups. HbAic data from RCTs were summarised using a meta-analysis. Heterogeneity was calculated using the chi-squared and 12 methods.The following analyses were carried out: SMBG compared to self-monitoring of urine glucose, SMBG versus no SMBG, more intensive SMBG versus less intensive SMBG, and more intensive SMBG versus no SMBG. Available qualitative data gained from in-depth interview studies, repeated interviews, and questionnaire and survey data were summarised. Results: The review identified 30 RCTs, although few were of high quality.Ten trials comparing SMBG with no SMBG showed statistically significant reduction in HbAlc of 0.21%, which may not be considered clinically significant. A similar, though not statistically significant difference, was shown where SMBG with education was compared to SMBG without education or feedback. RCTs showed no consistent effect on hypoglycaemic episodes and no impact on medication changes. Review of cost-effectiveness studies showed that costs of SMBG per annum vary considerably (10-259). Although some studies assert that SMBG may lead to savings in health-care costs which may offset the costs of testing, the best analysis to date (DiGEM Diabetes Glycaemic Education and Monitoring) concluded that SMBG was not cost-effective. Qualitative studies revealed that there was a lack of education in how to interpret and use the data from SMBG, and that failure to act on the results was common. Conclusions: The evidence suggested that SMBG is of limited clinical effectiveness in improving glycaemic control in people with T2DM on oral agents, or diet alone, and is therefore unlikely to be cost-effective. SMBG may lead to improved glycaemic control only in the context of appropriate education both for patients and health-care professionals on how to respond to the data, in terms of lifestyle and treatment adjustment. Also, SMBG may be more effective if patients are able to self-adjust drug treatment. Furtherresearch is required on the type of education and feedback that are most helpful, characteristics of patients benefiting most from SMBG, optimal timing and frequency of SMBG, and the circumstances under which SMBG causes anxiety and/or depression.

Keywords: Adult, Analysis, Anxiety, Blood, Clinical Effectiveness, Cochrane, Control, Cost-Effectiveness, Costs, Databases, Depression, Diabetes, Drug, Education, Effectiveness, Embase, Feedback, Frequency, Health Care, Health Care Costs, Healthcare Professionals, Hypoglycaemia, Impact, Improves Glycemic Control, Insulin, Intervention, Lead, Medication, Medline, Meta-Analysis, Metabolic-Control, Outcome, Parallel-Group, Patients Perceptions, Patients Perspectives, Primary-Care, Quality of Life, Quality-of-Life, Questionnaire, Randomized Controlled-Trial, Receiving Insulin, Review, Science, Survey, Systematic, Systematic Review, Systematic Reviews, Treatment, Type 2, Type 2 Diabetes, Urine, Websites

? Oliver, S., Bagnall, A.M., Thomas, J., Shepherd, J., Sowden, A., White, I., Dinnes, J., Rees, R., Colquitt, J., Oliver, K. and Garrett, Z. (2010), Randomised controlled trials for policy interventions: A review of reviews and meta-regression. *Health Technology Assessment*, **14** (16), 1-192.

Full Text: [2010\Hea Tec Ass14-16, 1.pdf](2010/Hea%20Tec%20Ass14-16,%201.pdf)

Abstract: Objectives: To determine whether randomised controlled trials (RCTs) lead to the same effect size and variance as non-randomised studies (NRSs) of similar policy interventions, and whether these findings can be explained by other factors associated with the interventions or their evaluation. Data sources: Two RCTs were resampled to compare randomised and non-randomised arms. Comparable field trials were identified from a series of health promotion systematic reviews and a systematic review of transition for youths with disabilities. Previous methodological studies were sought from 14 electronic bibliographic databases (Applied Social Sciences Index and Abstracts, Australian Education Index, British Education Index, CareData, Dissertation Abstracts, EconLIT, Educational Resources Information Centre, International Bibliography of the Sociological Sciences, ISI Proceedings: Social Sciences and Humanities, PAIS International, PsycINFO, SIGLE, Social Science Citation Index, Sociological Abstracts) in June and July 2004. These were supplemented by citation searching for key authors, contacting review authors and searching key internet sites. Review methods: Analyses of previous resampling studies, replication studies, comparable field studies and meta-epidemiology investigated the relationship between randomisation and effect size of policy interventions. New resampling studies and new analyses of comparable field studies and meta-epidemiology were strengthened by testing pre-specified associations supported by carefully argued hypotheses. Results: Resampling studies offer no evidence that the absence of randomisation directly influences the effect size of policy interventions in a systematic way. Prior methodological reviews and meta-analyses of existing reviews comparing effects from RCTs and non-randomised controlled trials (nRCTs) suggested that effect sizes from RCTs and nRCTs may indeed differ in some circumstances and that these differences may well be associated with factors confounded with design. No consistent explanations were found for randomisation being associated with changes in effect sizes of policy interventions in field trials. Conclusions: From the resampling studies we have no evidence that the absence of randomisation directly influences the effect size of policy interventions in a systematic way. At the level of individual studies, non-randomised trials may lead to different effect sizes, but this is unpredictable. Many of the examples reviewed and the new analyses in the current study reveal that randomisation is indeed associated with changes in effect sizes of policy interventions in field trials. Despite extensive analysis, we have identified no consistent explanations for these differences. Researchers mounting new evaluations need to avoid, wherever possible, allocation bias. New policy evaluations should adopt randomised designs wherever possible.

Keywords: Adolescents, Alcohol Treatment, Bias, Citation, Clinical-Trials, Databases, Evaluation, Health, HIV Prevention, Humanities, International, ISI, Lead, Metaanalysis, Methods, Nonrandom Assignment, Prevention Interventions, Programs, Promotion, Public-Health Interventions, Quality, Review, Science, Science Citation Index, Social Science Citation Index, Systematic Review

? Owen, J., Carroll, C., Cooke, J., Formby, E., Hayter, M., Hirst, J., Jones, M.L., Stapleton, H., Stevenson, M. and Sutton, A. (2010), School-linked sexual health services for young people (SSHYP): A survey and systematic review concerning current models, effectiveness, cost-effectiveness and research opportunities Introduction. *Health Technology Assessment*, **14** (30), 1-255.

Full Text: [2010\Hea Tec Ass14-30, 1.pdf](2010/Hea%20Tec%20Ass14-30,%201.pdf)

Abstract: Background: Report based on a service-mapping study and a systematic review concerning sexual health services for young people, either based in or closely linked to schools. Objectives: To identify current forms of school-based sexual health services (SBSHS) and school-linked sexual health services (SLSHS) in the UK, review and synthesise existing evidence from qualitative and quantitative studies concerning the effectiveness, acceptability and cost-effectiveness of these types of service and to identify potential areas for further research. Data sources: Electronic databases were searched from 1985 onwards. For published material: the Cochrane Library (1991), MEDLINE, PREMEDLINE (2007), CINAHL, EMBASE,AMED,ASSIA (1987), IBSS, ERIC, PsycINFO, Science Citation Index (SCI) and Social Sciences Citation Index. For unpublished material and grey literature: the Social Care Institute of Excellence Research Register; the National Research Register (1997), ReFeR; Index to Theses, and HMIC. Review methods: A service-mapping questionnaire was circulated to school nurses in all parts of the UK, and semistructured telephone interviews with service coordinators in NHS and local authority (LA) roles were conducted. An evidence synthesis was performed based on a systematic review of the quantitative evidence about service effectiveness, qualitative evidence about user and professional views and a mixed-methods synthesis. A proof-of-concept model for assessing cost-effectiveness was drawn up. Results: Three broad types of UK sexual health service provision were identified. Firstly, SBSHS staffed by school nurses, offering ‘minimal’ or ‘basic’ levels of service. Secondly, SBSHS and SLSHS staffed by a multiprofessional team, but not medical practitioners, offering ‘basic’ or ‘intermediate’ levels of service.Thirdly, SBSHS and SLSHS staffed by a multiprofessional team, including medical practitioners offering ‘intermediate’ or ‘comprehensive’ levels of service.The systematic review showed that SBSHS are not associated with higher rates of sexual activity among young people, nor with an earlier age of first intercourse.There was evidence to show positive effects in terms of reductions in births to teenage mothers, and in chlamydial infection rates among young men, although this evidence coming primarily from the USA. Therefore, the findings need to be tested in relation to UK-based services. Also evidence to suggest that broad-based, holistic service models, not restricted to sexual health, offer the strongest basis for protecting young people’s privacy and confidentiality, countering perceived stigmatisation, offering the most comprehensive range of products and services, and maximising service uptake. Findings from the mapping study also indicate that broad-based services, which include medical practitioner input within a multipr of essional team, meet the stated preferences of staff and of young people most clearly. Partnership based developments of this kind also conform to the broad policy principles embodied in the Every Child Matters framework in the UK and allied policy initiatives. However, neither these service models nor narrower ones have been rigorously evaluated in terms of their impact on the key outcomes of conception rates and sexually transmitted infection (STI) rates, in the UK or in other countries. Therefore, appropriate data were not found to support cost-effectiveness modelling. Limitations: Low response rate to the questionnaire. Scotland, Wales and Northern Ireland were under-represented. Also, the distinction made in the questionnaire between ‘general health’ and ‘sexual health’ services did not prove robust. Conclusions: There is no single, dominant service model in the UK. The systematic review demonstrated that the evidence base for these services remains limited and uneven, and draws largely on US studies. Qualitative research is needed to develop robust process and outcome indicators for the evaluation of SLSHS/SBSHS in the UK. These indicators could then be used both in local evaluations, and in large, longitudinal studies of service effectiveness and cost-effectiveness. Future research should examine the impact of the differing types of services currently evolving in the UK, encompassing school-based and school-linked models, as well as models with and without medical practitioner involvement.

Keywords: Adolescent Pregnancy Prevention, Chlamydia-Trachomatis, Community-Randomized-Trial, Condom Availability, Family-Planning-Services, National-Survey, New-York-City, Public High-Schools, Research, Review, Teenage Pregnancy, Transmitted Infections

? Cooper, K., Squires, H., Carroll, C., Papaioannou, D., Booth, A., Logan, R.F., Maguire, C., Hind, D. and Tappenden, P. (2010), Chemoprevention of colorectal cancer: Systematic review and economic evaluation. *Health Technology Assessment*, **14** (32), 1-205.

Full Text: [2010\Hea Tec Ass14-32, 1.pdf](2010/Hea%20Tec%20Ass14-32,%201.pdf)

Abstract: Background: Colorectal cancer (CRC) is the third most common cancer in the UK: incidence increases with age, median age at diagnosis being over 70 years. Approximately 25% of cases occur in individuals with a family history of CRC, including 5% caused by familial adenomatous polyposis (FAP) or hereditary non-polyposis CRC (HNJPCC). Most develop from adenomatous polyps arising from the intestine lining. Individuals with these polyps undergo polypectomy and are invited for endoscopic surveillance. Screening via faecal occult blood testing has been rolled out across the UK. Objectives: To evaluate the CIinical effectiveness and cost-effectiveness of drug and micronutrient interventions for the prevention of CRC and/ or adenomatous polyps. Interventions considered include: non-steroidal anti-inflammatory drugs (NSAIDs), including aspirin and cyclo-oxygenase-2 (COX-2) inhibitors; folic acid; calcium; vitamin D and antioxidants (including vitamin A, vitamin C, vitamin E, selenium and beta-carotene). Chemoprevention was assessed in the general population, in individuals at increased risk of CRC, and in individuals with FAP or HNPCC. Data sources: A systematic review identified randomised controlled trials (RCTs) assessing drug and nutritional agents for the prevention of CRC or adenomatous polyps. A separate search identified qualitative studies relating to individuals’ views, attitudes and beliefs about chemoprevention. MEDLINE, MEDLINE In-Process & Other NonIndexed Citations, EM BASE, CINAHL, the Cochrane Database of Systematic Reviews, Cochrane CENTRAL Register of Controlled Trials, DARE, NHS-EED (NHS Economic Evaluation Database), HTA database, Science Citation Index, BIOSIS previews and the Current Controlled Trials research register were searched in June 2008. Data were extracted by one reviewer and checked by a second. Review methods: The synthesis methods used were systematic review and meta-analysis for RCTs and qualitative framework synthesis for qualitative studies. A health economic model was developed to assess the cost-effectiveness of chemoprevention for two populations with different levels of risk of developing CRC: the general population and an intermediate-risk population. Results: The search identified 44 relevant RCTs and six ongoing studies. A small study of aspirin in FAP patients produced no statistically significant reduction in polyp number but a possible reduction in polyp size. There was a statistically significant 21% reduction in risk of adenoma recurrence [relative risk (RR) 0.79, 95% confidence interval (CI) 0.68 to 0.92] in an analysis of aspirin versus no aspirin in individuals with a history of adenomas or CRC. In the general population, a significant 26% reduction in CRC incidence was demonstrated in studies with a 23-year follow-up (RR 0.74, 95% CI 0.57 to 0.97). Non-aspirin NSAID use in FAP individuals produced a non-statistically significant reduction in adenoma incidence after 4 years of treatment and follow-up and reductions in polyp number and size. In individuals with a history of adenomas there was a statistically significant 34% reduction in adenoma recurrence risk (RR 0.66, 95% CI 0.60 to 0.72) and a statistically significant 55% reduction in advanced adenoma incidence (RR 0.45, 95% CI 0.35 to 0.58). No studies assessed the effect of non-aspirin NSAIDs in the general population. There were no studies of folic acid in individuals with FAP or HNPCC. There was no significant effect of folic acid versus placebo on adenoma recurrence (RR 1.16, 95% CI 0.97 to 1.39) or advanced adenoma incidence in individuals with a history of adenomas. In the general population there was no significant effect of folic acid on risk of CRC (RR 1.13, 95% CI 0.77 to 1.64), although studies were of relatively short duration. Calcium use by FAP patients produced no significant reduction in polyp number or disease progression. In individuals with a history of adenomas there was a statistically significant 18% reduction in risk of adenoma recurrence (RR 0.82, 95% CI 0.69 to 0.98) and a non-significant reduction in risk of advanced adenomas (RR 0.77, 95% CI 0.50 to 1.17). In the general population there was no significant effect of calcium on risk of CRC (RR 1.08, 95% CI 0.87 to 1.34), although studies were of relatively short duration. There were no studies of antioxidant use in individuals with FAP or HNPCC, and in individuals with a history of adenomas no statistically significant differences in relative risk of adenoma recurrence were found. In the general population there was no difference in incidence of CRC (RR 1.00, 95% CI 0.88 to 1.13) with antioxidant use compared with no antioxidant use. Twenty studies reported qualitative findings concerning chemoprevention. People are more likely to use NSAIDs if there is a strong perceived need. Perceptions of risk and benefit also influence decision-making and use. People have fewer concerns about using antioxidants or other supplements, but their perception of the benefits of these agents is less well-defined. The model analysis suggested that the most cost-effective age-range policy in the general population would be to provide chemoprevention to all individuals within the general population from age 50 to 60 years. The use of aspirin in addition to screening within the general population is likely to result in a discounted cost per life-year gained of around 10,000 and a discounted cost per quality- adjusted life-year (QALY) gained of around 23,000 compared with screening alone. In the intermediaterisk group the most economically viable age-range policy would be to provide chemoprevention to individuals following polypectomy aged 61 to 70 years. Calcium is likely to have a discounted cost per QALY gained of around {8000 compared with screening alone. Althogh aspirin in addition to screening should be more effective and less costly than screening alone, under the current assumptions of benefits to harms of aspirin and calcium, aspirin is expected to be extendedly dominated by calcium. Limitations: Whilst a number of studies were included in the review, the duration of follow-up was generally insufficient to detect an effect on cancer incidence. Given the uncertainties and ambiguities in the evidence base, the results of the health economic analysis should be interpreted with caution. Conclusions: Aspirin and celecoxib may reduce recurrence of adenomas and incidence of advanced adenomas in individuals with an increased risk of CRC and calcium may reduce recurrence of adenomas in this group. COX-2 inhibitors may decrease polyp number in patients with FAR There is some evidence for aspirin reducing the incidence of CRC in the general population. Both aspirin and NSAIDs are associated with adverse effects so it will be important to consider the risk benefit ratio before recommending these agents for chemoprevention. The economic analysis suggests that chemoprevention has the potential to represent a cost-effective intervention, particularly when targeted at intermediate-risk populations following polypectomy.

Keywords: Base-Line Characteristics, Beta-Carotene Supplementation, Cost-Effectiveness Analysis, Familial Adenomatous Polyposis, Long-Term Supplementation, Low-Dose Aspirin, Nonsteroidal Antiinflammatory Drugs, Placebo-Controlled Trial, Protection Motivation Theory, Randomized Controlled-Trial

? Chambers, D., Paulden, M., Paton, F., Heirs, M., Duffy, S., Craig, D., Hunter, J., Wilson, J., Sculpher, M. and Woolacott, N. (2010), Sugammadex for the reversal of muscle relaxation in general anaesthesia: A systematic review and economic assessment. *Health Technology Assessment*, **14** (39), 1-211.

Full Text: [2010\Hea Tec Ass14-39, 1.pdf](2010/Hea%20Tec%20Ass14-39,%201.pdf)

Abstract: Background: Sugammadex (Bridion (R)) is a newly developed agent for the reversal of neuromuscular blockade (NMB) induced by rocuronium or vecuronium. Sugammadex can reverse profound blockade and can be given for immediate reversal and its use would avoid the potentially serious adverse effects of the currently used agent, succinylcholine. Also, sugammadex can reverse NMB more quickly and predictably than existing agents. Objectives: To determine the clinical effectiveness and cost-effectiveness of sugammadex for the reversal of muscle relaxation after general anaesthesia in UK practice following routine or rapid induction of NMB. Data sources: Medical databases [including MEDLINE, EMBASE, CINAHL, Science Citation Index, BIOSIS and Cochrane Central Register of Controlled Trials (CENTRAL), conference proceedings, internet sites and clinical trials registers] were searched to identify published and unpublished studies. The main searches were carried out in May 2008 and supplemented by current awareness updates up until November 2008. Review methods: For the clinical effectiveness review, randomised controlled trials of sugammadex against placebo or an active comparator (neostigmine+glycopyrrolate) for the reversal of moderate or profound NMB and for immediate reversal (spontaneous recovery from succinylcholine-induced blockade) were included. The primary effectiveness outcome was speed of recovery from NMB, as measured by objective monitoring of neuromuscular function. For the cost-effectiveness review, a de novo economic assessment considered the routine induction of NMB and the rapid induction and/or reversal of NMB, and threshold analyses were carried out on a series of pairwise comparisons to establish how effective sugammadex needs to be to justify its cost. Results: The review of clinical effectiveness included four randomised active-control trials of sugammadex, nine randomised placebo-controlled trials and five studies in special populations. A total of 2132 titles and abstracts and 265 full-text publications were screened. The included trials indicated that sugammadex produces more rapid recovery from moderate or profound NMB than placebo or neostigmine. Median time to recovery from moderate blockade was 1.3-1.7 minutes for rocuronium + sugammadex, 21-86 minutes for rocuronium + placebo and 17.6 minutes for rocuronium + neostigmine. In profound blockade, median time to recovery was 2.7 minutes for rocuronium + sugammadex, 30 to >90 minutes for rocuronium + placebo, and 49 minutes for rocuronium + neostigmine. Results for vecuronium were similar. In addition, recovery from NMB was faster with rocuronium reversed by sugammadex 16mg/kg after 3 minutes (immediate reversal) than with succinylcholine followed by spontaneous recovery (median time to primary outcome 4.2 versus 7.1 minutes). The evidence base for modelling cost-effectiveness is very limited. However, assuming that the reductions in recovery times seen in the trials can be achieved in routine practice and can be used productively, sugammadex [2 mg/kg (4 mg/kg)] is potentially cost-effective at its current list price for the routine reversal of rocuronium-induced moderate (profound) blockade, if each minute of recovery time saved can be valued at approximately 2.40 pound (1.75) pound or more. This is more likely to be achieved if any reductions in recovery time are in the operating room (estimated value of 4.44 pound per minute saved) rather than the recovery room (estimated value of 0.33 pound per minute saved). The results were broadly similar for rocuronium- and vecuronium-induced blockade. For rapid reversal of NMB it appeared that any reduction in morbidity from adopting sugammadex is unlikely to result in significant cost savings. Limitations: The evidence base was not large and many of the published trials were dose-finding and safety studies with very small sample sizes. Also, some relevant outcomes, in particular patient experience/quality of life and resources/costs used, were either not investigated or not reported. In addition, it is likely that the patients included in the efficacy trials were relatively young and in good general health compared with the overall surgical population. Regarding the economic evaluation, there appears to be no evidence linking measures of clinical efficacy to patients’ healthrelated quality of life and mortality risks. Conclusions: Sugammadex may be a cost-effective option compared with neostigmine + glycopyrrolate for reversal of moderate NMB and also provides the facility to recover patients from profound blockade. Rocuronium + sugammadex could be considered as a replacement for succinylcholine for rapid induction (and reversal) of NMB, although this may not be a cost-effective option in some types of patient at current list prices for sugammadex. Considerable uncertainties remain about whether the full benefits of sugammadex can be realised in clinical practice.

Keywords: Artery-Bypass Surgery, Citation, Endotracheal Intubating Conditions, Induced Neuromuscular Block, Intensive-Care-Unit, Markov Computer-Simulation, Mivacurium Chloride, Postoperative Residual Curarization, Publications, Spontaneous-Recovery, Succinylcholine-Induced Hyperkalemia, Time-Course

? Imamura, M., Abrams, P., Bain, C., Buckley, B., Cardozo, L., Cody, J., Cook, J., Eustice, S., Glazener, C., Grant, A., Hay-Smith, J., Hislop, J., Jenkinson, D., Kilonzo, M., Nabi, G., N’Dow, J., Pickard, R., Ternent, L., Wallace, S., Wardle, J., Zhu, S. and Vale, L. (2010), Systematic review and economic modelling of the effectiveness and cost-effectiveness of non-surgical treatments for women with stress urinary incontinence. *Health Technology Assessment*, **14** (40), 1-506.

Full Text: [2010\Hea Tec Ass14-40, 1.pdf](2010/Hea%20Tec%20Ass14-40,%201.pdf)

Abstract: Objectives: To assess the clinical effectiveness and cost-effectiveness of non-surgical treatments for women with stress urinary incontinence (SUI) through systematic review and economic modelling. Data sources: The Cochrane Incontinence Group Specialised Register, electronic databases and the websites of relevant professional organisations and manufacturers, and the following databases: CINAHL, EMBASE, BIOSIS, Science Citation Index and Social Science Citation Index, Current Controlled Trials, ClinicalTrials.gov and the UKCRN Portfolio Database. Study selection: The study comprised three distinct elements. (I) A survey of 188 women with SU1 to identify outcomes of importance to them (activities of daily living; sex, hygiene and lifestyle issues; emotional health; and the availability of services). (2) A systematic review and meta-analysis of non-surgical treatments for SUI to find out which are most effective by comparing results of trials (direct pairwise comparisons) and by modelling results (mixed-treatment comparisons MTCs). A total of 88 randomised controlled trials (RCTs) and quasi-RCTs reporting data from 9721 women were identified, considering five generic interventions [pelvic floor muscle training (PFMT), electrical stimulation (ES), vaginal cones (VCs), bladder training (BT) and serotonin noradrenaline reuptake inhibitor (SNRI) medications], in many variations and combinations. Data were available for 37 interventions and 68 treatment comparisons by direct pairwise assessment. Mixed-treatment comparison models compared 14 interventions, using data from 55 trials (6608 women). (3) Economic modelling, using a Markov model, to find out which combinations of treatments (treatment pathways) are most cost-effective for SUI. Data extraction: Titles and abstracts identified were assessed by one reviewer and full-text copies of all potentially relevant reports independently assessed by two reviewers. Any disagreements were resolved by consensus or arbitration by a third person. Results: Direct pairwise comparison and MTC analysis showed that the treatments were more effective than no treatment. Delivering PFMT in a more intense fashion, either through extra sessions or with biofeedback (BF), appeared to be the most effective treatment [PFMT extra sessions vs no treatment (NT) odds ratio (OR) 10.7, 95% credible interval (Cr!) 5.03 to 26.2; PFMT+ BF vs NT OR 12.3, 95% Crl 5.35 to 32.7]. Only when success was measured in terms of improvement was there evidence that basic PFMT was better than no treatment (PFMT basic vs NT OR 4.47, 95% Crl 2.03 to 11.9). Analysis of cost-effectiveness showed that for cure rates, the strategy using lifestyle changes and PFMT with extra sessions followed by tension-free vaginal tape (TVT) (lifestyle advice PFMT extra sessions TVT) had a probability of greater than 70% of being considered cost-effective for all threshold values for willingness to pay for a QALY up to 50,000. For improvement rates, lifestyle advice PFMT extra sessions TVT had a probability of greater than 50% of being considered cost-effective when society’s willingness to pay for an additional QALY was more than 10,000. The results were most sensitive to changes in the long-term performance of PFMT and also in the relative effectiveness of basic PFMT and PFMT with extra sessions. Limitations: Although a large number of studies were identified, few data were available for most comparisons and long-term data were sparse. Challenges for evidence synthesis were the lack of consensus on the most appropriate method for assessing incontinence an intervention protocols that were complex and varied considerably across studies. Conclusions: More intensive forms of PFMT appear worthwhile, but further research is required to define an optimal form of more intensive therapy that is feasible and efficient for the NHS to provide, along with further definitive evidence from large, welldesigned studies.

Keywords: Citation, Complex, Floor Muscle Exercise, Free Vaginal Tape, Group Educational Intervention, Meta-Analysis, Mixed Treatment Comparisons, Modelling, Patient-Generated Index, Placebo-Controlled Trial, Quality-of-Life, Randomized Controlled-Trial, Research, Science Citation Index, Standardization Sub-Committee, Synthesis, Transvaginal Electrical-Stimulation, Treatment

? Waugh, N., Royle, P., Clar, C., Henderson, R., Cummins, E., Hadden, D., Lindsay, R. and Pearson, D. (2010), Screening for hyperglycaemia in pregnancy: A rapid update for the National Screening Committee. *Health Technology Assessment*, **14** (45), 1-183.

Full Text: [2010\Hea Tec Ass14-45, 1.pdf](2010/Hea%20Tec%20Ass14-45,%201.pdf)

Abstract: Background: Screening for gestational diabetes has long been a controversial topic. A previous Health Technology Assessment (HTA) report reviewed literature on screening for gestational diabetes mellitus (GDM) and assessed the case for screening against the criteria set by the National Screening Committee. Objective: To update a previous HTA report which reviewed the literature on screening for GDM by examining evidence that has emerged since that last report, including the Australian Carbohydrate Intolerance Study in Pregnant Women (ACHOIS), the Maternal and Fetal Medicine Units Network (MFMUN) trial and the Hyperglycemia and Adverse Pregnancy Outcomes (HAPO) study. To review data on recent trends in maternal age at birth and on the prevalence of overweight and obesity and the effect on prevalence of GDM. Data sources: A systematic review and meta-analysis of the literature was carried out. The bibliographic databases used were MEDLINE (1996 to January 2009), EMBASE (1996 to December 2009), the Cochrane Library 2008 issue 4, the Centre for Reviews and Dissemination database and the Web of Science. Review methods: For the review of treatment with oral drugs versus insulin, a full systematic review and meta-analysis was carried out. The results of the ACHOIS, MFMUN and HAPO studies were summarised and their implications discussed. Findings of a selection of other recent studies, relevant to the continuum issue, were summarised. Some recent screening studies were reviewed, including a particular focus on studies of screening earlier in pregnancy. Results: The HAPO results showed a linear relationship between plasma glucose and adverse outcomes there is a continuum of risk with no clear threshold which could divide women into those with gestational diabetes and those without. There was good evidence from trials and the meta-analysis that women who fail to control hyperglycaemic in pregnancy on lifestyle measures alone can be safely and effectively be treated with oral agents, metformin or glibenclamide, rather than going directly to insulin. Evidence showed few differences in results between glibenclamide and insulin and metformin and insulin. The exceptions were that there was less maternal hypoglycaemia with glibenclamide, but less neonatal hypoglycaemia and lower birthweight with insulin, and there was less maternal weight gain with metformin. The ACHOIS and MFMUN trials showed reductions in perinatal complications among infants born to mothers who were provided with more intensive dietary advice, blood glucose monitoring and insulin when required. The HAPO study demonstrated adverse outcomes over a much wider range of blood glucose (BG) than the traditional definition of GDM. In the HAPO study, no one measure of BG came out as being clearly the best, although fasting plasma glucose (FPG) was as good as any, and had advantages of being more convenient than an oral glucose tolerance test (OGTT), but correlations between fasting and post-load levels were quite poor. Two screening strategies dominated; (I) selection by the American Diabetes Association criteria followed by the 75-g OGTT [incremental cost-effectiveness ratio (ICER) 3678], and (2) selection by high-risk ethnicity followed by the 75-g OGTT (ICER 21,739). Studies indicated that costs are about 1833 higher for pregnancies complicated by gestational diabetes, suggesting that prevention would be worthwhile. Limitations: Not all of the HAPO results have been published, and none of the reviewed economic studies resolved the most difficult issue at what level of BG does intervention become cost-effective? Conclusions: The evidence base has improved since the last HTA review in 2002. There is now good evidence for treatment of oral drugs instead of insulin and it looks increasingly as if FPG could be the test of choice. However some key uncertainties remain to be resolved, which can be done by further analysis iv of the already collected HAPO data and by using the UK model used in developing the NICE guidelines to assess the cost-effectiveness of intervention in each of the seven HAPO categories.

Keywords: Adverse Outcomes, Analysis, Assessment, Bibliographic, Bibliographic Databases, Birthweight, Blood, Cochrane, Control, Cost-Effectiveness, Cost-Effectiveness Analysis, Costs, Databases, Diabetes, Diabetes Mellitus, Embase, Ethnicity, Fasting, Fasting Capillary Glucose, Gestational Diabetes, Gestational Diabetes-Mellitus, Glucose Challenge Test, Guidelines, Health, High-Risk Population, Hypoglycaemia, Infants, Insulin, Intervention, Literature, Maternal, Medline, Meta-Analysis, Metformin, Model, Monitoring, Mothers, Neonatal Macrosomia, Obesity, Oral Hypoglycemic Agents, Outcome Hapo, Outcomes, Overweight, Perinatal, Perinatal Outcomes, Plasma, Plasma-Glucose, Pregnancy, Prevalence, Prevention, Ratio, Review, Risk, Science, Screening, Systematic, Systematic Review, Traditional, Treatment, Trends, UK, Web of Science, Women

? Coleman, T., Agboola, S., Leonardi-Bee, J., Taylor, M., McEwen, A. and McNeill, A. (2010), Relapse prevention in UK Stop Smoking Services: Current practice, systematic reviews of effectiveness and cost-effectiveness analysis. *Health Technology Assessment*, **14** (49), 1-181.

Full Text: [2010\Hea Tec Ass14-49, 1.pdf](2010/Hea%20Tec%20Ass14-49,%201.pdf)

Abstract: Background: Reducing smoking is a chief priority for governments and health systems like the UK National Health Service (NHS). The UK has implemented a comprehensive tobacco control strategy involving a combination of population tobacco control interventions combined with treatment for dependent smokers through a national network of NHS Stop Smoking Services (NHS SSS). Objectives: To assess the effectiveness and cost-effectiveness of relapse prevention in NHS SSS. To (1) update current estimates of effectiveness on interventions for preventing relapse to smoking; (2) examine studies that provide findings that are generalisable to NHS SSS, and which test interventions that might be acceptable to introduce within the NHS; and (3) determine the cost-effectiveness of those relapse preventions interventions (RPIs) that could potentially be delivered by the NHS SSS. Data sources: A systematic review of the literature and economic evaluation were carried out. In addition to searching the Cochrane Tobacco Addiction Group register of trials (2004 to July 2008), MEDLINE, the Cochrane Central Register of Controlled Trials, EMBASE, PsycINFO, the Science Citation Index and Social Science Citation Index were also searched. Review methods: The project was divided into four distinct phases with different methodologies: qualitative research with a convenience sample of NHS SSS managers; a systematic review investigation the efficacy of RPIs; a cost-effectiveness analysis; and a further systematic review to derive the relapse curves for smokers receiving evidence-based treatment of the type delivered by the NHS SSS. Results: Qualitative research with 16 NHS SSS managers indicated that there was no shared understanding of what relapse prevention meant or of the kinds of interventions that should be used for this. The systematic review included 36 studies that randomised and delivered interventions to abstainers. ‘Self-help’ behavioural interventions delivered to abstainers who had achieved abstinence unaided were effective for preventing relapse to smoking at long-term follow-up [odds ratio (OR) 1.52, 95% confidence interval (CI) 1.15 to 2.01]. The following pharmacotherapies were also effective as RPIs after their successful use as cessation treatments: bupropion at long-term follow-up (pooled OR 1.49, 95% CI 1.10 to 2.01); nicotine replacement therapy (NRT) at medium- (pooled OR 1.56, 95% CI 1.16 to 2.11) and long-term follow-ups (pooled OR 1.33, 95% CI 1.08 to 1.63) and one trial of varenicline also indicated effectiveness. The health economic analysis found that RPIs are highly cost-effective. Compared with ‘no intervention’; using bupropion resulted in an incremental quality-adjusted life-year (QALY) increase of 0.07, with a concurrent NHS cost saving of 68; for NRT, spending 12 pound resulted in a 0.04 incremental QALY increase; varenicline resulted in a similar QALY increase as NRT, but at almost seven times the cost. Extensive sensitivity analyses demonstrated that cost-effectiveness ratios were more sensitive to variations in effectiveness than cost and that for bupropion and NRT, cost-effectiveness generally remained. Varenicline also demonstrated cost-effectiveness at a ‘willingness-to-pay’ threshold of 20,000 per QALY, but exceeded this when inputted values for potential effectiveness were at the lower end of the range explored. For all drugs, there was substantial relapse to smoking after treatment courses had finished. Quit attempts involving NRT appeared to have the highest early relapse rates, when trial participants would be expected to still be on treatment, but for those involving bupropion and varenicline little relapse was apparent during this time. Limitations: The qualitative research sample was small. Conclusions: Based on the totality of evidence, RPIs are expected to be effective and cost-effective if incorporated into routine treatment within the NHS SSS. While staff within the NHS SSS were largely favourably inclined towards providing RPIs, guidance would be needed to encourage the adoption of the most effective RPIs, as would incentives that focused on the importance of sustaining quit attempts beyond the currently monitored 4-week targets.

Keywords: Alpha, Analysis, Behavioral Treatment, Cessation Intervention, Cigarette-Smoking, Citation, Control, Cost, Embase, Evaluation, Follow-Up, Health, Literature, Male British Doctors, Medline, Network, Nicotine Patch Therapy, Population, Postpartum Women, Qualitative Research, Randomized Controlled-Trial, Receptor Partial Agonist, Research, Science, Science Citation Index, Sciences, Smoking, Sustained-Release Bupropion, Technology, Therapy, Treatment, UK

? Patterson, M., Rick, J., Wood, S., Carroll, C., Balain, S. and Booth, A. (2010), Systematic review of the links between human resource management practices and performance. *Health Technology Assessment*, **14** (51), 1-363.

Full Text: [2010\Hea Tec Ass14-51, 1.pdf](2010/Hea%20Tec%20Ass14-51,%201.pdf)

Abstract: Background: In recent years human resource management (HRM) has been seen as an important factor in the successful realisation of organisational change programmes. The UK NHS is undergoing substantial organisational change and there is a need to establish which human resource (HR) initiatives may be most effective. Objectives: To assess the results from a wide-ranging series of systematic reviews of the evidence on HRM and performance. The first part assesses evidence on use of HRM in the UK and fidelity of practice implemented. The second part considers evidence for the impact of HRM practices on intermediate outcomes, which can impact on final outcomes, such as organisational performance or patient care. Data sources: The following databases were searched: Applied Social Sciences Index and Abstracts (ASSIA), British Nursing Index (BNI), Business Source Premier, Campbell Collaboration, Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Database of Systematic Reviews (CDSR), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Database of Abstracts of Reviews of Effectiveness (DARE), DH-Data, EMBASE, Health Management Information Consortium (HMIC), International Bibliography of the Social Sciences (IBSS), King’s Fund database, MEDLINE, NHS Economic Evaluation Database (NHS EED), National Research Register (NRR), PREMEDLINE, PsycINFO, ReFeR, Social Sciences Citation Index (SSCI) and Science Citation Index (SCI). The searches were conducted in May/June 2006. Review methods: Broad categories of HRM interventions and intermediate outcomes were generated: 10 HRM categories and 12 intermediate outcome categories. Seven patient final outcomes were derived from the NHS Performance Indicators and the NHS Improvement Plan. The quality criteria used to select papers incorporated a longitudinal study design filter to provide evidence of the causal direction of relationships between HRM and relevant outcomes. Single HRM practices were considered. Within the health-specific literature, focus was on the impact of HRM on patient outcomes. Information is presented on the reliability of measures in each of the intermediate outcome areas. Results: Work design practices that enhance employee autonomy and control influenced a number of outcomes and there was consistent evidence for the positive impact of increased job control on employee outcomes, such as job satisfaction, absence and health. For employee participation, the small number of studies reviewed supported the involvement of employees in design/implementation of changes that affect their work. In health literature in particular, employee involvement through quality improvement teams resulted in improved patient outcomes. Findings were positive for the impact of training on the intended outcomes of the initiatives. Support for the impact of performance management practices was apparent, in particular feedback on performance outcomes and the use of participative goal setting. Strong associations were found among all intermediate outcomes, and the relationship between most intermediate behaviours and outcomes were significant. Limitations: Limited evidence was available on the use of HRM and on the implementation of policy. Also, the specific practices studied within each HRM category differ so there was little evidence to show whether similar practices have the same effects in health and non-health settings. Conclusions: Some potentially effective practices for both health and non-health areas were identified, and HRM methods could be used to support change processes within the NHS; the findings relating to work organisation are particularly promising with regard to changes in methods of service delivery. Using training to support the implementation of change is highlighted. However, future multilevel studies that embrace the individual, team and organisational level are needed. Studies should look into interventions aimed at improving HR outcomes and performance, and allow for pre- and post-intervention measurement of practices and outcomes.

Keywords: Adolescent Substance-Abuse, Citation, Collaboration, Control, Database, Databases, Dual-Earner Couples, Embase, Evaluation, Impact, Intensive-Care-Unit, Literature, Longitudinal-Field Experiment, Management, Medline, Nursing, Organizational Citizenship Behavior, Patient, Performance, Processes, Psychosocial Work-Environment, Randomized Controlled-Trials, Realistic Job Previews, Research, Resistant Staphylococcus-Aureus, Review, SCI, Science, Science Citation Index, Sciences, Support, Systematic Review, UK, Ventilator-Associated Pneumonia

? Czoski-Murray, C., Karnon, J., Jones, R., Smith, K. and Kinghorn, G. (2010), Cost-effectiveness of screening high-risk HIV-positive men who have sex with men (MSM) and HIV-positive women for anal cancer. *Health Technology Assessment*, **14** (53), 1-131.

Full Text: [2010\Hea Tec Ass14-53, 1.pdf](2010/Hea%20Tec%20Ass14-53,%201.pdf)

Abstract: Background Anal cancer is uncommon and predominantly a disease of the elderly The human papillomavirus (HPV) has been implicated as a causal agent, and HPV infection is usually transmitted sexually Individuals who are human immunodeficiency virus (HIV)-positive are particularly vulnerable to HPV infections, and increasing numbers from this population present with anal cancer Objective To estimate the cost-effectiveness of screening for anal cancer in the high-risk HIV-positive population [in particular, men who have sex with men (MSM), who have been identified as being at greater risk of the disease] by developing a model that incorporates the national screening guidelines criteria Data sources A comprehensive literature search was undertaken in January 2006 (updated in November 2006) The following electronic bibliographic databases were searched Applied Social Sciences Index and Abstracts (ASSIA), BIOSIS previews (Biological Abstracts), British Nursing Index (BNI), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews (CDSR), Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE, MEDLINE, MEDLINE In-Process & Other Non-Indexed Citations NHS Database of Abstracts of Reviews of Effects (DARE), NHS Health Technology Assessment (HTA) Database, PsycINFO, Science Citation Index (SCI) and Social Sciences Citation Index (SSCI) Study selection Published literature identified by the search strategy was assessed by four reviewers Papers that met the inclusion criteria contained the following data on population incidence, effectiveness of screening, health outcomes or screening and/or treatment costs, defined suitable screening technologies, prospectively evaluated tests to detect anal cancer Foreign-language papers were excluded Searches identified 2102 potential papers, 1403 were rejected at title and a further 493 at abstract From 206 papers retrieved, 81 met the inclusion criteria A further treatment paper was added, giving a total of 82 papers included Data extraction Data from included studies were extracted into data extraction forms by the clinical effectiveness reviewer To analyse the cost-effectiveness of screening, two decision-analytical models were developed and populated Results The reference case cost-effectiveness model for MSM found that screening for anal cancer is very unlikely to be cost-effective The negative aspects of screening included utility decrements associated with false-positive results and with treatment for high-grade anal intraepithelial neoplasia (HG-AIN) Sensitivity analyses showed that removing these utility decrements improved the cost-effectiveness of screening However, combined with higher regression rates from low-grade anal intraepithelial neoplasia (LG-AIN), the lowest expected incremental cost-effectiveness ratio remained at over 44,000 pound per quality-adjusted life-year (QALY) gained Probabilistic sensitivity analysis showed that no screening retained over 50% probability of cost-effectiveness to a QALY value of 50,000 pound The screening model for HIV-positive women showed an even lower likelihood of cost-effectiveness, with the most favourable sensitivity analyses reporting an incremental cost per QALY of 88,000 pound Limitations Limited knowledge is available about the epidemiology and natural history of anal cancer, along with a paucity of good-quality evidence concerning the effectiveness of screening Conclusions Many of the criteria for assessing the need for a screening programme were not met and the cost-effectiveness analyses showed little likelihood that screening any of the identified high-risk groups would generate health improvements at a reasonable cost Further studies could assess whether the screening model has underestimated the impact of anal cancer, the results of which may justify an evaluative study of the effects of treatment for HG-AIN.

Keywords: Active Antiretroviral Therapy, Anal, Anal Cancer, Analyses, Analysis, Assessing, Bibliographic Databases, Bisexual Men, Cancer, Cell Carcinoma, Cervical-Cancer, Clinical, Cost, Cost Effectiveness, Cost-Effective, Cost-Effectiveness, Costs, Criteria, Data, Databases, Developing, Disease, Effectiveness, Elderly, Epidemiology, Evidence, Extraction, False Positive, Forms, Guidelines, Health, Health Outcomes, High Prevalence, History, HPV, Human, Human Immunodeficiency Virus, Human Papillomavirus, Human-Immunodeficiency, Human-Papillomavirus Infection, Impact, Incidence, Infection, Infections, Knowledge, Literature, Medline, Men, Model, Models, Natural, Natural-History, Negative Homosexual-Men, NOV, Outcomes, Papers, Papillomavirus, Population, Potential, Psycinfo, Qaly, Quality-Adjusted Life-Year, Rates, Reference, Regression, Reporting, Risk, SCI, Science Citation Index, Screening, Search Strategy, Sensitivity, Sensitivity Analysis, Sex, Sources, Squamous Intraepithelial Lesions, SSCI, Strategy, Technologies, Technology Assessment, The Elderly, Treatment, Treatment Costs, Utility, Value, Women

? Ashfaq, K., Yahaya, I., Hyde, C., Andronis, L., Barton, P., Bayliss, S. and Chen, Y.F. (2010), Clinical effectiveness and cost-effectiveness of stem cell transplantation in the management of acute leukaemia: A systematic review. *Health Technology Assessment*, **14** (54), 1-172.

Full Text: [2010\Hea Tec Ass14-54, 1.pdf](2010/Hea%20Tec%20Ass14-54,%201.pdf)

Abstract: Background: Acute leukaemia is a group of rapidly progressing cancers of bone marrow and blood classified as either acute myeloid leukaemia (AML) or acute lymphoblastic leukaemia (ALL). Haemopoietic stem cell transplantation (SCT) has developed as an adjunct to or replacement for conventional chemotherapy with the aim of improving survival and quality of life. Objectives: A systematic overview of the best available evidence on the clinical effectiveness and cost-effectiveness of SCT in the treatment of acute leukaemia. Data sources: Clinical effectiveness: electronic databases, including MEDLINE, EMBASE and the Cochrane Library, were searched from inception to December 2008 to identify published systematic reviews and meta-analyses. Cochrane CENTRAL, MEDLINE, EMBASE and Science Citation Index (SCI) were searched from 1997 to March 2009 to identify primary studies. Cost-effectiveness: MEDLINE, EM BASE, Database of Abstracts of Reviews of Effects (DARE) and NHS Economic Evaluation Database (NHS EED) were searched from inception to January 2009. Study selection: Potentially relevant papers were retrieved and independently checked against predefined criteria by two reviewers (one in the case of the cost-effectiveness review). Study appraisal: Included reviews and meta-analyses were critically appraised and data extracted and narratively presented. Included randomised controlled trials (RCTs) and donor versus no donor (DvND) studies were mapped to the evidence covered in existing systematic reviews and meta-analyses according to a framework of 12 decision problems (DPs): DPI related to SCT in adults with AML in first complete remission (CR1); DP2 to adults with AML in second or subsequent remission or with refractory disease (CR2+); DP3 to children with AML in CRI; DP4 to children with AML in CR2+; DP5 to adults with ALL in CR1; DP6 to adults with ALL in CR2+; DP7 to children with ALL in CR1; DP8 to children with ALL in CR2+; DP9 to comparison of different sources of stem cells in transplantation; DP10 to different conditioning regimens; DP11 to the use of purging in autologous SCT; and DP12 to the use of T-cell depletion in allogeneic SCT. Results: Fifteen systematic reviews/meta-analyses met the inclusion criteria for the review of clinical effectiveness, thirteen of which were published from 2004 onwards. Taking into account the timing of their publications, most reviews appeared to have omitted an appreciable proportion of potentially available evidence. The best available evidence for effectiveness of allogeneic SCT using stem cells from matched sibling donors came from DyND studies: there was sufficient evidence to support the use of allogeneic SCT in DPI (except in good-risk patients), DP3 (role of risk stratification unclear) and DP5 (role of risk stratification unclear). There was conflicting evidence in DP7 and a paucity of evidence from DyND studies for all decision problems concerning patient groups in CR2+. The best available evidence for effectiveness of autologous SCT came from RCTs: overall, evidence suggested that autologous SCT was either similar to or less effective than chemotherapy. There was a paucity of evidence from published reviews of RCTs for DPs 9-12. Nineteen studies met the inclusion criteria in the cost-effectiveness review, most reporting only cost information and only one incorporating an economic model. Although there is a wealth of information on costs and some information on cost-effectiveness of allogeneic SCT in adults with AML (DPs 1 and 2), there is very limited evidence on relative costs and cost-effectiveness for other DPs. Limitations: Time and resources did not permit critical appraisal of the primary studies on which the reviews/meta-analyses reviewed were based; there were substantial differences in methodologies, and consequently quantitative synthesis of data was neither planned in the protocol nor carried out; some of the studies were quite old and might not reflect current practice; and a number of the studies might not be applicable to the UK. Conclusions: Bearing in mind the limitations, existing evidence suggests that sibling donor allogeneic SCT may be more effective than chemotherapy in adult AML (except in good-risk patients) in CR1, childhood AML in CR1 and adult ALL in CR1, and that autologous SCT is equal to or less effective than chemotherapy. No firm conclusions could be drawn regarding the cost-effectiveness of SCT in the UK NHS owing to the limitations given above. Future research should include the impact of the treatments on patients’ quality of life as well as information on health service use and costs associated with SCT from the perspective of the UK NHS.

Keywords: 1st Complete Remission, Acute Lymphoblastic-Leukemia, Acute Myeloblastic-Leukemia, Acute Myelogenous Leukemia, Acute Myeloid-Leukemia, Acute Nonlymphocytic Leukemia, Adult, Allogeneic, Base, Blood, Bone, Bone Marrow, Bone-Marrow-Transplantation, Cell Transplantation, Chemotherapy, Childhood, Children, Childrens Cancer Group, Citation, Clinical, Comparison, Conditioning, Conventional, Cost, Cost Effectiveness, Cost-Effectiveness, Costs, Criteria, Data, Databases, Decision, Disease, Economic, Economic Model, Effectiveness, Evaluation, Evidence, First, Framework, Health, High-Dose Cytarabine, Impact, Information, Leukaemia, Life, Management, Medline, Methodologies, Model, Papers, Patients, Practice, Primary, Publications, Quality, Quality of, Quality of Life, Randomised, Randomised Controlled Trials, Reporting, Research, Resources, Review, Reviews, Risk, Role, SCI, Science, Science Citation Index, Service, Sources, Stem Cell, Stem Cell Transplantation, Stem Cells, Stratification, Support, Survival, Synthesis, Systematic Review, Systematic Reviews, Timing, Total-Body Irradiation, Transplantation, Treatment, UK, Wealth

? Thomas, R.E., Jefferson, T. and Lasserson, T.J. (2010), Influenza vaccination for healthcare workers who work with the elderly: A cochrane review. *Health Technology Assessment*, **14** (55), 493-588.

Full Text: [2010\Hea Tec Ass14-55, 493.pdf](2010/Hea%20Tec%20Ass14-55,%20493.pdf)

Abstract: Background: Healthcare workers’ (HCWs) 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 HCWs and the incidence of influenza, its complications and influenza-like illness (ILI) in individuals >= 60 in long-term care facilities (LTCFs). 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), EM BASE (1974 to 2009) and Biological Abstracts and Science Citation Index-Expanded. Selection criteria: Randomised controlled trials (RCTs) and non-RCTs of influenza vaccination of HCWs caring for individuals >= 60 in LTCFs and the incidence of laboratory-proven influenza, its complications or ILI. Data collection and analysis: Two authors independently extracted data and assessed risk of bias. Main results: We identified four cluster-RCTs (C-RCTs) (n = 7558) and one cohort (n = 12742) of influenza vaccination for HCWs caring for individuals >= 60 in LTCFs. Pooled data from three C-RCTs showed no effect on specific outcomes: laboratory-proven influenza, pneumonia or deaths from pneumonia. For non-specific outcomes pooled data from three C-RCTs showed HCW vaccination reduced ILI; data from one C-RCT that HCW vaccination reduced GP consultations for ILI; and pooled data from three C-RCTs showed reduced all-cause mortality in individuals >= 60. Authors’ conclusions: No effect was shown for specific outcomes: laboratory-proven influenza, pneumonia and death from pneumonia. An effect was shown for the non-specific outcomes of ILI, GP consultations for ILI and all-cause mortality in individuals >= 60. These non-specific outcomes are difficult to interpret because ILI includes many pathogens, and winter influenza contributes < 10% to all-cause mortality in individuals >= 60. The key interest is preventing laboratory-proven influenza in individuals >= 60, pneumonia and deaths from pneumonia, and we cannot draw such conclusions. The identified studies are at high risk of bias. Some HCWs remain unvaccinated because they do not perceive risk, doubt vaccine efficacy and are concerned about side effects. This review did not find information on co-interventions with HCW vaccination: hand washing, face masks, early detection of laboratory-proven influenza, quarantine, avoiding admissions, anti-virals, and asking HCWs with ILI not to work. We conclude there is no evidence that vaccinating HCWs prevents influenza in elderly residents in LTCFs. High quality RCTs are required to avoid risks of bias in methodology and conduct, and to test these interventions in combination.

Keywords: A H3n2, Analysis, Authors, Base, Bias, Care, Caring, Citation, Cohort, Collection, Complications, Criteria, Data, Death, Effects, Efficacy, Elderly, Evidence, Facilities, General, Incidence, Infections, Influenza, Information, Interventions, Long Term, Long-Term, Long-Term-Care, Medline, Methodology, Mortality, Nursing-Home Residents, Outcomes, Pathogens, Patients, People, Personnel, Pneumonia, Prevention, Public, Quality, Quarantine, Randomized Controlled-Trial, Rates, Review, Risk, Risks, Science, Science Citation Index Expanded, Search, SI, Side Effects, Strategy, The Elderly, Unvaccinated, Vaccination, Vaccine, Work

? Rodgers, M., Epstein, D., Bojke, L., Yang, H., Craig, D., Fonseca, T., Myers, L., Bruce, I., Chalmers, R., Bujkiewicz, S., Lai, M., Cooper, N., Abrams, K., Spiegelhalter, D., Sutton, A., Sculpher, M. and Woolacott, N. (2011), Etanercept, infliximab and adalimumab for the treatment of psoriatic arthritis: A systematic review and economic evaluation. *Health Technology Assessment*, **15** (10), 1-134.

Full Text: [2011\Hea Tec Ass15-10, 1.pdf](2011/Hea%20Tec%20Ass15-10,%201.pdf)

Abstract: Background: Etanercept, infliximab and adalimumab are licensed in the UK for the treatment of active and progressive psoriatic arthritis (PsA) in adults who have an inadequate response to standard treatment. Objective: To determine the clinical effectiveness, safety and cost-effectiveness of these biologic agents in the treatment of active and progressive PsA. Data sources: Systematic reviews were performed, with data sought from 10 electronic databases (MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, Science Citation Index, Conference Proceedings Citation Index Science, ClinicalTrials.gov, metaRegister of Current Controlled Trials, NHS Economic Evaluation Database, Health Economic Evaluations Database and EconLit) up to June 2009. Review methods: Full paper manuscripts of titles/abstracts considered relevant were obtained and assessed for inclusion by two reviewers according to criteria on study design, interventions, participants and outcomes. Data on study and participant characteristics, efficacy outcomes, adverse effects, costs to the health service and cost-effectiveness were extracted, along with baseline data where reported. The primary efficacy outcomes were measures of anti-inflammatory response, skin lesion response and functional status, and the safety outcome was the incidence of serious adverse events. The primary measure of cost-effectiveness was incremental cost per additional quality-adjusted life-year (QALY). Standard meta-analytic techniques were applied to efficacy data. Published cost-effectiveness studies and the economic analyses submitted to the. National Institute for Health and Clinical Excellence (NICE) by the biologic manufacturers were reviewed. An economic model was developed by updating the model produced by the York Assessment Group for the previous NICE appraisal of biologics in PsA. Results: Pooled estimates of effect demonstrated a significant improvement in patients with PsA for all joint disease and functional status outcomes at 12-14 weeks’ follow-up. The biologic treatment significantly reduced joint symptoms for etanercept [relative risk (RR) 2.60, 95% confidence interval (CI) 1.96 to 3.45], infliximab (RR 3.44, 95% CI 2.53 to 4.69) and adalimumab (RR 2.24, 95% CI 1.74 to 2.88), with 24-week data demonstrating maintained treatment effects. Trial data demonstrated a significant effect of all three biologics on skin disease at 12 or 24 weeks. Evidence synthesis found that infliximab appeared to be most effective across all outcomes of joint and skin disease. The response in joint disease was greater with etanercept than with adalimumab, whereas the response in skin disease was greater with adalimumab than with etanercept, although these differences are not statistically significant. Under base-case assumptions, etanercept was the most likely cost-effective strategy for patients with PsA and mild-to-moderate psoriasis if the threshold for cost-effectiveness was 20,000 pound or 30,000 pound per QALY. All biologics had a similar probability of being cost-effective for patients with PsA and moderate-to-severe psoriasis at a threshold of 20,000 pound per QALY. Limitations: Limited available efficacy data and difficulty in assessing PsA activity and its response to biologic therapy. Conclusions: The data indicated that etanercept, infliximab and adalimumab were efficacious in the treatment of PsA compared with placebo, with beneficial effects on joint symptoms, functional status and skin. Short-term data suggested that these biologic agents can delay joint disease progression and evidence to support their use in the treatment of PsA is convincing. Future research would benefit from long-term observational studies with large sample sizes of patients with PsA to demonstrate that beneficial effects are maintained, along with further monitoring of the safety profiles of the biologic agents.

Keywords: Active Rheumatoid-Arthritis, Adverse Effects, Analyses, Arthritis, Assessing, Assumptions, Baseline Data, Biologics, Characteristics, Citation, Clinical, Conference, Confidence, Controlled-Trial Impact, Cost, Cost Effectiveness, Cost-Effective, Cost-Effectiveness, Costs, Criteria, Data, Databases, Design, Disease, Economic, Economic Evaluation, Economic Model, Effectiveness, Effects, Efficacy, Estimates, Evaluation, Events, Evidence, Follow-Up, Functional Status, Health, Health-Assessment Questionnaire, Improvement, Incidence, Interval, Interventions, Long Term, Long-Term, Major Clinical-Response, Measure, Medline, Methods, Mixed Treatment Comparisons, Model, Modifying Antirheumatic Drugs, Monitoring, Observational, Observational Studies, Outcome, Outcomes, Patient-Reported Outcomes, Patients, Placebo, Primary, Profiles, Psoriasis, Qaly, Quality-Adjusted Life-Year, Quality-Of-Life, Randomized Controlled-Trials, Research, Review, Reviews, Risk, Safety, Science, Science Citation Index, Service, Skin, Skin Lesion, Sources, Standard, Strategy, Study Design, Support, Symptoms, Synthesis, Systematic Review, Techniques, Therapy, Threshold, Tnf-Alpha Therapy, Treatment, UK

? Craig, D., Fayter, D., Stirk, L. and Crott, R. (2011), Growth monitoring for short stature: Update of a systematic review and economic model. *Health Technology Assessment*, **15** (11), 1-64.

Full Text: [2011\Hea Tec Ass15-11, 1.pdf](2011/Hea%20Tec%20Ass15-11,%201.pdf)

Abstract: Objectives: The aim of the project was to compare different screening rules and/or referral cut-offs for the identification of children with disorders of short stature. We undertook an update of a previous systematic review and economic model that addressed the same question. Data sources: Sources searched included MEDLINE, EMBASE, Science Citation Index, Social Science Citation Index, Conference Proceedings Citation Index - Science/Social Science & Humanities, Cochrane Library 2009 Issue 4, Office of Health Economics Health Economic Evaluations Database, and the NHS Economic Evaluation Database. Review methods: The review was conducted as an update to our previous assessment in 2007. Searching covered January 2005 to November 2009 with no language or publication restrictions. Two reviewers examined full papers for relevance. Data extraction was conducted by one reviewer and independently checked by a second. In addition, searches were conducted to identify quality of life or utility papers to inform the economic evaluation. We developed a probabilistic decision analytic model to estimate the costs and quality-adjusted life-year (QALY) gains from the perspective of the UK NHS and personal social services. The model was a cohort model, assuming a homogeneous population of 5-year-olds at baseline. Results: One study was included in the systematic review. The study was not UK based, but had been identified in the brief as relevant to the UK setting. The study’s authors examined the performance of a number of rules to determine sensitivity and specificity of referral for short stature in four patient groups and three reference groups in the Netherlands. They derived an algorithm for referral based on the optimal rules. No new studies were located that provided appropriate quality of life or utilities data for the economic model. The model was based on the previous assessment which was updated to better reflect current UK clinical practice. We compared two alternative monitoring strategies, one of which was based on the study identified in our systematic review (Grote strategy); the other was based on UK consensus (UK strategy). We identified that the UK strategy was the least effective and least costly, with a mean gain of 0.001 QALYs at a mean cost of 21. The Grote strategy was both more expensive and more effective, with a mean cost of 68 and a mean QALY gain of 0.042. The incremental cost-effectiveness ratio was 1144 per QALY gained. Conclusions: This assessment contributes further knowledge, but does not provide definitive answers on how to deliver growth monitoring. In particular, we were unable to ascertain current practice in the UK for growth screening. Further, we were unable to evaluate through the use of identified studies and modelling an optimal referral cut-off and age at which to screen. We identified a number of research questions that would further inform referral strategies, which in summary would involve further primary and secondary data collection.

Keywords: Age, Algorithm, Alternative, Assessment, Authors, Body-Mass Index, Catch-Up Growth, Celiac-Disease, Children, Citation, Clinical, Clinical Practice, Cohort, Collection, Conference, Consensus, Cost, Cost Effectiveness, Cost-Effectiveness, Costs, Data, Data Collection, Decision, Economic, Economic Evaluation, Economic Model, Evaluation, Extraction, For-Gestational-Age, Growth, Hormone-Treatment, Humanities, Identification, Idiopathic-Short-Stature, Knowledge, Life, Medline, Methods, Model, Modelling, Monitoring, Papers, Performance, Population, Population-Based Cohort, Practice, Primary, Publication, Qaly, Quality, Quality of, Quality of Life, Quality-Adjusted Life-Year, Quality-of-Life, Reference, Reference Values, Relevance, Research, Restrictions, Review, Science, Science Citation Index, Screening, Sensitivity, Services, Short Stature, Social, Social Science Citation Index, Sources, Specificity, Strategy, Systematic Review, The Netherlands, Turner-Syndrome, UK, Utility

? Hislop, J., Quayyum, Z., Elders, A., Fraser, C., Jenkinson, D., Mowatt, G., Sharma, P., Vale, L. and Petty, R. (2011), Clinical effectiveness and cost-effectiveness of imatinib dose escalation for the treatment of unresectable and/or metastatic gastrointestinal stromal tumours that have progressed on treatment at a dose of 400 mg/day: A systematic review and economic evaluation. *Health Technology Assessment*, **15** (25), 1-178.

Full Text: [2011\Hea Tec Ass15-25, 1.pdf](2011/Hea%20Tec%20Ass15-25,%201.pdf)

Abstract: Background: Imatinib dose escalation is advocated for gastrointestinal stromal tumour (GIST) treatment, but its effectiveness compared with sunitinib and best supportive care (BSC) after failure at the 400 mg/day dose is unknown. Objectives: To assess the effectiveness and cost-effectiveness of imatinib at escalated doses of 600 or 800 mg/day for patients with unresectable and/or metastatic GISTs whose disease had progressed on 400 mg/day. Data sources: Electronic databases, including MEDLINE, MEDLINE In-Process, EMBASE, BIOSIS, Science Citation Index, Health Management Information Consortium and the Cochrane Controlled Trials Register, were searched until September 2009. Review methods: A systematic review of the literature was carried out according to standard methods. An economic model was constructed to assess the cost-effectiveness of seven alternative pathways for treating patients with unresectable and/or metastatic GISTs. Results: Five primary studies involving 669 people were included for clinical effectiveness; four reported imatinib and one reported sunitinib. The data were essentially observational as none of the studies was designed to specifically assess treatment of patients whose disease had progressed on 400 mg/day imatinib. For 600 mg/day imatinib, between 26% and 42% of patients showed either a partial response (PR) or stable disease (SD). Median time to progression was 1.7 months (range 0.7-24.9 months). For 800 mg/day imatinib, between 29% and 33% of patients showed either a PR or SD. Median overall survival (OS) was 19 months [95% confidence interval (Cl) 13 to 23 months]. Progression-free survival ranged from 81 days to 5 months (95% Cl 2 to 10 months). Median duration of response was 153 days (range 37-574 days). Treatment progression led to 88% discontinuations but between 16% and 31% of patients required a dose reduction, and 23% required a dose delay. There was a statistically significant increase in the severity of fatigue (p < 0.001) and anaemia (p = 0.015) following dose escalation. For sunitinib, median OS was 90 weeks (95% Cl 73 to 106 weeks). For the cost-effectiveness review, only one full-text study and one abstract were identified, comparing imatinib at an escalated dose, sunitinib and BSC, although neither was based on a UK context. The definition of BSC was not consistent across the studies, and the pattern of resources (including drugs for treatment) and measures of effectiveness also varied. Within the model, BSC (assumed to include continuing medication to prevent tumour flare) was the least costly and least effective. It would be the care pathway most likely to be cost-effective when the cost per quality-adjusted life-year threshold was <25,000 pound. Imatinib at 600 mg/day was most likely to be cost-effective at a threshold between 25,000 pound and 45,000 pound. Imatinib at 600 mg/day followed by further escalation followed by sunitinib was most likely to be cost-effective at a threshold >45,000 pound. Limitations: The evidence base was sparse, data were non-randomised and potentially biased. The economic model results are surrounded by a considerable degree of uncertainty and open to biases of unknown magnitude and direction. Conclusions: Around one-third of patients with unresectable and/or metastatic GIST, who fail on 400 mg/day of imatinib, may show response or SD with escalated doses. Between a threshold of 25,000 pound and 45,000 pound, provision of an escalated dose of imatinib would be most likely to be cost-effective. However, these results should be interpreted with caution owing to the limited evidence available on outcomes following imatinib dose escalation or sunitinib for this group of patients.

Keywords: Anaemia, Best Supportive Care, BSC, C-Kit, Citation, Clinical Effectiveness, Cochrane, Computed-Tomography, Cost-Effectiveness, Databases, Differential-Diagnosis, Disease, Drugs, Effectiveness, EMBASE, Evaluation, Fatigue, Gastrointestinal, Health, Literature, Management, Medication, Medline, Model, Observational, Of-Function Mutations, Outcomes, Patients, Phase-II Trial, Positron-Emission-Tomography, Primary, Progression, Response Evaluation, Review, Science, Science Citation Index, Survival, Systematic, Systematic Review, Treatment, Treatment-Use Trial, Tumours, Tyrosine Kinase Inhibitor, UK, Worldwide Treatment-Use

? Greenhalgh, J., Bagust, A., Boland, A., Saborido, C.M., Oyee, J., Blundell, M., Dundar, Y., Dickson, R., Proudlove, C. and Fisher, M. (2011), Clopidogrel and modified-release dipyridamole for the prevention of occlusive vascular events (review of Technology Appraisal No. 90): A systematic review and economic analysis. *Health Technology Assessment*, **15** (31), 1-178.

Full Text: [2011\Hea Tec Ass15-31, 1.pdf](2011/Hea%20Tec%20Ass15-31,%201.pdf)

Abstract: Background: Occlusive vascular events such as myocardial infarction (MI), ischaemic stroke and transient ischaemic attack (TIA) are the result of a reduction in blood flow associated with an artery becoming narrow or blocked through atherosclerosis and atherothrombosis. Peripheral arterial disease is the result of narrowing of the arteries that supply blood to the muscles and other tissues, usually in the lower extremities. The primary objective in the treatment of all patients with a history of occlusive vascular events and peripheral arterial disease is to prevent the occurrence of new occlusive vascular events. Objectives: To assess the clinical effectiveness and cost-effectiveness of clopidogrel and modified-release dipyridamole (MRD) alone or with aspirin (ASA) compared with ASA (and each other where appropriate) in the prevention of occlusive vascular events in patients with a history of MI, ischaemic stroke/TIA or established peripheral arterial disease. To consider the clinical effectiveness and cost-effectiveness of clopidogrel in patients with multivascular disease. This review is an update of the evidence base for the National Institute for Health and Clinical Excellence (NICE) guidance Technology Appraisal No. 90 (TA90) entitled Clopidogrel and modified-release dipyridamole for the prevention of occlusive vascular events (2005). Data sources: Four electronic databases (EMBASE, MEDLINE, Web of Science and The Cochrane Library) were searched for randomised controlled trials (RCTs) and economic evaluations. Submissions to NICE by the manufacturers of the interventions were also considered. Review methods: A systematic review of clinical effectiveness and cost-effectiveness was conducted. To manage heterogeneity between trials, indirect analysis (using a mixed-treatment methodology) was performed on selected clinical outcomes. A new economic model was developed to assess incremental costs per life-year gained [quality-adjusted life-years (QALYs)]. Results: For evidence of clinical effectiveness, four RCTs were identified: CAPRIE (Clopidogrel versus Aspirin in Patients at Risk of Ischaemic Events), ESPRIT (European/Australasian Stroke Prevention in Reversible Ischaemia Trial), PRoFESS (Prevention Regimen For Effectively avoiding Second Strokes) and ESPS-2 (Second European Stroke Prevention Study). In CAPRIE (patients with MI, ischaemic stroke or peripheral arterial disease), statistically significant outcomes in favour of clopidogrel were noted for the primary outcome (first occurrence of ischaemic stroke, MI or vascular death) compared with ASA [relative risk reduction 8.7%; 95% confidence interval (Cl) 0.3% to 16.5%; p=0.043]. In ESPRIT (patients with ischaemic stroke/TA) for the primary outcome (first occurrence of death from all vascular causes, non-fatal stroke, non-fatal MI or major bleeding complication), the risk of event occurrence was statistically significantly lower in the MRD+ASA arm than in the ASA arm [hazard ratio (HR) 0.80; 95% Cl 0.66 to 0.98], with no statistically significant difference in bleeding events between the two arms. In PRoFESS (patients with ischaemic stroke) the rate of recurrent stroke of any type (primary outcome) was similar in the MRD+ASA and clopidogrel groups, and the null hypothesis (that MRD+ASA was inferior to clopidogrel) could not be rejected. In ESPS-2 (patients with ischaemic stroke/TIA), on the primary outcome of stroke, statistically significant differences in favour of MRD+ASA were observed compared with ASA and MRD alone (relative risk 0.76; 95% Cl 0.63 to 0.93). The outcomes addressed in the mixed-treatment comparisons (limited by the available data) for the ischaemic strokeTTIA population confirmed the results of the direct comparisons. The 11 economic evaluations included in the review of cost-effectiveness indicated that for patients with previous peripheral arterial disease, ischaemic stroke or MI, clopidogrel is cost-effective compared with ASA, and for patients with previous ischaemic strokeTTIA, treatment with MRD+ASA is cost-effective compared with any other treatment in patients in the secondary prevention of occlusive vascular events. The relevance of the review was limited as the economic evaluations were not based on the most current clinical data. Cost-effectiveness results generated from the Assessment Group’s de novo economic model suggested that the most cost-effective approach for patients with ischaemic stroke/TIA is clopidogrel followed by MRD + ASA then ASA. For patients with MI, the most cost-effective approach is ASA followed by clopidogrel. For patients with established peripheral arterial disease, the most cost-effective approach is clopidogrel followed by ASA. For patients with multivascular disease, clopidogrel followed by ASA is the most cost-effective approach. Incremental cost-effectiveness ratios (ICERs) were also calculated for patients who are intolerant to ASA. Assuming that the branded price for clopidogrel is used and TA90 guidance is not applied, all of the ICERs range between 2189 and 13,558 per QALY gained. Probabilistic sensitivity analyses were fully consistent with these findings. Conclusions: The evidence suggests that the most cost-effective treatment for patients with ischaemic stroke/TIA is clopidogrel followed by MRD + ASA followed by ASA; for patients with MI, ASA followed by clopidogrel; and for patients with established peripheral arterial disease or multivascular disease, clopidogrel followed by ASA.

Keywords: Acute Coronary Syndromes, Analysis, Arteries, Aspirin, Aspirin Plus Dipyridamole, Assessment, Blood, Blood Flow, Clinical Effectiveness, Clopidogrel, Cochrane, Community-Stroke-Project, Composite End-Points, Cost-Effectiveness, Cost-Effectiveness Analysis, Costs, Databases, Differences, Disease, Effectiveness, Embase, Excellence, Health, High-Risk Patients, History, Interventions, Medline, Methodology, Model, Myocardial Infarction, Outcome, Outcomes, Patients, Peripheral Arterial-Disease, Placebo-Controlled Trial, Prevention, Primary, Ratio, Reduction, Relative Risk, Review, Risk, Risk Reduction, Science, Secondary Prevention, Sensitivity, Stroke, Systematic, Systematic Review, Transient Ischemic Attack, Treatment, Web of Science

? Carroll, C., Stevenson, M., Scope, A., Evans, P. and Buckley, S. (2011), Hemiarthroplasty and total hip arthroplasty for treating primary intracapsular fracture of the hip: A systematic review and costeffectiveness analysis. *Health Technology Assessment*, **15** (36), 1-74.

Full Text: [2011\Hea Tec Ass15-36, 1.pdf](2011/Hea%20Tec%20Ass15-36,%201.pdf)

Abstract: Background: Hip fracture is a common problem in people aged > 60 years. The treatment options for individuals with high pre-fracture mobility, function and independence are hemiarthroplasty (HA) and total hip arthroplasty (THA). Objective: The aim of this report is to assess the clinical effectiveness and cost-effectiveness evidence of THA compared with HA in patients with displaced intracapsular fracture who are cognitively intact with high pre-fracture mobility or function. Data sources: A systematic search was made of 11 databases of published and unpublished literature from their inception to December 2010: MEDLINE, EMBASE, Cumulative Index to Nursing and Allied Health Literature, The Cochrane Library, Biological Science Citation Index, Social Science Citation Index, Conference Proceedings Citation Index - Science, UK Clinical Trials Research Network and the National Research Register archive, Current Controlled Trials and ClinicalTrials.gov. Review methods: A systematic review of randomised controlled trials (RCTs) to assess the effectiveness of THA compared with HA in terms of dislocations, revisions, pain and function, and quality of life. Meta-analysis, independent subgroup analyses and exploratory cost-effectiveness modelling were performed. Results: The literature search identified 532 unique citations, of which eight RCTs with almost 1000 participants satisfied the criteria for the effectiveness review. Meta-analysis found a statistically significant increased risk of dislocation for patients treated with THA compared with HA (p=0.01), but a reduced risk of revision (p=0.0003). There were no differences in terms of mortality. In all trials, individuals treated with THA reported better function and mobility and less pain than those treated with HA. Four trials reporting utility data found similar trends. Sensitivity analyses indicated that there were no statistically significant differences in outcomes based on follow-up, study quality, surgical approach taken, type of head or the use of cement. Four papers reported a cost-utility analysis or the cost-effectiveness of THA compared with HA. Exploratory modelling was undertaken that showed that THA is likely to be cost-effective compared with HA even when the limitations of the data and methodology are considered. Limitations: The costs and disutilities associated with revisions and dislocations were not included in the economic evaluation. Conclusions: THA appears to be more cost-effective than HA. It is likely that THA will be associated with increased costs in the initial 2-year period, but lower longer-term costs, owing to potentially lower revision rates. However, these longer-term costs have not been modelled. The capacity and experience of surgeons to perform THA have not been explored and these would need to be addressed at local level were THA to become recommended for active, elderly patients in whom THA is not contraindicated. Further studies examining the impact of surgeon experience on performing the two procedures may offer more robust evidence on outcomes.

Keywords: Aged, Analysis, Arthroplasty, Bipolar Hemiarthroplasty, Capacity, Citation, Citations, Clinical Effectiveness, Cochrane, Conference, Cost-Effectiveness, Cost-Utility Analysis, Costs, Databases, Differences, Displaced Subcapital Fractures, Effectiveness, Elderly, Embase, Evaluation, Expected Value, Femoral-Neck Fractures, Follow-up, Fracture, Health, Impact, Internal-Fixation, Literature, Medline, Meta Analysis, Meta-Analysis, Methodology, Modelling, Mortality, Network, Nursing, Older Patients, Outcomes, Pain, Papers, Patients, Primary, Quality, Quality of Life, Randomized Controlled-Trial, Replacement, Research, Review, Risk, Science, Science Citation Index, Social Science, Surgical, Systematic, Systematic Review, Treatment, Trends, Trial Comparing Hemiarthroplasty, UK

# Title: Healthcare Quarterly

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Subject Categories:

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? Ungar, W.J. (2007), Paediatric health economic evaluations: A world view. *Healthcare Quarterly*, **10** (1), 134-140.

Abstract: OBJECTIVES: As economic evaluation methods evolve, their applicability to special populations, such as children, has received increased scrutiny. The objective was to review paediatric health economic evaluations published over the last quarter century, comment on trends, discuss gaps between developed and developing nations, and point to future directions for research. METHODS: Data compiled for the Paediatric Economic Database Evaluation (PEDE) project to 2003 were used to describe temporal and geographic trends and evaluate the frequency of intervention categories and conditions studied. RESULTS: The volume of paediatric health economic evaluations rose rapidly since 1980. Studies of infective/parasitic diseases, congenital anomalies and complications of pregnancy accounted for the majority. Prevention rather than treatment was emphasized. Most evaluations performed since 1998 (78%) were cost-effectiveness analyses. Cost-utility analyses were rare. The US produced half of all publications, with the U.K. contributing 12%. Economic evaluations from developing countries were uncommon, despite an urgent need for evidence-based decision-making in these regions. The interventions studied reflected local health priorities; HIV and malaria prevention were more commonly studied in developing nations, whereas treatments for asthma and birth malformations were more often evaluated in developed nations. CONCLUSIONS: Despite global initiatives to combat disease, developing nations rely on foreign research to inform implementation of local health programs. There is a need for better methods for data transfer and extrapolation. Future research must focus on paediatric models of costs and consequences and the development of tools to measure long-term effects.

Keywords: Analyses, Asthma, Birth, Children, Complications, Complications of Pregnancy, Congenital, Congenital Anomalies, Cost Effectiveness, Cost-Effectiveness, Costs, Data, Decision Making, Decision-Making, Developing, Developing Countries, Development, Diseases, Economic, Economic Evaluation, Evaluation, Evaluation Methods, Evidence Based, Evidence-Based, Evidence-Based Decision-Making, Extrapolation, Health, HIV, Implementation, Intervention, Interventions, Local, Long Term, Long-Term, Malaria, Malformations, Methods, Models, Nations, Objectives, Populations, Pregnancy, Prevention, Publications, Research, Review, Temporal, Treatment, Trends, US, Volume, World

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Cardiac & Cardiovascular Systems: Impact Factor

Maheswaran, R., Morris, S., Falconer, S., Grossinho, A., Perry, I., Wakefield, J. and Elliott, P. (1999), Magnesium in drinking water supplies and mortality from acute myocardial infarction in north west England. *Heart*, **82** (4), 455-460.

Full Text: [1999\Heart82, 455.pdf](1999/Heart82,%20455.pdf)

Abstract: OBJECTIVES: To examine whether higher concentrations of magnesium in drinking water supplies are associated with lower mortality from acute myocardial infarction at a small area geographical level; to examine if the association is modified by age, sex, and socioeconomic deprivation.

DESIGN: Small area geographical study using 13, 794 census enumeration districts. Water constituent concentrations (magnesium, calcium, fluoride, lead) measured at water supply zone and assigned to enumeration districts.

SETTING: 305 water supply zones in north west England.

SUBJECTS: Resident population of 1, 124, 623 men and 1, 372, 036 women (1991 census) aged 45 years or more.

MAIN OUTCOME MEASURE: Mortality from acute myocardial infarction, International Classification of Diseases, ninth revision (ICD-9) 410. Subsidiary analysis examined deaths from ischaemic heart disease, ICD 410-414.

RESULTS: There were 21, 339 male and 17, 883 female deaths from acute myocardial infarction in 1990-92. Drinking water magnesium concentrations in water zones ranged from 2 mg/l to 111 mg/l (mean (SD) 19 (20) mg/l, median 12 mg/l); 24% of variation in magnesium concentrations was within zone and 76% was between zone. The relative risk of mortality from acute myocardial infarction (standardised for age, sex, and Carstairs deprivation quintile) for a quadrupling of magnesium concentrations in drinking water (for example, 20 mg/l v 5 mg/l) was 1.01 (95% confidence interval (CI) 0.99 to 1.03). When adjusted for north-south and east-west trends in mortality from acute myocardial infarction and for drinking water calcium, fluoride, and lead concentrations, this relative risk was 1.01 (95% CI 0.96 to 1.06). There was no evidence of a protective effect for acute myocardial infarction even among age, sex, and deprivation groups that were likely to be relatively magnesium deficient. For ischaemic heart disease mortality there was an apparent protective effect of magnesium and calcium (with calcium predominating in the joint model), but these were no longer significant when the geographical trends were incorporated.

CONCLUSIONS: No evidence was found of an association between magnesium concentrations in drinking water supplies and mortality from acute myocardial infarction. These results do not support the hypothesis that magnesium is the key water factor in relation to mortality from heart disease.

? Hackam, D.G. and Eikelboom, J.W. (2007), Antithrombotic treatment for peripheral arterial disease. *Heart*, **93** (3), 303-308.

Full Text: [2007\Heart93, 303.pdf](2007/Heart93,%20303.pdf)

Abstract: Context: Patients with peripheral arterial disease (PAD) bear a substantial risk for vascular events in the coronary, cerebral and peripheral circulations. In addition, this disorder is associated with a systemic milieu characterised by ongoing platelet activation and heightened thrombogenesis. Objective: To determine the optimal antithrombotic prophylaxis for patients with PAD. Data sources: Using terms related to PAD and antithrombotic agents, we searched the following databases for relevant articles: MEDLINE, EMBASE, the Cochrane Central Register of Controlled Trials, the Cochrane Database of Systematic Reviews, the National Institutes of Health Clinical Trials Database, Web of Science, and the International Pharmaceutical Abstracts Database (search dates: 1 January 1990 to 1 January 2007). Additional articles were identified from cardiovascular and vascular surgery conference proceedings, bibliographies of review articles, and personal files. Study selection: We focused on randomised trials, systematic reviews and consensus guidelines of antithrombotic therapies for PAD. Data extraction: Detailed study information was abstracted by each author working independently. Results: Multiple studies show that patients with PAD manifest platelet hyperaggregability, increased levels of soluble platelet activation markers, enhanced thrombin generation and altered fibrinolytic potential. Many of these markers predict subsequent cardiovascular events. Available randomised trials and meta-analyses show that most available antithrombotic agents prevent major cardiovascular events and death in patients with PAD, including aspirin, aspirin/dipyridamole, clopidogrel, ticlopidine, picotamide and oral anticoagulants. Conclusions: Although the most favourable risk-benefit profile, cost-effectiveness and overall evidence base supports aspirin in this setting, we provide scenarios in which alternatives to aspirin should be considered.

Keywords: Anticoagulants, Antiplatelet Therapy, Author, Cardiovascular, Cochrane, Cost-Effectiveness, Databases, Disease, Disorder, Embase, Guidelines, Health, High-Risk Patients, Information, Intermittent Claudication, Medline, Occlusive Disease, P-Selectin Expression, Placebo-Controlled Trial, Platelet Activation, Profile, Quality-of-Life, Randomized Controlled-Trial, Review, Risk, Science, Surgery, Systematic, Systematic Reviews, Treatment, Vascular-Disease, Web of Science

? Spruit, M.A., Eterman, R.M.A., Hellwig, V.A.C.V., Janssen, P.P., Wouters, E.F.M. and Uszko-Lencer, N.H.M.K. (2009), Effects of moderate-to-high intensity resistance training in patients with chronic heart failure. *Heart*, **95** (17), 1399-1408.

Full Text: [2009\Heart95, 1399.pdf](2009/Heart95,%201399.pdf)

Abstract: Context: Resistance training may be beneficial for patients with chronic heart failure (CHF). Objective: To systematically review the methodological quality of, and summarise the effects of, moderate-to-high intensity resistance training in CHF. Data sources: Medline/PubMed, Science Citation Index Expanded, SSCI and A&HCI. Study selection: English language (non-)randomised controlled trials. Data extraction: A predesigned data extraction form was used to obtain data on trial design and relevant results. Methodological quality of the identified trials were scored using the Delphi list. Results: Most of the 10 trials identified had moderate-to-severe methodological limitations. Effects of resistance training (alone or in combination with endurance training) are inconclusive for outcomes like exercise capacity and disease-specific quality of life. Conclusions: Even though moderate-to-high intensity resistance training does not seem be harmful for patients with CHF, the current peer-reviewed evidence seems inadequate to generally recommend incorporation of resistance training into exercise-based rehabilitation programmes for patients with CHF.

Keywords: Citation, Dilated Cardiomyopathy, Exercise, Exercise Prescription, Hemodynamic-Responses, Insulin Sensitivity, Neurohormonal Activation, NT-Probnp Levels, Outcomes, Physical-Activity, Quality, Quality-of-Life, Randomized-Trials, Science, Skeletal-Muscle Function

? Siller-Matula, J.M., Huber, K., Christ, G., Schr\ör, K., Kubica, J., Herkner, H. and Jilma, B. (2011), Impact of clopidogrel loading dose on clinical outcome in patients undergoing percutaneous coronary intervention: A systematic review and meta-analysis. *Heart*, **97** (2), 98-105.

Full Text: [2011\Heart97, 98.pdf](2011/Heart97,%2098.pdf)

Abstract: Context Enhanced platelet inhibition by clopidogrel decreases the risk of ischemic events but carries a risk for a concomitant increase in bleeding. Objectives To compare the efficacy and safety of two clopidogrel loading regimens (300mg vs. 600mg) in patients undergoing percutaneous coronary intervention (PCI) at one month after start of therapy. Data sources A systematic literature search of MEDLINE, EMBASE, CENTRAL, and Web of Science databases using predefined search terms for relevant articles in any language. Study selection and data extraction Randomised controlled trials and non-randomised studies reporting adjusted effect estimates were included. Summary estimates of the risks ratios (RRs) with therapy were calculated using a random-effect model. Outcomes evaluated were combined major adverse cardiovascular events (MACE) and major bleedings. Results Seven studies met the inclusion criteria and included 25,383 patients. A 600mg clopidogrel loading was associated with a 34% relative risk reduction of MACE (RR-0.66; 95% confidence intervals CI=0.52-0.84; p< 0.001). Sub-analysis revealed a 47% risk reduction of MACE in randomised trials (RR=0.53; 95% CI=0.32-0.88; p=0.01) and a 31% relative risk reduction in non-randomised trials (RR=0.69; 95% CI=0.54-0.90; p=0.005) in patients receiving 600mg loading with clopidogrel. In patients suffering from acute coronary syndrome, 600mg clopidogrel loading was associated with a 24% relative risk reduction in MACE (RR=0.76; 95% CI 0.60-0.95; p=0.02). Importantly, the 600mg clopidogrel loading dose was not associated with an increased risk of major bleedings (RR=0.91; 95% CI=0.73-1.15; p=0.44). Conclusions This meta-analysis demonstrates that intensified clopidogrel loading with 600mg reduces the rate of major cardiovascular events without increase in major bleeding compared to 300mg in patients undergoing PCI during one month follow-up.

Keywords: Acute Coronary Syndrome, Acute Myocardial-Infarction, American-College, Antiplatelet Therapy, Association Task-Force, Cardiovascular, Confidence Intervals, Databases, Efficacy, Embase, Follow-Up, Healthy-Subjects, Impact, Intervention, Literature, Medline, Meta-Analysis, Model, Outcome, Outcomes, Pci, Percutaneous Coronary Intervention, Phosphoprotein Phosphorylation Assay, Platelet Reactivity, Prasugrel, Relative Risk, Review, Risk, Risk Reduction, Safety, Science, St-Segment Elevation, Systematic, Systematic Review, Therapy, Vasp-Phosphorylation, Web of Science

? Liu, T., Korantzopoulos, P., Shehata, M., Li, G.P., Wang, X.Z. and Kaul, S. (2011), Prevention of atrial fibrillation with omega-3 fatty acids: A meta-analysis of randomised clinical trials. *Heart*, **97** (13), 1034-1040.

Full Text: [2011\Heart97, 1034.pdf](2011/Heart97,%201034.pdf)

Abstract: Context Previous randomised controlled trials (RCT) regarding n-3 PUFA supplementation for atrial fibrillation (AF) prevention have yielded conflicting results. Objective A systematic review and meta-analysis of RCT was conducted to examine the role of n-3 PUFA in AF prevention. Data Sources MEDLINE, Web of Science and Cochrane clinical trials database were searched until November 2010. Study Selection of 127 initially identified studies, 10 RCT with 1955 patients were finally analysed. Data Extraction Two blinded reviewers extracted data independently to a predefined form. Disagreements were resolved through discussion and consensus. Results n-3 PUFA had no significant effect on the prevention of AF (OR 0.81, 95% CI 0.57 to 1.15; p = 0.24). There was significant heterogeneity among the studies (p = 0.002, I(2) = 65.0%). Subgroup analysis showed no significant beneficial effect of fish oils in any subset of population. Conclusions No significant effects of n-3 PUFA supplementation on AF prevention were observed in this meta-analysis. A large-scale trial with higher doses and longer follow-up might be required to rule out the possibility of any treatment benefit.

Keywords: Analysis, Artery-Bypass Surgery, Clinical Trials, Cochrane, Decrease, Double-Blind, Efficacy, Extraction, Fish, Follow-up, Medline, Meta-Analysis, Myocardial-Infarction, Placebo-Controlled Trial, Polyunsaturated Fatty-Acids, Prevention, Review, Risk, Science, Sources, Supplementation, Systematic, Systematic Review, Treatment, Web of Science

? Hernández, A.V., Pasupuleti, V., Deshpande, A., Bernabé-Ortiz, A. and Miranda, J.J. (2012), Effect of rural-to-urban within-country migration on cardiovascular risk factors in low- and middle-income countries: A systematic review. *Heart*, **98** (3), 185-194.

Full Text: [2012\Heart98, 185.pdf](2012/Heart98,%20185.pdf)

Abstract: Context Limited information is available of effects of rural-to-urban within-country migration on cardiovascular (CV) risk factors in low-and middle-income countries (LMIC). Objective A systematic review of studies evaluating these effects was performed with rural and/or urban control groups. Study selection Two teams of investigators searched observational studies in Medline, Web of Science and Scopus until May 2011. Studies evaluating international migration were excluded. Data extraction Three investigators extracted the information stratified by gender. Information on 17 known CV risk factors was obtained. Results Eighteen studies (n=58 536) were included. Studies were highly heterogeneous with respect to study design, migrant sampling frame, migrant urban exposure and reported CV risk factors. In migrants, commonly reported CV risk factorsdsystolic and diastolic blood pressure, body mass index, obesity, total cholesterol and low-density lipoprotein-were usually higher or more common than in the rural group and usually lower or less common than in the urban group. This gradient was usually present in both genders. Anthropometric (waist-to-hip ratio, hip/waist circumference, triceps skinfolds) and metabolic (fasting glucose/insulin, insulin resistance) risk factors usually followed the same gradient, but conclusions were weak as information was insufficient. Hypertension, high-density lipoprotein, fibrinogen and C-reactive protein did not follow any pattern. Conclusions In LMIC, most but not all, CV risk factors are higher or more common in migrants than in rural groups but lower or less common than in urban groups. Such gradients may or may not be associated with differential CV events and long-term evaluations are necessary.

Keywords: And Middle-Income Countries, Blood, Blood Pressure, Blood-Pressure, Body Mass Index, Cardiovascular, Cardiovascular Risk, Cholesterol, Control, Control Groups, Design, Epidemiology, Exposure, Extraction, Fasting, Gender, Hypertension, Information, Insulin, Lipoprotein, Low, Low- And Middle-Income Countries, Medline, Metaanalysis, Migrants, Migration, Obesity, Observational, Observational Studies, Pressure, Ratio, Resistance, Review, Risk, Risk Factors, Science, Scopus, Systematic, Systematic Review, Tanzania, Total Cholesterol, Urban, Web of Science

# Title: Heart Lung and Circulation

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? Chand, V., Rosenfeldt, F.L. and Pepe, S. (2008), The publication rate and impact of abstracts presented at the Cardiac Society of Australia and New Zealand (1999-2005). *Heart Lung and Circulation*, **17** (5), 375-379.

Full Text: [2008\Hea Lun Cir17, 375.pdf](2008/Hea%20Lun%20Cir17,%20375.pdf)

Abstract: Aims: As there is no current information regarding the fate of abstracts presented at annual scientific meetings of the Cardiac Society of Australia and New Zealand (CSANZ), we examined the publication rate and indexed impact of original articles arising from these abstracts. Methods: Conference abstracts from 1999 to 2005 were evaluated as these were accessible in electronic file form. Searches were conducted for abstract authors and keywords were searched for in journal publication citations (to November 30, 2007) in the National Library of Medicine (NIH, USA) PubMed database. A match of abstract to retrieve full article was identified on the basis of authorship, similarities in titles and study design. The ISI Web of Knowledge(SM) citation database (Philadelphia, USA) was accessed for journal Citation Reports (R) impact factors (IF). Results: A total of 2172 abstract presentations resulted in 648 original publications (30%, mean IF = 4.4). Most publications were published within 1 (61%) or 2 years (84%), with a mean lag of 1.5 years. The proportions of abstract presentations represented by Clinical, Basic Science and Surgical categories were 70.6%, 26.9%, and 2.5%, respectively. Subsequent publication rates (and IF) arising from within these categories were 25.8% (IF = 4.8), 34.4% (IF = 5.1) and 97.9% (IF= 3.1), respectively. Conclusions: (1) Almost a third of CSANZ abstract presentations result in publication of an original article. (2) Most are published within 1-2 years. (3) The average IF is mid-range, with 32% of publications having an IF above 4.4. Despite the limitations to publication faced by CSANZ members, a high quality and timely publication rate is nonetheless evident.

Keywords: Annual Scientific Meetings, Australia, Authors, Authorship, Cardiology, Citation, Citations, Database, Design, Fate, Fate of Abstracts, Impact, Impact Factors, Information, ISI, Journal, Journals, New Zealand, NIH, Publication, Publication Rate, Publications, Pubmed, Quality, Rates, Study Design, USA

# Title: Heart Rhythm

Full Journal Title: Heart Rhythm

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Baker, W.L., White, C.M., Kluger, J., Denowitz, A., Konecny, C.P. and Coleman, C.I. (2007), Effect of perioperative corticosteroid use on the incidence of postcardiothoracic surgery atrial fibrillation and length of stay. *Heart Rhythm*, **4** (4), 461-468.

Abstract: BACKGROUND While the mechanism underlying the development of post-cardiothoracic surgery atrial fibrillation has not been fully elucidated, it has been suggested that inflammation may play a causative role. Corticosteroids have been traditionally used to reduce inflammation, and when administered perioperatively, they may decrease the incidence of atrial fibrillation. OBJECTIVE The purpose of this study was to investigate the effects of corticosteroid administration on the incidence of post-cardiothoracic surgery atrial fibrillation and resultant hospital length of stay. METHODS A systematic literature search of MEDLINE, EMBASE, Web of Science, and the Cochrane Database of Systematic Reviews through July 2006 was conducted using specific search terms. A review of cardiology abstracts and a manual review of references were also performed. Studies that met the following criteria were included: randomized, controlled trials comparing patients receiving perioperative corticosteroids or placebo and reporting data on post-cardiothoracic surgery atrial fibrillation. A random-effects model was used. RESULTS Nine of the 1396 citations initially identified, representing 990 patients, met the inclusion criteria. Upon meta-analysis, corticosteroids significantly lowered patients’ odds of developing post-cardiothoracic surgery atrial fibrillation by 45% (odds ratio [OR] 0.55; 95% confidence interval [CI] 0.39-0.78) and reduced hospital Length of stay by approximately 1.6 days (weighted mean difference -1.59; 95% CI -2.96 to -0.21). Reductions in the incidence of post-cardiothoracic surgery atrial fibrillation appeared greatest in patients receiving intermediate doses of corticosteroid (50-210 mg dexamethasone equivalent), while both lower (up to 8 mg) and higher (236-2850 mg) dosing resulted in blunted effects. CONCLUSION Corticosteroids appear to reduce the incidence of post-cardiothoracic surgery atrial fibrillation and shorten hospital length of stay in randomized controlled trials.

Keywords: C-Reactive Protein, Cardiac-Surgery, Cardiopulmonary Bypass, Citations, Cochrane, Corticosteroid, Development, Embase, Glucocorticoids, Hospital, Inflammation, Interleukin-6 Levels, Length of Stay, Literature, Mechanism, Medline, Meta-Analysis, Methylprednisolone, Model, Randomized Controlled Trials, Randomized-Trial, Ratio, Review, Risk, Science, Surgery, Systematic, Therapy, Web of Science

? Mallidi, J., Nadkarni, G.N., Berger, R.D., Calkins, H. and Nazarian, S. (2011), Meta-analysis of catheter ablation as an adjunct to medical therapy for treatment of ventricular tachycardia in patients with structural heart disease. *Heart Rhythm*, **8** (4), 503-510.

Abstract: BACKGROUND Most studies of catheter ablation for the treatment of ventricular tachycardia (VT) are relatively small observational trials. OBJECTIVE The purpose of this study was to define the relative risk of VT recurrence in patients undergoing catheter ablation as an adjunct to medical therapy versus medical therapy alone in a pooled analysis of controlled studies. METHODS Randomized and nonrandomized controlled trials of patients who underwent adjunctive catheter ablation of VT versus medical therapy alone were sought. MEDLINE, EMBASE, the Cochrane central register of controlled trials (CENTRAL), and Web of Science were searched from 1965 to July 2010. Supplemental searches included Internet resources, reference lists, and reports of arrhythmia experts. Three authors independently reviewed and extracted the data regarding baseline characteristics, ablation methodology, medical therapy, complications, VT recurrences, mortality, and study quality. RESULTS Five studies were included totaling 457 participants with structural heart disease. Adjunctive catheter ablation was performed in 58% of participants, whereas 42% received medical therapy alone for VT. Complications of catheter ablation included death (1%), stroke (1%), cardiac perforation (1%), and complete heart block (1.6%). Using a random- effects model, a statistically significant 35% reduction in the number of patients with VT recurrence was noted with adjunctive catheter ablation (P < .001). There was no statistically significant difference in mortality. CONCLUSIONS Catheter ablation as an adjunct to medical therapy reduces VT recurrences in patients with structural heart disease and has no impact on mortality.

Keywords: Amiodarone, Analysis, Arrhythmia, Arrhythmias, Authors, Catheter Ablation, Cochrane, Complications, Controlled Studies, Disease, Embase, Failure, Impact, Implantable Cardioverter-Defibrillator, Internet, Medical, Medical Therapy, Medline, Meta Analysis, Meta-Analysis, Methodology, Model, Mortality, Multicenter, Myocardial-Infarction, Pooled Analysis, Prophylactic Implantation, Randomized Controlled-Trial, Recurrence, Relative Risk, Risk, Science, Shocks, Single-Center, Stroke, Therapy, Treatment, Ventricular Tachycardia, Web of Science

# Title: Heavy Metals in the Aquatic Environment an International Conference

Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig

Reimers, R.S., Krenkel, P.A., Eagle, M. and Tragitt, G. (1975), Sorption phenomenon in the organics of bottom sediments. in *Heavy Metals in the Aquatic Environment an International Conference*, (Edited by Krenkel, P.A.), Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig, 117-129.

Miettinen, J.K. (1975), The accumulation and excretion of heavy metals in organisms. in *Heavy Metals in the Aquatic Environment*, (Edited by Krenkel, P.A.), Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig, 155-162.

Rolfe, G.L. and Jennett, J.C. (1975), Environmental lead distribution in relation to automobile and mine and smelter sources. in *Heavy Metals in the Aquatic Environment an International Conference*, (Edited by Krenkel, P.A.), Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig, 231-241.

Koirtyohann, S.P., Wixson, B.G. and Edwards, H.W. (1975), Environmental lead distribution in relation to automobile and mine and smelter sources (G.L. Rolfe and J.C. Jennett). in *Heavy Metals in the Aquatic Environment an International Conference*, (Edited by Krenkel, P.A.), Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig, 243-246.

Patterson, J.W. and Minear, R.A. (1975), Physical-chemical methods of heavy metals removal. in *Heavy Metals in the Aquatic Environment an International Conference*, (Edited by Krenkel, P.A.), Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig, 261-272.

Weeks, J.D. (1975), Physical-chemical methods of heavy metals removal (Patterson, J.W. and Minear, R.A.). in *Heavy Metals in the Aquatic Environment an International Conference*, (Edited by Krenkel, P.A.), Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig, 273-276.

Adams, Jr., C.E., Eckenfelder, Jr., W.W. and Goodman, B.L. (1975), The effects and removal of heavy metals in biologycal treatment. in *Heavy Metals in the Aquatic Environment an International Conference*, (Edited by Krenkel, P.A.), Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig, 277-292.

Barth, E.F. (1975), The effects removal of heavy metals in biological treatment (Adams, C. *et al.*). in *Heavy Metals in the Aquatic Environment an International Conference*, (Edited by Krenkel, P.A.), Pergamon Press, Oxford, New York, Toronto, Sydney and Braunschweig, 293-297.

# Title: Heavy Metals in the Environment

[Heavy Metals in the Environment](http://books.google.com/books?id=9Vqzv-j41KUC&pg=PT13&dq=yuh-shan+ho&hl=zh-TW#v=onepage&q=yuh-shan%20ho&f=false)

[2009\Heavy Metals in the Environment Index.pdf](2009/Heavy%20Metals%20in%20the%20Environment%20Index.pdf)

Taylor and Francis & CRC Press, New York

? Ho, Y.S. and El-Khaiary, M.I. (2009), Metal research trends in environmental field. in *Heavy Metals in the Environment*, (Edited by Wang, L.K., Chen, J.P., Hung, Y.T. and Shammas, N.K.), Taylor and Francis & CRC Press, New York, 1-12.

Full Text: [2009\Hea Met Env, Ho.pdf](2009/Hea%20Met%20Env,%20Ho.pdf)

# Title: Heavy Metals in Natural Waters Applied Monitoring and Impact Assessment

Springer-Verlag, New York, Berlin, Heidelberg, Tokyo

Moore, J.W. and Ramamoorthy, S. (1984), *Heavy Metals in Natural Waters Applied Monitoring and Impact Assessment*, Springer-Verlag, New York, Berlin, Heidelberg, Tokyo.

# Title: Helgoland Marine Research

Full Journal Title: [Helgoland Marine Research](http://www.springerlink.com/content/1438-387x/)

ISO Abbreviated Title:

JCR Abbreviated Title:

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Language:

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Subject Categories:

: Impact Factor

? Spivak, E.D. (2010), The crab *Neohelice* (=*Chasmagnathus*) *granulata*: An emergent animal model from emergent countries. *Helgoland Marine Research*, **64** (3), 149-154.

Full Text: [2010\Hel Mar Res64, 149.pdf](2010/Hel%20Mar%20Res64,%20149.pdf)

Abstract: Neohelice granulata (previously known as Chasmagnathus granulata and C. granulatus) is a burrowing semiterrestrial crab found in the intertidal zone of estuaries, salt marshes and mangroves of the South-western Atlantic Ocean. Beginning in the late 1989s, an explosion of publications appeared in international journals dealing with its ecology, physiology, toxicology and behavior. A bibliometric analysis using the Scopus database allowed detecting 309 papers that deal with this species during the period 1986-2009. The number of papers per year increased continuously, reaching a mean annual value of 22.6 during the last 5 years; a great majority of them were authored by researchers from Argentina and Brazil. Neohelice granulata has become now one of the most studied crab species, after Carcinus maenas, Callinectes sapidus, Scylla serrata and Cancer pagurus and C. magister, and it can be considered as an emergent animal model for biochemical, physiological and ecological research.

Keywords: America, Argentina, Bibliometric, Bibliometric Analysis, Brasil, Coastal, Complex, Crab, Crustacea, Dispersion, Ecology, Emergent Animal Model, Larval, Marshes, Research, Southwest Atlantic, Waters

# Title: Helicobacter

Full Journal Title: [Helicobacter](http://www.blackwell-synergy.com/loi/hel), [Helicobacter](http://www3.interscience.wiley.com/journal/118536176/home)

ISO Abbreviated Title: Helicobacter

JCR Abbreviated Title: Helicobacter

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Hveem, K. and Krüger, Ø. (2003), Epidemiology & transmission. *Helicobacter*, **8** (4), 385-397.

Full Text: [2003\Helicobacter8, 385.pdf](2003/Helicobacter8,%20385.pdf)

Abstract: Background. This study is part of a large Norwegian health survey (HUNT) conducted during 1995-97 where 66, 433 persons aged 20+ years residing in the county attended. The prevalence of *Helicobacter pylori* (*H. pylori*) infection and transmission were investigated.

Methods. *H. pylori*-antibody titre was measured in 10,029 subjects (M 4609, F 5420). Transmission was evaluated in 732 families.

Results. The prevalence of H. pylori was 32.5% in men and 29.5% in women (p = 0.01) increasing with age (< 10% below 30 years, 60% above 70 years). Within the 732 couples, 44.6% males and 38% females were H. pylori+, respectively. The prevalence of H. pylori in offspring is presented in the tables below.

Conclusions. H. pylori infections increases with age and are more prevalent in males. The prevalence of H. pylori in offspring is dependent on the H. pylori status of the parents, whether the child is a single child or a sibling and on the H. pylori status of the other siblings.

Notes: highly cited

? Megraud, F. (2007), Evolution of *Helicobacter pylori* research as observed through the workshops of the European helicobacter study group. *Helicobacter*, **12**, 1-5.

Full Text: [2007\Helicobacter12, 1.pdf](2007/Helicobacter12,%201.pdf)

Abstract: The European Helicobacter Study Group established a yearly workshop that has been held from 1988 to 2007. The analysis of the data from these workshops shows that 7246 abstracts were presented originating from 76 different countries. The distribution according to specific years follows a Gauss-type curve with a peak in the mid-1990s. The presenters were mainly from Europe, but an increasing number coming from non-European countries was observed throughout the years. The evolution of the topics selected also evolved but was relatively stable these last 10 years. Some landmarks have been highlighted. These data constitute an important source of information with regard to the evolution of Helicobacter pylori research over these 20 years.

Keywords: Abstract, Landmark, Research, Topic

? Zhao, F.J., Wang, J., Yang, Y.M., Wang, X.Y., Shi, R.H., Xu, Z.K., Huang, Z.H. and Zhang, G.X. (2008), Effect of CYP2C19 genetic polymorphisms on the efficacy of proton pump inhibitor-based triple therapy for helicobacter pylori eradication: A meta-analysis. *Helicobacter*, **13** (6), 532-541.

Full Text: 2008\Helicobacter13, 532.pdf

Abstract: CYP2C19 polymorphisms have been inconsistently reported to associate with the efficacy of proton pump inhibitor (PPI)-based triple therapies for eradicating Helicobacter pylori infection. The aim of this meta-analysis was to determine whether CYP2C19 polymorphism affect H. pylori eradication rates obtained with first-line PPI-based triple therapies. A systematic literature search was conducted up to July 2007 using MEDLINE, PUBMED, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL), ISI Web of Science, CNKI (Chinese), and Wanfang (Chinese) digital database. MeSH terms and keywords included proton pump inhibitor, omeprazole, lansoprazole, rabeprazole, pantoprazole, or esomeprazole, cytochromeP4502C19 or CYP2C19, and Helicobacter pylori or H. pylori. Twenty articles met the inclusion criteria, and were included in the meta-analysis by using Review Manager 4.2.8. Eradication rates were significantly different between poor metabolizers (PM) and heterozygous extensive metabolizers (HetEM) (odds ratio (OR) = 1.73, p = .002) and between PM and homozygous extensive metabolizers (HomEM) (OR = 2.79, p < .0001). Moreover, eradication rates were also significant difference between HetEM and HomEM (OR = 2.00, p < .0001). Triple omeprazole and lansoprazole therapies achieved higher H. pylori eradication rates in PM than in HomEM (OR = 4.28, p = .0005 for omeprazole and OR = 3.06, p = .001 for lansoprazole), and higher in HetEM than those in HomEM (OR = 3.22, p < .0001 for omeprazole and OR = 1.95, p = .040 for lansoprazole). Rabeprazole therapies had no significant effect on H. pylori eradication rates (between PM and HomEM, OR = 1.35, p = .610 and between HetEM and HomEM, OR = 1.57, p = .190). No significant difference in H. pylori eradication rates between PM and HetEM was observed in the three individual PPI therapies. The efficacy of omeprazole- and lansoprazole-based first-line triple therapies at the standard doses is dependent on CYP2C19 genotype status, which appears not to affect the efficacy of the regimens including rabeprazole.

Keywords: Amoxicillin, Clarithromycin Resistance, Cochrane, Cure Rates, CYP2C19, Efficacy, Eradication Rate, Gene Polymorphism, Genotype, Helicobacter Pylori, Impact, Infection, ISI, Literature, Meta-Analysis, Omeprazole Metabolism, Peptic-Ulcer, Polymorphism, Polymorphisms, Proton-Pump Inhibitor, Pubmed, Rabeprazole, Ratio, Regimen, Review, Science, Systematic, Web of Science

? Wu, C., Chen, X.A., Liu, J., Li, M.Y., Zhang, Z.Q. and Wang, Z.Q. (2011), Moxifloxacin-containing triple therapy versus bismuth-containing quadruple therapy for second-line treatment of helicobacter pylori infection: A meta-analysis. *Helicobacter*, **16** (2), 131-138.

Full Text: 2011\Helicobacter16, 131.pdf

Abstract: Background: Moxifloxacin-containing triple therapy has been suggested as an alternative second-line therapy for Helicobacter pylori infection. Aims: To systematically review the efficacy and tolerance of moxifloxacin-containing triple therapy in second-line H. pylori eradication, and to conduct a meta-analysis of studies comparing this regimen with bismuth-containing quadruple therapy. Materials and Methods: Electronic databases including MEDLINE, EMBASE, Cochrane controlled trials register, Web of Science, PUBMED, Chinese Biomedical Literature Database (updated to December 2010), and manual searches were conducted. A meta-analysis of all randomized controlled trials (RCTs) comparing moxifloxacin-containing triple therapy to bismuth-containing quadruple therapy in the second-line treatment of H. pylori infection was performed. Results: Seven RCTs including 787 patients were assessed. The meta-analysis showed that the eradication rate in the moxifloxacin group was significantly higher than that in the quadruple therapy group (74.9 vs 61.4%, OR 1.89, 95% CI: 1.38-2.58, p < .0001); besides, the rates of side effects and discontinuing therapy because of side effects in the moxifloxacin group were significantly lower than those in the quadruple therapy group (side effects: 10.1 vs 27.8%, OR 0.27, 95% CI: 0.18-0.41, p < .00001; discontinuing therapy because of side effects: 1.4 vs 8.2%, OR 0.18, 95% CI: 0.08-0.40, p < .0001). These results were constant in the sensitivity analyses. Conclusion: Moxifloxacin-containing triple regimen is more effective and better tolerated than the bismuth-containing quadruple therapy in the second-line treatment of H. pylori infection.

Keywords: Antibiotic-Resistance, Cochrane, Databases, Developing-Country, Efficacy, Eradication, Eradication Rate, Helicobacter Pylori, Infection, Lansoprazole, Management, Meta-Analysis, Methods, Moxifloxacin, Pubmed, Randomized Controlled Trials, Regimens, Review, Science, Therapy, Treatment, Web of Science

# Title: Helvetica Chimica Acta

Full Journal Title: Helvetica Chimica Acta

ISO Abbreviated Title: Helv. Chim. Acta

JCR Abbreviated Title: Helv Chim Acta

ISSN: 0018-019X

Issues/Year:

Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

: Impact Factor

? Milicevi, B. and McGregor, R. (1966), Zur thermodynamisch-phanomenologischen beschreibung der farbevorgange. I. Diskontinuierliches modellsystem. *Helvetica Chimica Acta*, **49** (4), 1302-??.

? McGregor, R. and Milicevi, B. (1966), Zur thermodynamisch-phanomenologischen beschreibung der farbevorgange. 2. Kontinuierliches modellsystem. *Helvetica Chimica Acta*, **49** (4),1319-??.

? Milicevi, B. and McGregor, R. (1966), Zur thermodynamisch-phanomenologischen beschreibung der farbevorgange. 3. Dimensionsanalyse der hydrodynamischen effekte. *Helvetica Chimica Acta*, **49** (7), 2098-??.

? Schmidt, E. and Siegenth, H. (1970), Diffusion kinetics in adsorption by 2 electrode method. *Helvetica Chimica Acta*, **53** (2), 321-??.

# Title: Hemijska Industrija

Full Journal Title: Hemijska Industrija

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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? Savić, J., Vasić, V. and Adnađević, B. (2007), Kinetic investigation of the immobilization of chromotropic acid derivatives onto anion exchange resin. *Hemijska Industrija*, **61** (1), 13-17.

Full Text: [2007\Hem Ind61, 13.pdf](2007/Hem%20Ind61,%2013.pdf)

Abstract: The adsorption kinetics of pyrazol- (PACA) and imidazol-azo-chromo-tropic acid (IACA) onto Dowex 1-X8 resin, as a function of the dye concentration and temperature were investigated at pH 4.5. The pseudo-first- and second-order kinetic models and intraparticle diffusion model were used to describe the obtained kinetic data. The adsorption rate constants were found to be in the order of magnitude 10-2 min-1 for all of the used kinetics models. The adsorption capacity increases with increasing initial dye concentration. The study of adsorption kinetics at different temperatures (in the range from 5 to 25°C) reveals an increase in the rate of adsorption and adsorption capacity with increasing temperature. The activation energy (in the case of PACA 16.6 kJ/mol, and for IACA 11.3 kJ/mol) was determined using the Arrhenius dependence. Electrostatic interactions between the dye and resin beads were shown to be the adsorption mechanism.

Keywords: Activated Carbon, Activation, Activation Energy, Adsorption, Adsorption Kinetics, Adsorption-Kinetics, Aqueous-Solutions, Azo-Dyes, Behavior, Capacity, Chromium, Diffusion, Dye, Equilibrium, Function, Immobilization, Intraparticle Diffusion, Intraparticle Diffusion Model, Investigation, Ion-Exchange Resin, Kinetic, Kinetic Models, Kinetics, Linked Chitosan Beads, Mechanism, Model, Models, pH, Reactive Dye, Spectrophotometric Detection, Temperature

? Alagumuthu, G. and Rajan, M. (2010), Kinetic and equilibrium studies on fluoride removal by Zirconium (IV)-impregnated groundnut shell carbon. *Hemijska Industrija*, **64** (4), 295-304.

Full Text: [2010\Hem Ind64, 295.pdf](2010/Hem%20Ind64,%20295.pdf)

Abstract: The carbonized ground nut shell (GNSC) was impregnated with zirconium oxychloride, and tested to determine its capacity and kinetics for fluoride adsorption from aqueous solutions. The analysis of the isotherm equilibrium data using the Langmuir, Freundlich and Redlich-Peterson equations by linear methods showed that the data fitted better with Freundlich model than the other two. Thermodynamic studies revealed that the spontaneous nature of fluoride adsorption with increase of entropy and an endothermic process. The kinetic data obtained for fluoride adsorption on zirconium impregnated ground nut shell carbon (ZIGNSC) obeyed the pseudo-second order equation. X-ray diffraction (XRD) studies confirmed the deposition of fluoride on material and Fourier transform infrared (FTIR) studies also showed the involvement of adsorbate on the adsorbent surface in the adsorption interaction. The ZIGNSC provides a cost effective material to the defluoridation problem in the developing countries by its great potential application in the fluoride removal from water.

Keywords: Adsorbent, Adsorption, Adsorption, Analysis, Application, Aqueous Solutions, Aqueous-Solution, Arachis Hypogia, Capacity, Carbon, Cost, Cost-Effective, Data, Defluoridation, Defluoridation, Deposition, Developing, Developing Countries, Drinking-Water, Endothermic, Entropy, Equilibrium, Fluoride, Fluoride Adsorption, Fluoride Removal, Fluorosis, Freundlich, Freundlich Model, FTIR, Interaction, Ions, Isotherm, Kinetic, Kinetics, Langmuir, Methods, Model, Montmorillonite, Potential, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Redlich-Peterson, Removal, Solutions, Sorption, Surface, Thermodynamic, Waste-Water, Water, X-Ray, X-Ray Diffraction, XRD, Zirconium, Zirconium Oxychloride

? Alagumuthu, G., Veeraputhiran, V. and Venkataraman, R. (2011), Fluoride sorption using *Cynodon dactylon*-based activated carbon. *Hemijska Industrija*, **65** (1), 23-35.

Full Text: [2011\Hem Ind65, 23.pdf](2011/Hem%20Ind65,%2023.pdf)

Abstract: This study deals with the application of Cynodon dactylon-based thermally activated carbon for fluoride toxicity. The batch adsorption technique was followed at neutral pH as a function of contact tune, adsorbent dose, adsorbate concentration, temperature and the effect of co-anions. The data indicate that the prepared adsorbent surface sites are heterogeneous in nature and that fits into a heterogeneous site-binding model. The present system followed the Redlich-Peterson isotherm as well as the Langmuir adsorption isotherm model. Lagergren pseudo-first-order, pseudo-second-order, infra particle diffusion and Elovich kinetics were modeled to describe the adsorption rate of fluoride, and determined as this scheme followed pseudo-second-order kinetics. The calculated enthalpy change, ΔHº, and entropy change, ΔSº, for the adsorption process were 8.725 kJ/mol and 0.033 J/mol K, respectively, and showed endothermic experience. Instrumental analysts of XRD, FTIR and SEM gives an idea about the fluoride binding ability of adsorbent.

Keywords: Activated Carbon, Adsorption, Adsorption, Adsorption Isotherm, Aqueous-Solution, Carbon, Cynodon Dactylon, Equilibrium, Fluoride, Fluorides, FTIR, Isotherm, Isotherms, Kinetic Models, Kinetics, Langmuir, Nanotubes, pH, Red Mud, Removal, Shell Carbon, Solids, Sorption, Toxicity, Water

? Momčilović, M.Z., Purenović, M.M., Miljković, M.N., Bojić, A.L. and Ranđelović, M.S. (2011), Adsorption of cationic dye Methylene blue onto activated carbon obtained from horse chestnut kernel. *Hemijska Industrija*, **65** (2), 123-129.

Full Text: [2011\Hem Ind65, 123.pdf](2011/Hem%20Ind65,%20123.pdf)

Abstract: Horse chestnut kernel was used as the precursor for the preparation of powdered activated carbon using phosphoric acid as the activating agent. Batch adsorption experiments for the adsorption of cationic dye methylene blue from aqueous solutions were carried out using the obtained carbon as adsorbent. Equilibrium and kinetic experiments were conducted. The equilibrium data were fitted with the Langmuir, Freundlich and Temkin theoretical isotherm models. The best results was obtained in the case of the Langmuir model, which indicates that monolayer adsorption occurs on finite number of the active adsorption sites on the carbon surface. The kinetic data were fitted with pseudo-first, pseudo-second, Elovich and interparticle diffusion models. The pseudo-second order model and Elovich model showed the best agreement with the kinetic data. The increasing of the solution pH led to a higher uptake of methylene blue due to the fact that competitive adsorption of methylene blue cation and proton exists in acidic solutions. The adsorption capacity for methylene blue in equilibrium study was significant (168.93 mg g-1). Comparison of the adsorption capacities of methylene blue onto activated carbons derived from various alternative precursors proves chestnut kernel to be efficient and low-cost material which could be substantially deployed in the future.

Keywords: Activated Carbon, Active, Adsorbent, Adsorption, Batch, Batch Adsorption, Carbon, Chemical Activation, Chestnut Kernel, Diffusion, Dye, Equilibrium, Equilibrium Study, Freundlich, H3PO4, Isotherm, Kinetic, Kinetics, Langmuir, Methylene Blue, pH, Phosphoric Acid, Phosphoric-Acid, Powdered Activated Carbon, Removal, Stones, Surface, Uptake, Waste

# Title: Hepatobiliary & Pancreatic Diseases International

Full Journal Title: Hepatobiliary & Pancreatic Diseases International

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chen, H., Zhang, Y., Zhou, L., Xie, H.Y. and Zheng, S.S. (2008), Role of basic studies in expanding the donor pool for liver transplantation. *Hepatobiliary & Pancreatic Diseases International*, **7** (6), 571-580.

Abstract: BACKGROUND: Liver transplantation is an effective treatment for end-stage liver disease, but a huge gap remains between the number of people who need a liver transplant and the number of organs available. In order to maximize donor organ access for adult and pediatric recipients, novel surgical and liver replacement procedures have evolved. Newer surgical techniques include split cadaveric liver transplantation and living donor liver transplantation (LDLT). With marginal and abnormal donor livers, despite tremendous advances in surgical technology, individual surgical procedure can not be completely brought into play unless effective measurements and basal studies are undertaken. DATA SOURCES: A literature search of MEDLINE and the Web of Science database using “liver transplantation” and “expanding donor pool” was conducted and research articles were reviewed. RESULTS: Therapies directed toward scavenging O(2-), inhibiting nicotinamide adenine dinucleotide phosphate oxidase, and/or immuno-neutralizing tumor necrosis factor-alpha may prove useful in limiting the liver injury induced by surgical procedures such as split liver transplantation or LDLT. Improved donor organ perfusion and preservation methods, modulation of inflammatory cytokines, energy status enhancement, microcirculation amelioration, and antioxidant usage can improve non-heart beating donor liver transplantation. Effective measures have been taken to improve the local conditions of donor cells with steatosis, including usage of fat-derived hormone and inflammatory mediators, ischemic preconditioning, depletion of Kupffer cells, and cytokine antibody and gene therapy. Double-filtration plasmapheresis can effectively reduce HCV viremia and prevent HCV recurrence in patient with high HCV RNA levels after LDLT. CONCLUSIONS: Shortage of grafts and poor function of marginal and abnormal donor grafts put many patients at risk of death in waiting for liver transplantation. Advances in surgical technology, combined with improvement and breakthroughs in basic studies hold a promise in expanding the liver donor pool.

Keywords: Adult, Cold Preservation, Disease, Expanding Donor Pool, Extracorporeal Membrane-Oxygenation, Fatty Livers, Graft Injury, HCV, Heart-Beating Donors, Hepatitis-C, Induced, Injury, Ischemia-Reperfusion Injury, Ischemic Preconditioning, Literature, Liver Transplantation, Living Donor Liver Transplantation, Machine Perfusion, Medline, Non-Heart Beating Donor, Pediatric, Perfusion, Rat Livers, Recurrence, Research, Risk, Rna, Science, Split Liver Transplantation, Surgical, Therapy, Treatment, Warm Ischemia, Web of Science

? Wang, G.J., Li, Y.A., Zhou, Z.G., Wang, C. and Meng, W.J. (2010), Integrity of the pancreatic duct-acinar system in the pathogenesis of acute pancreatitis. *Hepatobiliary & Pancreatic Diseases International*, **9** (3), 242-247.

Abstract: BACKGROUND: Acute pancreatitis is an acute inflammatory process of the pancreas that frequently involves peripancreatic tissues and at times remote organ systems. For a long time, the etiology and pathogenesis of acute pancreatitis has been intensively investigated worldwide, but the pathogenetic theories are controversial. The integrity of the pancreatic duct-acinar system might play an important role in the pathogenesis of this disease. DATA SOURCES: Web of Science and PUBMED databases were searched for published studies (between January 1966 and June 2009) to identify relevant articles using the keywords “acinar hyperstimulation”, “pathogenesis”, “acute pancreatitis”, “pancreatic duct-acinar system”, and “pancreatic duct pressure”. Most of the relevant articles were reviewed. RESULTS: From critical reading of the relevant articles, we found that the underlying mechanisms involved in the pathogenesis of acute pancreatitis are still under debate and ill-understood. On the basis of the relevant studies, we propose a hypothesis for the pathogenesis of acute pancreatitis, in which the integrity of the pancreatic duct-acinar system plays an essential role in the onset and progression of various forms of the disease. CONCLUSIONS: In our hypothesis, pancreatic duct obstruction and hyperstimulation of the exocrine pancreas are preconditions for the onset of acute pancreatitis; under the common conditions of pancreatic duct obstruction and acinar hyperstimulation, acute pancreatitis arises and develops. This may be an important common pathophysiological mechanism causing various forms of acute pancreatitis. (Hepntobiliary Pancreat Dis Int 2010; 9: 242-247).

Keywords: Acinar Hyperstimulation, Acute Pancreatitis, Alcoholic Pancreatitis, Animal-Model, Cerulein, Critical Reading, Databases, Disease, Etiology, Experimental-Model, Gallstone Pancreatitis, L-Arginine, Mechanism, Mouse Model, Obstruction, Pancreatic Duct Pressure, Pancreatic Duct-Acinar System, Pathogenesis, Post-ERCP Pancreatitis, Pubmed, Rat, Science, Theories, Web of Science

? Yan, S., Jin, L.M., Liu, Y.X., Zhou, L., Xie, H.Y. and Zheng, S.S. (2010), Outcomes and mechanisms of ischemic preconditioning in liver transplantation. *Hepatobiliary & Pancreatic Diseases International*, **9** (4), 346-354.

Abstract: BACKGROUND: Liver transplantation is so far the most effective therapeutic modality for end-stage liver diseases, but ischemia/reperfusion (I/R) injury represents a critical barrier to liver transplantation. Primary graft dysfunction and small-for-size syndrome are closely associated with I/R injury. Ischemic preconditioning (IPC) is defined as a brief period of liver ischemia followed by reperfusion, and has demonstrated protections against a prolonged I/R injury and improved the capacity of regeneration. The article aimed to review IPC literatures for the understanding of the effects of IPC on I/R injury involving in the procurement of donor liver and protective mechanisms. DATA SOURCES: A literature search of MEDLINE and Web of Science databases using “liver transplantation”, “liver regeneration”, “hepatectomy”, “ischemia/reperfusion” and “ischemic preconditioning” was performed, and then a large amount of related data was collected. RESULTS: The literature search provided a huge amount of evidence for the protective effects of IPC on I/R injury in liver transplantation, including reduction of blood loss in hepatectomy, intraoperative hemodynamic stability and its significant role in liver regeneration. The mechanism involves in balancing inflammatory cytokines, enhancing energy status and mitigating microcirculatory disturbance. CONCLUSION: IPC plays an essential role in hepatectomy before and after harvest of living donor liver and implantation of liver graft.

Keywords: Blood, Damaged Rat Livers, Databases, Donor Liver, Enhances Regenerative Capacity, For-Size Syndrome, Hepatectomy, Hepatic Ischemia, Reperfusion Injury, Injury, Ischemia, Ischemia, Reperfusion Injury, Ischemic Preconditioning, Literature, Liver Regeneration, Liver Transplantation, Mechanism, Medline, Nf-Kappa-B, Nitric-Oxide, Outcomes, Primary, Randomized Clinical-Trial, Reperfusion Injury, Review, Right-Lobe Grafts, Science, Web of Science

? Deng, Y.L., Cheng, N.S., Lin, Y.X., Zhou, R.X., Yang, C., Jin, Y.W. and Xiong, X.Z. (2011), Relationship between pancreaticobiliary maljunction and gallbladder carcinoma: A meta-analysis. *Hepatobiliary & Pancreatic Diseases International*, **10** (6), 570-580.

Full Text: 2011\Hep Pan Dis Int10, 570.pdf

Abstract: BACKGROUND: Reports on the relationship between pancreaticobiliary maljunction (PBM) and gallbladder carcinoma (GBC) are conflicting. The frequency of PBM in GBC patients and the clinical features of GBC patients with PBM vary in different studies. DATA SOURCES: English-language articles describing the association between PBM and GBC were searched in the PubMed and Web of Science databases. Nine case-control studies fulfilled the inclusion criteria and addressed the relevant clinical questions of this analysis. Data were extracted independently by two reviewers using a predefined spreadsheet. RESULTS: The incidence of PBM was higher in GBC patients than in controls (10.60% vs 1.76%, OR: 7.41, 95% CI: 5.03 to 10.87, P < 0.00001). The proportion of female patients with PBM was 1.96-fold higher than in GBC patients without PBM (80.5% vs 62.9%, OR: 1.96, 95% CI: 1.09 to 3.52, P=0.12). GBC patients with PBM were 10 years younger than those without PBM (SMD: -9.90, 95% CI: -11.70 to -8.10, P < 0.00001). And a difference in the incidence of associated gallstone was found between GBC patients with and without PBM (10.8% vs 54.3%, OR: 0.09, 95% CI: 0.05 to 0.17, P < 0.00001). Among the GBC patients with PBM, associated congenital dilatation of the common bile duct was present with a higher incidence ranging from 52.2% to 85.7%, and 70.0%-85.7% of them belonged to the P-C type of PBM (the main pancreatic duct enters the common bile duct). No substantial heterogeneity was found and no evidence of publication bias was observed. CONCLUSIONS: PBM is a high-risk factor for developing GBC, especially the P-C type of PBM without congenital dilatation of the common bile duct. To prevent GBC, laparoscopic cholecystectomy is highly recommended for PBM patients without congenital dilatation of the common bile duct, especially relatively young female patients without gallstones.

Keywords: Analysis, Anomalous Arrangement, Association, Bias, Bile-Duct Dilatation, Biliary-Tract, Cancer, Carcinogenesis, Carcinoma, Case-Control, Case-Control Studies, Congenital Choledochal Cyst, Congenital Dilatation Of The Common Bile Duct, Databases, Frequency, Gallbladder Carcinoma, Incidence, Junction, K-Ras, Meta Analysis, Meta-Analysis, Pancreaticobiliary Maljunction, Patients, Publication, Publication Bias, Pubmed, Reports, Science, Union, Web of Science

# Title: Hepato-Gastroenterology

Full Journal Title: Hepato-Gastroenterology

ISO Abbreviated Title: Hepato-Gastroenterol.

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ISSN: 0172-6390

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Journal Country/Territory: Germany

Language: English

Publisher: H G E Update Medical Publ Ltd.

Publisher Address: PO Box 17160, Athens GR-10024, Greece

Subject Categories:

Gastroenterology & Hepatology Surgery

? Conio, M., Caroli-Bosc, F., Demarquay, J.F., Sorbi, D., Maes, B., Delmont, J. and Dumas, R. (1999), Self-expanding metal stents in the palliation of neoplasms of the cervical esophagus. *Hepato-Gastroenterology*, **46** (25), 272-277.

Full Text: 1999\Hep-Gas46, 272.pdf

Abstract: BACKGROUND/AIMS: Self-expanding metal stents (SEMS) represent a major advancement in the palliative treatment of dysphagia caused by neoplasms of the esophagus. Malignant cervical stenoses are a challenge for palliative techniques, due to their close relationship with the cricopharynx.

METHODOLOGY: Six patients with a malignant stricture of the upper esophagus, within 2cm of the cricopharyngeal muscle, were treated with a self-expanding metal stent. Al patients had a circumferential squamous cell carcinoma histologically proven. Patients were intubated under general anesthesia, and the procedure was carried out under simultaneous endoscopic and fluoroscopic control.

RESULTS: All patients had a remarkable improvement of dysphagia and none of them reported a foreign body sensation. In 3 patients, an insufficient expansion of the stent, detected 24 hours later, required a balloon dilation in two of them, whereas, for the third patient, it was necessary to introduce a second stent. Neoplastic in-and overgrowth occurred in 4 (67%) patients after 1, 2, 4 and 8 months, respectively. These complications were managed by placing a second stent in 3 patients; in the fourth patient, a neoplastic involvement of the cricopharynx did not allow for an endoscopic examination. Improvement of dysphagia was observed only in the patient who received a covered Cook-Z stent. In the other 2 patients, a percutaneous endoscopic gastrostomy was performed. The only major complication occurred in the patient who received three metal stents, as he complained of severe cervical pain.

CONCLUSIONS: Our experience shows that uncovered self-expanding metal stents provide a good palliation in this subgroup of patients. Tumour ingrowth, overgrowth, and the progressive impairment of the swallowing mechanism due to a proximal submucosal infiltration remain complications difficult to solve.

Keywords: Esophageal Cancer, Metal Stents, Palliation, Photodynamic Therapy, Yag Laser, Obstruction, Carcinoma, Cancer, Strictures, Stenosis, Trial

? Tang, D., Zhang, J.Q. and Wang, D.R. (2011), Long term results of pancreatectomy with portal-superior mesenteric vein resection for pancreatic carcinoma: A systematic review. *Hepato-Gastroenterology*, **58** (106), 623-631.

Full Text: 2011\Hep-Gas58, 623.pdf

Abstract: Background/Aims: Clinical benefit from pancreatectomy combined with portal vein/superior mesenteric resection in the pancreatic carcinoma with local venous invasion still remains controversial. The aim of this study was to review the overall outcome of the pancreatectomy combined with portal vein/superior mesenteric resection for pancreatic carcinoma with local venous invasion. Methodology: A systematic literature search (Medline, Embase, Cochrane Library, Biosis, Science Citation Index, Ovid Journals) was performed to identify all eligible articles from January 2000 to December 2009. The methodological quality of included studies on portal vein/superior mesenteric resection during pancreatectomy for pancreatic carcinoma was evaluated independently by 2 authors and 47 non-duplicated studies providing relevant data was found. Quantitative data on operation, perioperative results (blood loss, operative time, and length of hospital stay), mortality, morbidity, histopathology of resected specimens, adjuvant therapies, and overall outcome were extracted from included studies for systematic analysis. Results: The median operating time was 480 (140-1340) min, blood loss 1420 (50-14280) ml and the length of hospital stay 16 (4-123) days. Operative mortality and postoperative morbidity rates ranged from 0 to 14.3 % and 6 % to 67 % with a median of 3.5 % and 33 %, respectively. Median survival was 15 months and ranged from 1.6 to 250 months, and 1-, 2-, 3- and 5-year survival rates ranged from 28.5 to 92, 6.7 to 81.1, 0 to 60.3 and 0 to 24 % with a media of 56.6, 31.5, 17 and 12 %, respectively. Specimen histopathology confirmed venous invasion, perineural invasion and lymphnodal involvement in 66.6,53 and 73 %, respectively. Conclusions: In properly selected patients, pancreatectomy combined with portal vein/superior mesenteric resection is a feasible surgical procedure with a survival benefit for pancreatic carcinoma, and the systemic chemotherapy is indispensable as the common events of perineural invasion and lymphnodal involvement of the pancreatic carcinoma with local venous invasion.

Keywords: Adenocarcinoma, Authors, Cancer Surgery, Citation, Head Carcinoma, Involvement, Literature, Methodology, Pancreatectomy, Pancreatic Carcinoma, Pancreaticoduodenectomy, Portal Vein, Superior Mesenteric Vein, Reconstruction, Review, Science Citation Index, Surgical Resection, Survival, Vascular Resection, Venous Resection, Venous Resection

# Title: Hepatology Research

Full Journal Title: Hepatology Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Dahl, E., Rumessen, J. and Gluud, L.L. (2011), Systematic review with meta-analyses of studies on the association between cirrhosis and liver metastases. *Hepatology Research*, **41** (7), 618-625.

Abstract: The hemodynamic, cellular and metabolic changes seen in patients with cirrhosis may reduce the risk of liver metastases. The aim of this case-control is to compare the risk of liver metastases from extrahepatic malignant diseases among patients with or without cirrhosis. Electronic searches (MEDLINE, EMBASE, and Web of Science) and manual searches were combined (October 2010) to identify observational studies on patients with malignant disease reporting the risk of liver metastases among cases (with cirrhosis) and controls (without liver disease). Meta-analysis was performed using random effects models due to an expected clinical heterogeneity. Sixteen studies were included. Evidence of liver metastases was diagnosed in 22% of cases and 38% of controls based on autopsies (n = 14 studies) or laparoscopy (n = 2 studies). Random effects meta-analysis suggested that patients with cirrhosis had a lower risk of liver metastases (relative risk = 0.53; 95% confidence interval = 0.42-0.66). The conclusions were confirmed in sensitivity and subgroup analyses accounting for the year of publication, matching for age, sex and location of tumors (within the portal vein). No statistical evidence of bias was identified and the analyses were confirmed when adjusting for multiple testing. The present review suggests that cirrhosis reduces the risk of liver metastases. However, additional evidence from prospective studies adjusting for confounding factors is still needed.

Keywords: Autopsy, Bias, Cancer, Carcinoma, Cirrhosis, Colorectal-Cancer Metastasis, Confounding, Disease, Hepatic Metastases, Laparoscopy, Liver Metastases, Meta Analysis, Meta-Analysis, Multiple Testing, Observational Studies, Prospective Studies, Publication, Rarity, Relative Risk, Review, Risk, Science, Statistical, Systematic, Systematic Review, Web of Science

# Title: Herald of the Russian Academy of Sciences

Full Journal Title: [Herald of the Russian Academy of Sczziences](http://www.springerlink.com/content/119879/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1019-3316

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sverdlov, E.D. (2006), Citation mirages - Bibliometric evaluation of the significance of individual authors’ publications. *Herald of the Russian Academy of Sciences*, **76** (6), 530-535.

Full Text: [2006\Her Rus Aca Sci76, 530.pdf](2006/Her%20Rus%20Aca%20Sci76,%20530.pdf)

Abstract: An opinion is advanced in the article below that any bibliometric data, including individual article citations, as an independent measure of the scientific significance of a scientist’s works, cannot serve as a criterion of the efficiency of these studies or the value of these publications. Scientists across the world have long been questioning the relevancy of using these data. The majority of prominent scientists either express well-founded doubts that it is authentic to use them as an independent criterion or reject them altogether. Although bibliometric data are undoubtedly valuable as an auxiliary evaluation means, they cannot substitute peer reviews based on the analysis of article contents, its contribution to the field in question, and the contribution of the author under review to the subject matter presented in this publication. The author is of opinion that bibliometric data should be an obligatory but not decisive component in the complex system of assessing the creative potential of scientists and the significance of their works.

Keywords: Analysis, Bibliometric, Citations, Complex, Efficiency, Evaluation, Matter, Publication, Publications, Review, Reviews

? Zibareva, I.V., Pislyakov, V.V., Teplova, T.N. and Nefedov, O.M. (2008), Bibliometric analysis of the journal *Uspekhi Khimii* (*Russian Chemical Reviews*). *Herald of the Russian Academy of Sciences*, **78** (3), 247-256.

Full Text: [2008\Her Rus Aca Sci78, 247.pdf](2008/Her%20Rus%20Aca%20Sci78,%20247.pdf)

Abstract: Over the past few decades, quantitative methods of evaluating scientific work, including the citation index of research publications, have been finding expanding applications. The citation index underlies not only the evaluation of the efficiency of individual scientists but also the rating of scientific editions. The authors share their experience in bibliometric research based on the data of the science and technology network STN International.

Keywords: Analysis, Angewandte-Chemie, Authors, Bibliometric, Bibliometric Analysis, Bibliometric Research, Bradfords Law, Citation, Citation Data, Data, Efficiency, Evaluation, Experience, Impact, Index, Journal, Jun, Methods, Network, Publications, Quantitative Methods, Rating, Research, Research Publications, Russian, Science, Science and Technology, Technology, Work

? Markusova, V.A., Ivanov, V.V. and Varshavskii, A.E. (2009), Bibliometric indicators of Russian science and of the *Russian Academy of Sciences* (1997-2007). *Herald of the Russian Academy of Sciences*, **79** (3), 197-204.

Full Text: [2009\Her Rus Aca Sci79, 197.pdf](2009/Her%20Rus%20Aca%20Sci79,%20197.pdf)

Abstract: The authors of the article below regularly inform our readers about the dynamics of bibliometric indicators of Russian researchers’ scientific productivity, compared to that of their foreign colleagues. Statistical data are presented, the unbiasedness of different foreign databases is considered, and reasons why the contribution of Russian science to world science is understated are explained; the conclusion is made that it is necessary to develop our own database of scientific publications and their citation.

Keywords: Bibliometric Indicators, Indicators, Publications, Science, Sciences

? Terekhov, A.I. (2009), Nanotechnologies and nanomaterials in the modern world. *Herald of the Russian Academy of Sciences*, **79** (5), 412-419.

Full Text: [2009\Her Rus Aca Sci79, 412.pdf](2009/Her%20Rus%20Aca%20Sci79,%20412.pdf)

Abstract: Quantitative, including bibliometric, indicators are widely used today in scientific and technological decision making to monitor topical research areas. The geographic structure of nanoscience, cooperation patterns, research dynamics, and potential areas of commercialization of technological innovations, as well as the positions of Russian scientists in these processes, are analyzed on the basis of bibliometric and patent indicators.

Keywords: Carbon Nanotubes

? Shaikevich, I.V.M. (2010), Scientific Collaboration between Russia and the EU countries: A bibliometric analysis. *Herald of the Russian Academy of Sciences*, **80** (1), 57-62

Full Text: [2010\Her Rus Aca Sci80, 57.pdf](2010/Her%20Rus%20Aca%20Sci80,%2057.pdf)

Keywords: Bibliometric, Bibliometric Analysis, Collaboration, EU

? Motroshilova, N.V. (2011), Faulty segments of scientometrics. *Herald of the Russian Academy of Sciences*, **81** (1), 51-61.

Full Text: [2011\Her Rus Aca Sci81, 51.pdf](2011/Her%20Rus%20Aca%20Sci81,%2051.pdf)

Abstract: Just like any professional community, scientists are interested in an unbiased and, as far as possible, accurate assessment of their activity. Scientometric methods, which underlie the attempts to make qualitative conclusions about the achievements of individual scientists, research teams, and countries, have been becoming increasingly popular over the last several decades. The question whether results based on quantitative assessments are objective has been debated heatedly for a long time, including on the pages of our journal. The readers may familiarize themselves with another interested opinion and join the discussion.

Keywords: Assessment, Assessments, Community, Journal, Methods, Qualitative, Research, Scientometric, Scientometrics

? Yurevich, A.V. (2011), On the problem of assessing the contribution of Russian Social Sciences and Humanities to World Science. *Herald of the Russian Academy of Sciences*, **81** (4), 406-414.

Full Text: [2011\Her Rus Aca Sci81, 406.pdf](2011/Her%20Rus%20Aca%20Sci81,%20406.pdf)

Abstract: The problem of an unbiased assessment of scientific contribution and research results has been discussed more than once on the pages of our journal. Some authors continue to analyze thoroughly statistical figures from the Web of Science databases, while others (whose number is increasing) question not only the validity of conclusions based on these data but also the adequacy of the current approach to quantitative assessments of scientific productivity. In particular, the necessity to account not only for direct but also for indirect contribution of a country’s science to world science is discussed, and the fact that the welfare of a country is related to the skill to use scientific achievements rather than to achievements as such is stated in the article below.

Keywords: Assessment, Authors, Contribution, Databases, Journal, Productivity, Quantitative, Research, Science, Sciences, Scientific Productivity, Social, Social Sciences, Statistical, Validity, Web of Science

? Mokhnacheva, Y.V. and Kharybina, T.N. (2011), Research performance of RAS institutions and Russian universities: A comparative bibliometric analysis. *Herald of the Russian Academy of Sciences*, **81** (6), 569-574.

Full Text: [2011\Her Rus Aca Sci81, 569.pdf](2011/Her%20Rus%20Aca%20Sci81,%20569.pdf)

Abstract: Recent years have witnessed an ongoing debate in periodicals and on the Web about the quality and productivity of research carried out by different Russian organizations. Much criticism has been aimed at academic science, which is increasingly often opposed to university science. This article attempts to evaluate the contribution of the Russian Academy of Sciences (RAS) and Russian universities on the basis of a bibliometric analysis of the 2000-2009 publications included into the Thomson Reuters Web of Science and Essential Science Indicators.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Contribution, Essential Science Indicators, Indicators, Periodicals, Productivity, Publications, Quality, Research, Research Performance, Science, Sciences, Thomson Reuters, Universities, University, Web of Science

# Title: Hernia

Full Journal Title: Hernia

ISO Abbreviated Title: Hernia

JCR Abbreviated Title: Hernia

ISSN:

Issues/Year:

Journal Country/Territory:

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Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kulacoglu, H. and Oztuna, D. (2011), Growth and trends in publications about abdominal wall hernias and the impact of a specific journal on herniology: A bibliometric analysis. *Hernia*, **15** (6), 615-628.

Full Text: [2011\Hernia15, 615.pdf](2011/Hernia15,%20615.pdf)

Abstract: The aim of this systematic review was to determine the exact volume and growth pattern of articles on abdominal wall hernias, in particular the effect of the journal Hernia on publications about hernias. A PubMed search was performed for every year between 1965 and 2010, using the title words “inguinal hernia,” “incisional hernia,” and “umbilical hernia.” Then, two consecutive 10-year periods were chosen for a systematic PubMed search, before and after 2001-the year in which Hernia began to be indexed in PubMed. The main keywords used were as follows: “inguinal hernia” “incisional hernia” “umbilical hernia” “mesh” “laparoscopic” and “experimental.” The number of all articles indexed in PubMed increased 1.6-fold between the periods 1991-2000 and 2001-2010. The number of articles with the title word “inguinal hernia” increased 1.7-fold, whereas the rises for incisional and umbilical hernias were more prominent: 3.9- and 2.6-fold. Article titles with the combined keywords “hernia and mesh” and “hernia and laparoscopic” increased 2.8- and 2.4-fold. The most striking combined search was for “umbilical hernia and mesh” with a 20.5-fold rise. The percentage of articles published in the journal Hernia among all articles in all 25 selected journals, including Hernia was 30% on average. Hernia, Surgical Endoscopy and the British Journal of Surgery were the leading journals for publications for inguinal hernia in the last decade. Growth in hernia papers is greater than the overall growth in PubMed. Articles on incisional hernia increased faster than did those on inguinal and umbilical hernias. The establishment and indexing of Hernia decreased the proportion of hernia publications in other journals. The core journals for herniology are Hernia, Surgical Endoscopy, and the British Journal of Surgery.

Keywords: Analysis, Article Titles, Articles, Bibliometric, Bibliometric Analysis, Cancer, General-Surgery, Growth, Growth Pattern, Hernia, Impact, Indexing, Journal, Journals, Medicine, Medline, Papers, Productivity, Publication, Publications, Pubmed, Randomized Controlled-Trials, Repair, Review, Sub-Specialization, Surgery, Surgical Subspecialization, Systematic, Systematic Review, Trends, United-States

# Title: High Level Radioactive Waste Managemnet-Proceeding Annual International Coference

? Laul, J.C., Rupert, M.C., Harris, M.J. and Duran, A. (1995), Adsorption study for uranium in rocky flats groundwater. *High Level Radioactive Waste Managemnet-Proceeding Annual International Coference*, **6th**, 231-233.

# Title: Higher Education

Full Journal Title: [Higher Education](http://www.springerlink.com/content/102901/?p=de1721714348430da6cce10a18c24685&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Pouris, A. (2007), The international performance of the South African academic institutions: A citation assessment. *Higher Education*, **54** (4), 501-509.

Full Text: [2007\Hig Edu54, 501.pdf](2007/Hig%20Edu54,%20501.pdf)

Abstract: This article reports the results of an investigation to identify the disciplinary strengths and the international standing of the higher education institutions in South Africa. Even though comparative assessments provide valuable information for research administrations, researchers and students such information is not available in South Africa currently. The Essential Science Indicators database of the Institute for Scientific Information is utilized for the investigation and six South African universities are identified to be included in the top 1% of the world’s institutions cited in the international scientific literature. The identified institutions are University of Cape Town, University of Pretoria, Orange Free State University, University of Witwatersrand, University of Natal and University of Stellenbosch. Analysis of the scientific disciplines in which the South African institutions meet the threshold requirements for inclusion in the database shows that the country has citation footprints in only nine of the 22 broad scientific disciplines. The article identifies the international standing of the South African universities in the various scientific disciplines, and elaborates on the consequences relevant to higher education and science and technology policy.

Keywords: Assessment, Citation, Citations, Evaluation, Higher Education, Rankings, Research, South Africa, Universities

? Abramo, G., D’Angelo, C.A. and Di Costa, F. (2009), Research collaboration and productivity: Is there correlation? *Higher Education*, **57** (2), 155-171.

Full Text: [2009\Hig Edu57, 155.pdf](2009/Hig%20Edu57,%20155.pdf)

Abstract: The incidence of extramural collaboration in academic research activities is increasing as a result of various factors. These factors include policy measures aimed at fostering partnership and networking among the various components of the research system, policies which are in turn justified by the idea that knowledge sharing could increase the effectiveness of the system. Over the last two decades, the scientific community has also stepped up activities to assess the actual impact of collaboration intensity on the performance of research systems. This study draws on a number of empirical analyses, with the intention of measuring the effects of extramural collaboration on research performance and, indirectly, verifying the legitimacy of policies that support this type of collaboration. The analysis focuses on the Italian academic research system. The aim of the work is to assess the level of correlation, at institutional level, between scientific productivity and collaboration intensity as a whole, both internationally and with private organizations. This will be carried out using a bibliometric type of approach, which equates collaboration with the co-authorship of scientific publications.

Keywords: Academic, Analyses, Analysis, Approach, Bibliometric, Bibliometrics, Co-Authorship, Coauthorship, Collaboration, Community, Correlation, Effectiveness, Effects, Empirical, Factors, Impact, Incidence, Institutional, Intention, Knowledge, Knowledge Sharing, Legitimacy, Networking, Organizations, Partnership, Performance, Policies, Policy, Policy Measures, Productivity, Publication Productivity, Publications, Research, Research Collaboration, Research Performance, Scientific Productivity, Scientific Publications, Scientists, Support, Systems, Universities, Universities, Work

? Hicks, D. (2009), Evolving regimes of multi-university research evaluation. *Higher Education*, **57** (4), 393-404.

Full Text: [2009\Hig Edu57, 393.pdf](2009/Hig%20Edu57,%20393.pdf)

Abstract: Since 1980, national university departmental ranking exercises have developed in several countries. This paper reviews exercises in the U.S., U.K. and Australia to assess the state-of-the-art and to identify common themes and trends. The findings are that the exercises are becoming more elaborate, even unwieldy, and that there is some retreat from complexity. There seems to be a movement towards bibliometric measures. The exercises also seem to be effective in enhancing university focus on research strategy.

Keywords: Australia, Bibliometric, Complexity, Composite Index, Developed, ERA, Evaluation, Exercises, Movement, National, NRC Ranking, Rae, Ranking, Rankings, Research, Research Evaluation, Reviews, RQF, Strategy, Trends, University

? Horta, H. (2009), Holding a post-doctoral position before becoming a faculty member: Does it bring benefits for the scholarly enterprise? *Higher Education*, **58** (5), 689-721.

Full Text: [2009\Hig Edu58, 689.pdf](2009/Hig%20Edu58,%20689.pdf)

Abstract: This article examines the effects that performing a post-doc early in the academic career have for the current scholarly practices of faculty members. Results show that performing a post-doc early in the academic career impacts positively the recent research output of academics, although not affecting the other faculty member’s scholarly activities, namely teaching. The results also show that academics that did a post-doc engage in more regular information exchange dynamics with international peers than their colleagues that did not. This is particularly evident for the younger generations of scholars and for those who spent the post-doctoral period abroad. It is concluded that the post-doctoral period not only fosters a greater production of scientific outputs later in the academic career, but also leads to a greater integration into international scholarly communities. These benefits potentiate former post-docs to become key players in any scientific or higher education system.

Keywords: Post-Doctoral Period, Scholarly Production, Information Exchange, Internationalization of Academic Activities, Locality

? East, J. (2010), Judging plagiarism: A problem of morality and convention. *Higher Education*, **59** (1), 69-83.

Full Text: [2010\Hig Edu59, 69.pdf](2010/Hig%20Edu59,%2069.pdf)

Abstract: This paper considers the problem of plagiarism as an issue of morality. Outrage about student plagiarism in universities positions it as dishonesty and a transgression of standards. Despite this, there has been little work analysing the implications of positioning plagiarism as a moral matter in the making of judgments about plagiarism and academic dishonesty. This paper sets the scene by reviewing research about the characteristics of students who cheat and analysing student and lecturer differences. It then discusses perspectives from moral behaviour, moral philosophy and moral reasoning. The paper concludes that emotion and reason are brought to moral judgments, and so makes a case for those who are making judgments about plagiarism to reflect on whether they are faced with a matter of morality or convention. Greater awareness of the domains of convention and morality, the issues of justice and care, the roles of emotion and reason and what is involved in making judgments, will open ways of understanding reactions to plagiarism so that better ways to deal with accusations and make judgments can be developed.

Keywords: Academic Dishonesty, Convention and Morality, Decision-Making, Judgment, Justice and Care, Lecturer Interests, Moral Judgments, Plagiarism, Research, Standards, Students

? Grcar, J.F. (2011), Mathematics turned inside out: The intensive faculty versus the extensive faculty. *Higher Education*, **61** (6), 693-720.

Full Text: [2011\Hig Edu61, 693.pdf](2011/Hig%20Edu61,%20693.pdf)

Abstract: Research universities in the United States have larger mathematics faculties outside their mathematics departments than inside. Members of this “extensive” faculty conduct most mathematics research, their interests are the most heavily published areas of mathematics, and they teach this mathematics in upper division courses independent of mathematics departments. The existence of this de facto faculty challenges the pertinence of institutional and national policies for higher education in mathematics, and of philosophical and sociological studies of mathematics that are limited to mathematics departments alone.

Keywords: Bibliometrics, Education, Emergence, Higher Education, Mathematics, Policies, Research, Research University, Science, Sociology of Science, Statistics

? Abramo, G., D’Angelo, C.A. and Di Costa, F. (2011), University-industry research collaboration: A model to assess university capability. *Higher Education*, **62** (2), 163-181.

Full Text: [2011\Hig Edu62, 163.pdf](2011/Hig%20Edu62,%20163.pdf)

Abstract: Scholars and policy makers recognize that collaboration between industry and the public research institutions is a necessity for innovation and national economic development. This work presents an econometric model which expresses the university capability for collaboration with industry as a function of size, location and research quality. The field of observation is made of the census of 2001-2003 scientific articles in the hard sciences, co-authored by universities and private enterprises located in Italy. The analysis shows that research quality of universities has an impact higher than geographic distance on the capability for collaborating with industry. The model proposed and the measures that descend from it are suited for use at various levels of administration, to assist in realizing the “third role” of universities: the contribution to socio-economic development through public to private technology transfer.

Keywords: Analysis, Bibliometrics, Co-Authorship, Co-Authorships, Collaboration, Contribution, Development, Geographical Proximity, Impact, Industry, Innovation, Italy, Knowledge, Model, Observation, Policy, Projects, Proximity, Public Research, Research, Research Collaboration, Research Institutions, Sciences, Spillovers, Star Scientist, University, University-Industry Collaboration

? Gu, J.B., Lin, Y., Vogel, D. and Tian, W. (2011), What are the major impact factors on research performance of young doctorate holders in science in China: A USTC survey. *Higher Education*, **62** (4), 483-502.

Full Text: [2011\Hig Edu62, 483.pdf](2011/Hig%20Edu62,%20483.pdf)

Abstract: Doctoral graduate research performance (DRP) is recognized as one of the most critical indices for evaluation of the success of doctoral education. Doctoral graduates with high research performance directly reflect a higher ability in academic research and academic achievement. Consequently, identifying which factors influence DRP is potentially of great value. This topic is also challenging because of difficulties in identifying the impact factors on research performance and the feasibility of the relative data collection. This paper first examines the relationships between the indicators and DRP. After a review of previous literature, the focus is on the doctoral graduates’ individual factors, advisor factors and learning performance. Data is collected from graduated doctors from the Science Schools of University of Science and Technology of China (USTC). Contrary to expectations, our findings indicate that, based on the Chinese context, learning performance does not appear to be strongly associated with research performance. Individual factors (status of academic origin) do have significant effect on DRP. The advisor factors (including academic status, academic experience and allocation of energy) show a relatively strong association with DRP, in terms of both the number of publications and the impact factor of Science Citation Index (SCI) cited journals.

Keywords: Academic Scientists, Achievement, Advisor, China, Citation, Data Collection, Departments, Doctoral Graduate, Education, Energy, Evaluation, Feasibility, Higher-Education, Impact, Impact Factor, Impact Factors, Individual Factor, Journals, Learning, Learning Performance, Literature, Origin, Publication Productivity, Publications, Quality, Research, Research Performance, Research Productivity, Review, SCI, Science, Science Citation Index, Success, Survey, University

# Title: Higher Education in Europe

Full Journal Title: [Higher Education in Europe](http://taylorandfrancis.metapress.com/(3eszqa24fx3j40jo03pc1055)/app/home/journal.asp?referrer=parent&backto=linkingpublicationresults,1:104590,1)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Brouns, M. (2000), The gendered nature of assessment procedures in scientific research funding: the dutch case. *Higher Education in Europe*, **25** (2), 193-199.

Full Text: [2000\Hig Edu Eur25, 193.pdf](2000/Hig%20Edu%20Eur25,%20193.pdf)

Abstract: This article discusses the results of a study on gender bias in assessment procedures in the two major institutions for scientific grants in The Netherlands: the Dutch Organization for Scientific Research (NOW) and the Royal Dutch Academy for the Sciences (KNAW). The study concentrated on a qualitative sample of one of the prestigious grants. A total of 128 files were analyzed on the basis of a correlation of characteristics of the applicant (sex, age, and scientific productivity), assessments by the external advisors (peer review), and the decision of NOW. The analysis indicated that women applicants were evaluated differently from male applicants. However, women were not discriminated against in all disciplines. On the contrary, in some disciplines they received a bonus. One of the major conclusions is that gender matters, but in different ways within the different disciplines.

? Federkeil, G. (2002), Some aspects of ranking methodology: The CHE-ranking of German universities. *Higher Education in Europe*, **27** (4), 389-397.

Full Text: [2002\Hig Edu Eur27, 389.pdf](2002/Hig%20Edu%20Eur27,%20389.pdf)

Abstract: Rankings must follow certain methodological standards in order to fulfill their function as a means of promoting transparency with regard to higher education. The approach of the CHE-ranking of German universities is presented and discussed.

# Title: Higher Education Policy

Full Journal Title: [Higher Education Policy](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=09528733)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Johnson, S.B. and Osborne, R.D. (1997), Citation analysis and Northern Ireland: A quality measure? *Higher Education Policy*, **10** (3-4), 297-313.

Full Text: [H\Hig Edu Pol10, 297.pdf](H/Hig%20Edu%20Pol10,%20297.pdf)

Abstract: Research evaluation is used to identify “success” and relate this to funding. Citation analysis is one of many performance indicators but has been largely set aside in the U.K. This paper describes the use of bibliometric data and examines the “parochialism” of Northern Irish research. Papers produced in Northern Ireland between the years 1981 to 1994 and listed with the ISI are used to exemplify the issues. The analysis indicates that some fields are underrepresented in the ISI database. Small research systems can also be significantly influenced by one or two individuals. Publication in a highly visible, Anglo-American, internationally refereed journal will enhance the citation rate. Northern Irish research has a relative lack of international impact, seemingly a function of topics and the journals used. While there is an increasing amount of joint authorship, particularly with the rest of the U.K., relatively little collaboration has taken place with colleagues in the rest of Europe. Citation analysis is an important initial indicator of research impact, useful to establish questions and narrow an overall field of inquiry.

# Title: Higher Education Research and Development

Full Journal Title: [Higher Education Research and Development](http://taylorandfrancis.metapress.com/(plsdpyqrlg5uhw55p1tdph55)/app/home/journal.asp?referrer=parent&backto=linkingpublicationresults,1:105359,1)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Morrison, P.S., Dobbie, G. and McDonald, F.J. (2003), Research collaboration among university scientists. *Higher Education Research and Development*, **22** (3), 275-296.

Full Text: [2003\Hig Edu Res Dev22, 27.pdf](2003/Hig%20Edu%20Res%20Dev22,%2027.pdf)

Abstract: Despite the growing importance of collaboration in research there have been very few investigations of the practice of research collaboration itself. The study we report investigated this practice by analysing 444 collaborative projects undertaken by staff in the Science Faculty of a New Zealand university. While the results support the sociology of science model of vertical collaboration up and down the academic hierarchy, we also show that significant collaboration now takes place across levels in the hierarchy, that is among peers, in what we call horizontal collaboration. This shift from vertical to horizontal collaboration has not been readily apparent in bibliographic studies of co-authored papers in top journals. One of the questions this study raises is the often assumed positive association between collaboration, research output and research quality, and the implications such assumptions have on the institutionalisation of research within the university. We end by suggesting that the shift that is occurring in the location of research from conventional departments to research centres within the university may signal an attempt to resurrect the practice of vertical collaboration.

# Title: Hippokratia

Full Journal Title: Hippokratia

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bamidis, P., Lithari, C. and Konstantinidis, S. (2010), Revisiting Information Technology tools serving authorship and editorship: A case-guided tutorial to statistical analysis and plagiarism detection. *Hippokratia*, **14** (1), 38-48.

Abstract: With the number of scientific papers published in journals, conference proceedings, and international literature ever increasing, authors and reviewers are not only facilitated with an abundance of information, but unfortunately continuously confronted with risks associated with the erroneous copy of another’s material. In parallel, Information Communication Technology (ICT) tools provide to researchers novel and continuously more effective ways to analyze and present their work. Software tools regarding statistical analysis offer scientists the chance to validate their work and enhance the quality of published papers. Moreover, from the reviewers and the editor’s perspective, it is now possible to ensure the (text-content) originality of a scientific article with automated software tools for plagiarism detection. In this paper, we provide a step-by-step demonstration of two categories of tools, namely, statistical analysis and plagiarism detection. The aim is not to come up with a specific tool recommendation, but rather to provide useful guidelines on the proper use and efficiency of either category of tools. In the context of this special issue, this paper offers a useful tutorial to specific problems concerned with scientific writing and review discourse. A specific neuroscience experimental case example is utilized to illustrate the young researcher’s statistical analysis burden, while a test scenario is purpose-built using open access journal articles to exemplify the use and comparative outputs of seven plagiarism detection software pieces. Hippokratia 2010; 14 (Suppl 1): 38-48.

Keywords: Arousal, Authors, Authorship, Database, Emotion Protocol, Emotion Statistical Analysis, Guidelines of Academic Writing, Health, Journal, Journals, Literature, Neuroscience Case Example, Open Access, Originality, Papers, Plagiarism, Plagiarism Detection, Review, Reviewers, Statistical, Statistical Analysis Tools, Tutorial, Writing

# Title: Hispania-Revista Espanola de Historia

Full Journal Title: Hispania-Revista Espanola de Historia

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0018-2141

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rubiolinares, M.C. and Ruizfranco, M.D.R. (1994), Historical research on franquismo - A bibliometric analysis of Spanish journals (1976-1992). *Hispania-Revista Espanola de Historia*, (187), 661-676

Keywords: 20th-Century, Bibliometric, Bibliometric Analysis, Contemporary Age, Franquismo, Journals, Spain, Spanish

? Tosete Herranz, F. (2002), Measuring modern history: The impact of the journal Hispania with respect to Spanish university publications on modern history. *Hispania-Revista Espanola de Historia*, (210), 41-64.

Abstract: The present article addresses the use and impact of the journal Hispania in the principal Spanish scholarly journals dedicated to modern history. The aim is to discover what use modernist have made of Hispania, and to determine whether its visibility has been affected by the appearances of other specialized journals over the last thirty years. To this end, those issues of the scholarly journals published 1989 and 1998 have been studied. This article will establish the number of texts in modern history from Hispania that have been cited or not cited, the provenance and distribution of citations, self-citation by authors, the number of authors cited, those authors and texts most cited, and the age of the articles cited.

Keywords: Citations, Hispania, Journals, Modern History, Publications, Self-Citation, Spanish Historiography, Spanish Journals

# Title: Histopathology

Full Journal Title: Histopathology

ISO Abbreviated Title: Histopathology

JCR Abbreviated Title: Histopathology

ISSN: 0309-0167

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Blackwell Science Ltd

Publisher Address: PO Box 88, Osney Mead, Oxford OX2 0NE, Oxon, England

Subject Categories:

Cell Biology Pathology:

? Tome, Y., Hirohashi, S., Noguchi, M. and Shimosato, Y. (1990), Preservation of cluster-1 small-cell lung-cancer antigen in zinc-formalin fixative and its application to immunohistological diagnosis. *Histopathology*, **16** (5), 469-474.

? Oka, S., Ogino, K., Houbara, T., Yoshimura, S., Okazaki, Y., Takemoto, T., Kato, N., Iida, Y. and Uda, T. (1990), An immunohistochemical study of copper, zinc-containing superoxide-dismutase detected by a monoclonal-antibody in gastric-mucosa and gastric-cancer. *Histopathology*, **17** (3), 231-236.

# Title: Historia Mathematica

Full Journal Title: [Historia Mathematica](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6817&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=6c6196d4fb6666c43f398d84ffe1d170)

ISO Abbreviated Title: Hist. Math.

JCR Abbreviated Title: Hist Math

ISSN: 0315-0860

Issues/Year: 4

Journal Country/Territory: United States

Language: Multi-Language

Publisher: Academic Press Inc

Publisher Address: 525 B St, Ste 1900, San Diego, CA 92101-4495

Subject Categories:

History & Philosophy of Science Mathematics: Impact Factor 0.259, / (2001)

Tankard, Jr., J.W. (1979), The H.G. Wells quote on statistics: A question of accuracy. *Historia Mathematica*, **6** (1), 30-33.

Full Text: [1960-80\His Mat23, 30.pdf](1960-80/His%20Mat23,%2030.pdf)

Abstract: A widely disseminated quotation by H.G. Wells on the importance of statistics is shown to have been misrepresented.

Wagner-Döbler, R. and Berg, J. (1996), Nineteenth-century mathematics in the mirror of its literature: A quantitative approach, historia mathematica. *Historia Mathematica*, **23** (3), 288-318.

Full Text: [1996\His Mat23, 288.pdf](1996/His%20Mat23,%20288.pdf)

Abstract: The point of departure of this paper is the idea that the development of mathematics is reflected in its publications. Hence, the existence of a nearly complete database renders possible general statistical accounts of the development of mathematical activities. To this end, the authors utilize the mathematical index of the*Catalogue of Scientific Papers*of the Royal Society of London dealing with the mathematical journal literature of the 19th century. The relation between the journal and book literature of that century is discussed, with the result that the size of the journal literature is presumably a valid indicator of the intensity of mathematical activities in particular areas. On the basis of this*Catalogue*, graphs of the publication activity of all of 19th-century mathematics and of 34 of its most important subareas are displayed; both the number of active contributors in each area and its share of 19th-century mathematics publications are exhibited. Furthermore, the share of mathematics of the total scientific journal literature of the 19th-century is estimated. Frequency distributions of publication activity and the specialization of 19th-century mathematicians conform to patterns well known in modern scientometrics.

In dieser Arbeit wird davon ausgegangen, daß sich die Entwicklung der Mathematik in ihren Publikationen widerspiegelt. Eine annähernd vollständige bibliographische Datengrundlage gestattet daher globale statistische Beschreibungen der Entwicklung mathematischer Aktivitäten. Die Autoren werteten zu diesem Zweck den mathematischen Index des*Catalogue of Scientific Papers*der Royal Society of London aus, der die mathematische Zeitschriftenliteratur des 19. Jahrhunderts berücksichtigt. Sie diskutieren das Verhältnis von Zeitschriften- zu Buchliteratur in diesem Jahrhundert mit dem Ergebnis, daß der Umfang der Zeitschriftenliteratur vermutlich als Indikator der Intensität mathematischer Aktivitäten auf einzelnen Gebieten gelten kann. Auf der Grundlage des Catalogue werden zur gesamten Mathematik sowie zu 34 der wichtigsten Teilgebiete Verlaufskurven der Publikationsaktivitäten gezeigt, zum einen als Publikationsanteile am Gesamtgebiet, zum anderen als absolute Zahl der auf einem Teilgebiet überhaupt aktiven Mathematiker. Ferner wird der Anteil der Mathematik an der gesamten naturwissenschaftlichen Zeitschriftenliteratur des 19. Jahrhunderts geschätzt. Häufigkeitsverteilungen der Publikationsaktivität und der Spezialisierung der mathematischen Autoren des 19. Jahrhunderts ergaben in der zeitgenössischen Szientometrie bekannte Verteilungsmuster.

Utgångspunkten för denna artikel är föreställningen, att matematikens utveckling återspeglas i dess publikationer. Existensen av en så gott som fullständig databas möjliggör därför allmänna statistiska beskrivningar av utvecklingen av matematiska aktiviteter. För detta ändamål utnyttjade författarna det matematiska indexet till den*Catalogue of Scientific Papers*, som utgivits av Royal Society of London och som behandler 1800-talets matematiska tidskriftslitteratur. Förhållandet mellan det åhundradets tidskrifts- och boklitteratur diskuteras med resultatet, att tidskriftslitteraturens omfång förmodligen gör, att den kan gälla som indikator på itensiteten hos matematiska aktiviteter på ensklida områden. Utgående från denna*Catalogue*visas kurvor på 34 av dess viktigaste delområden; i det senare fallet anges dels varje delområdes andel i publikationer av hela mathematiken, dels antalet aktiva matematiker på området. Vidare uppskattas matematikens andel av hela den naturvetenskapliga tidskriftslitteraturen under 1800-talet. Frekvensfördelningar av publikationsaktiviteten och specialiseringen hos 1800-talets matematiker följer mönster, som är bekanta i den moderna scientometrin.

Keywords: Mathematics, 19th Century, History, Bibliography, *Catalogue of Scientific Papers*, Bibliometrics, Scientometrics

# Title: History and Philosophy of Logic

Full Journal Title: History and Philosophy of Logic

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Middleton, R. (2011), Brittan on Britain: ‘the Economic Contradictions of Democracy’ Redux. *Historical Journal*, **54** (4), 1141-1168.

Full Text: [2011\His J54, 1141.pdf](2011/His%20J54,%201141.pdf)

Abstract: This review furthers our understanding of the history of neo-liberalism in Britain, and more particularly of the economics and politics of the 1970s and 1980s, through an examination of the writings of the economic journalist, Samuel Brittan, widely regarded as a central figure in undermining the intellectual basis for the Keynesian consensus about big government. This review provides a close study of Brittan’s ‘The economic contradictions of democracy’ (1975, hereafter ECD) - one of the most cited contributions to the declinist literature of the decade - in which Brittan warned that, without remedial action, liberal democracy ‘is likely to pass away within the lifetime of people now adult’. In this reappraisal of Brittan’s ECD, it is argued that this paper is much more than just eloquent, scholarly declinism, and in the process, the generic problem facing all contemporary historians of thought and policy is confronted: what is the influence of any one individual and/or work? The reappraisal relates directly to central themes of the 1970s ‘crisis’, especially ‘overload’ and ‘ungovernability’; it examines the competitive nature of the market for declinist prognostications (notably the Jay-Brittan nexus), with one objective being to provide a counterbalance to much recent scholarship which has over-focused on think-tanks at the expense of elite journalists who were very far from being academics manques; and, finally, it reviews Brittan’s role in the so-called Thatcher revolution, where much has been claimed but little documented.

Keywords: Academics, Adult, British, Communities, Crisis, Democracy, Economics, History, Lifetime, Literature, Overload, People, Policy, Political-Science, Politics, Process, Reputation, Review, Scholarship, State

# Title: History and Philosophy of Logic

Full Journal Title: History and Philosophy of Logic

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lewis, A.C. (1995), Mathematical logic from 1847 to the Present - A bibliometric investigation - German - Wagnerdobler, R, Berg, J. *History and Philosophy of Logic*, **16** (1), 136-137.

Keywords: Bibliometric

# Title: History of Psychology

Full Journal Title: [History of Psychology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=7190&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=3281709&md5=e437b344528451847e9334ff99aab3c1)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lange, L.L. (2005), Sleeping beauties in psychology: Comparisons of ‘Hits’ and ‘Missed Signals’ in Psychological Journals. *History of Psychology*, **8** (2), 194-217.

Full Text: [2005\His Psy8, 194.pdf](2005/His%20Psy8,%20194.pdf)

Abstract: Scientific publications tend to be forgotten quickly. A few works, however, are still cited 100 years and more after their publication. The author used bibliometric methods to compare ‘hits’ (works noticed by the scientific community soon after their publication) with ‘missed signals’ (works that went unnoticed until much later) by investigating 2 psychological journals founded in the 1890s: Zeitschrift für Psychologie and Psychological Review. All articles that were published in either of these journals up to 1920 and cited more than 25 times in the Web of Science up to the year 2000 were considered for inclusion in the analysis. It emerged that hits corresponded more closely to the focus of scientific attention at the time of publication than missed signals.

? Sensales, G., Areni, A. and Dal Secco, A. (2011), Building the boundaries of a science: First representations of Italian social psychology between 1875 and 1954. *History of Psychology*, **14** (4), 383-404.

Full Text: [2011\His Psy14, 383.pdf](2011/His%20Psy14,%20383.pdf)

Abstract: The present study embraces the critical traditions of “New History” and of social representations theory articulated with the mainstream historiographical tradition of a bibliometric approach. The historical analysis deals with the early representations of Italian social psychology articulated and disseminated by some of the main Italian scientific-cultural and philosophical journals. We examined seven journals published between 1875 and 1954, and gathered 2,030 texts dealing with the various forms of social and collective psychology. We have applied a grid of content analysis whose data have been transcribed to a numerical file. At the same time, we have created a textual file containing the titles of the contributions as well as the names of the authors and scholars reviewed. The two files have been processed by SPAD-T for a correspondence analysis in which both lexical data and category variables have been considered as active variables. Through the scree-test, two factors that explain 18.90% of the variance have been singled out. Their combination has produced a factorial plan able to highlight three distinct areas differently characterized from journals and years. The results are also discussed with regard to the contextual historical frame.

Keywords: “New History”, Analysis, Authors, Bibliometric, Content Analysis, Correspondence, Future, Historical Analysis, History, History of Italian Social Psychology, Journals, Lexicographical and Content Analysis, Psychology, Science, Social, Social Psychology, Social Representations, Theory

# Title: Hitotsubashi Journal of Economics

Full Journal Title: Hitotsubashi Journal of Economics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Matsui, S., Asano, C. and Matsuda, Y. (1989), A System for generating publication statistics based on bibliographic information: Bibliometric analysis for the development of economic and social thought. *Hitotsubashi Journal of Economics*, **30** (2), 121-156

Keywords: Bibliometric, Bibliometric Analysis, Publication

# Title: HIV Medicine

Full Journal Title: HIV Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sivakumar, T., Mechanic, O.J., Fehmie, D.A. and Paul, B.T. (2011), Growth hormone axis treatments for HIV-associated lipodystrophy: A systematic review of placebo-controlled trials. *HIV Medicine*, **12** (8), 453-462.

Full Text: [2011\HIV Med12, 453.pdf](2011/HIV%20Med12,%20453.pdf)

Abstract: Background HIV-associated lipodystrophy is a disorder of fat metabolism that occurs in patients with HIV infection. It can cause metabolic derangements and negative self-perceptions of body image, and result in noncompliance with highly active antiretroviral therapy (HAART). Growth hormone (GH) axis drugs have been evaluated for treatment of this disorder, but no systematic review has been conducted previously. Objectives The aim of the review was to compare the effects of GH axis drugs vs. placebo in changing visceral adipose tissue (VAT), subcutaneous adipose tissue (SAT) and lean body mass (LBM) in patients with HIV-associated lipodystrophy. Search methods We searched MEDLINE (1996-2009), CENTRAL (Issue 4, 2009), Web of Science, Summons, Google Scholar, the Food and Drug Administration (FDA) website, and Clinicaltrials.gov from 13 October 2009 to 7 June 2010. We excluded newspaper articles and book reviews from the Summons search; this was the only search limitation applied. We also manually reviewed references of included articles. Selection criteria Inclusion criteria were as follows: randomized placebo-controlled trial (RCT); study participants with HIV-associated lipodystrophy; intervention consisting of GH, growth hormone releasing hormone (GHRH), tesamorelin or insulin-like growth factor-1 (IGF-1); study including at least one primary outcome of interest: change in VAT, SAT or LBM. Data collection and analysis Two independent reviewers extracted data and assessed study quality using a standardized form. The authors of one study were contacted for missing information. The main effect was calculated as a summary of the mean differences in VAT, SAT and LBM between the intervention and placebo groups in the included studies. Subgroup analyses were performed to assess different GH axis drug classes. Results Ten RCTs including 1511 patients were included in the review. All had a low risk of bias and passed the test of heterogeneity for each primary outcome. Compared with placebo, GH axis treatments decreased VAT [weighted mean difference (WMD) -25.20 cm(2); 95% confidence interval (CI) -32.18 to -18.22 cm(2); P<0.001] and increased LBM (WMD 1.31 kg; 95% CI 1.00 to 1.61 kg; P<0.001], but had no significant effect on SAT mass (WMD -3.94 cm(2); 95% CI -10.88 to 3.00 cm(2); P=0.27]. Subgroup analyses showed that GH had the most significant effects on VAT and SAT, but none on LBM. The drugs were well tolerated but statistically significant side effects included arthralgias and oedema. Conclusions Our review indicates that, based on the findings of the 10 included studies, GH axis treatments are effective in reducing VAT and increasing LBM in patients with HIV-associated lipodystrophy. However, clinicians must decide whether the attributed benefits are clinically significant, considering the costs and potential risks of GH axis treatments. A limitation of this study is the small number of studies available of each GH axis drug class.

Keywords: Abdominal Fat Accumulation, Adipose, Administration, Aids, Analysis, Antiretroviral, Antiretroviral Therapy, Authors, Bias, Complications, Costs, Diagnosis, Disorder, Double-Blind, Drug, Drugs, Fat, Google Scholar, Growth, Growth Hormone, HAART, HIV, Hormone, Infected Patients, Infection, Information, Interest, Intervention, Lipoatrophy, Lipodystrophy, Lipohypertrophy, Medline, Outcome, Patients, Primary, Randomized Controlled-Trial, Review, Risk, Safety, Science, Side Effects, Systematic, Systematic Review, Tesamorelin, Therapy, Treatment, Web of Science

# Title: Holz Als Roh-und Werkstoff

Full Journal Title: [Holz Als Roh-und Werkstoff](http://www.springerlink.com/app/home/journal.asp?wasp=h83akkxwqn1jvaylwa7w&referrer=parent&backto=linkingpublicationresults,id:102503,1); [Holz Als Roh-und Werkstoff](http://www.springeronline.com/sgw/cda/frontpage/0,11855,5-175-70-1007027-0,00.html)

ISO Abbreviated Title: Holz Als Roh-und Werkst.

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Journal Country/Territory: Germany

Language: Multi-Language

Publisher: Springer-Verlag

Publisher Address: 175 Fifth Ave, New York, Ny 10010

Subject Categories:

Materials Science, Paper & Wood: Impact Factor 0.242 (2002)

Kartal, S.N. and Kose, C. (2003), Remediation of CCA-C treated wood using chelating agents. *Holz Als Roh-und Werkstoff*, **61** (5), 382-387.

Full Text: [H\Hol Als Roh Wer61, 382.pdf](H/Hol%20Als%20Roh%20Wer61,%20382.pdf)

Abstract: This study evaluates the effects of the common chelating agents, ethylenediaminetetracetic acid (EDTA), nitrilotriacetic acid (NTA), and oxalic acid (OA) on the removal of copper, chromium, and arsenic from CCA-C treated wood. In the study, the removal of the metal oxides from treated chips and sawdust by EDTA and NTA in conjunction with OA in dual extraction processes was investigated using batch-leaching experiments. Exposing CCA-C treated chips and sawdust to chelat extraction enhanced the removal of CCA-C components compared to extraction by deionized water. Grinding CCA-C treated wood chips into 40- mesh sawdust provided greater access to and removal of CCA-C components. Extraction with EDTA, OA and NTA, OA in dual extraction processes removed about 100% copper and arsenic and 90% chromium from CCA-C treated sawdust. However dual extraction of CCA-C treated chips resulted in about 80% copper and arsenic, and 70% chromium removal. In single extraction processes, EDTA and NTA removed significant amounts of copper from CCA-C treated chips and sawdust compared to other components.

Keywords: Brown-Rot Decay, Chemistry, Chromium Interactions, Contaminated Soils, Edta Extraction, Heavy-Metals, Kinetic-Behavior, Oxalic-Acid, Preservatives, Removal

Chauhan, S.S. and Aggarwal, P. (2004), Effect of moisture sorption state on transverse dimensional changes in wood. *Holz Als Roh-und Werkstoff*, **62** (1), 50-55.

Full Text: [H\Hol Als Roh Wer62, 50.pdf](H/Hol%20Als%20Roh%20Wer62,%2050.pdf)

Abstract: The purpose of the study was to understand the transverse dimensional changes and corresponding anisotropicity in wood during different states of moisture sorption. Oven dried samples of Erythrina variegata, Lannea coromandelica, Gmelina arborea and Albizia chinensis were adsorbed and subsequently desorbed at constant temperature (35°C). Tangential and radial dimensional changes (swelling) were analysed with respect to relative humidity and moisture content during both the states of sorption. Dimensions in tangential direction were found to change at a relatively greater rate than in radial direction at high humidities. It was observed that transverse dimensions were more during desorption compared to adsorption at a given equilibrium moisture content. This confirms presence a second order effect of moisture sorption on dimensional movement. This effect was found to be more prominent in tangential direction compared to radial direction resulting in higher coefficient of anisotropy (alpha(T)/alpha(R) ratio) during desorption. The magnitude of this phenomenon was found to vary from species to species.

Keywords: Sugar Maple Wood, Hardwoods

Šciban, M. and Klašnja, M. (2004), Wood sawdust and wood originate materials as adsorbents for heavy metal ions. *Holz Als Roh-und Werkstoff*, **62** (1), 69-73.

Full Text: [H\Hol Als Roh Wer62, 69.pdf](H/Hol%20Als%20Roh%20Wer62,%2069.pdf)

Abstract: The abilities of different types of wood sawdust and wood originate materials for removing some toxic heavy metal ions from water were investigated. Sawdust of poplar, willow, fir, oak and black locust wood, pulp and Kraft lignin were used as adsorbents. The effects of contact time, pH, metal concentration and sawdust particle size on the removal of Cu(II) ions by poplar sawdust have been studied. Leaching from these adsorbents into water during adsorption was also investigated.

Keywords: Adsorption, Bark, Heavy Metal, Heavy Metal Ions, Heavy-Metal, Removal, Sorption, Wastes, Wood

Namasivayam, C. and Höll, W.H. (2004), Chromium(III) removal in tannery waste waters using Chinese Reed (*Miscanthus Sinensis*), a fast growing plant. *Holz Als Roh-und Werkstoff*, **62** (1), 74-80.

Full Text: [H\Hol Als Roh Wer62, 74.pdf](H/Hol%20Als%20Roh%20Wer62,%2074.pdf)

Abstract: Dried Chinese Reed (*Miscanthus sinensis*) was investigated as adsorbent for the removal of Cr(III) from tannery wastewater. Batch mode adsorption studies were conducted using aqueous solutions of Cr(III). Parameters studied include Cr(III) concentration, agitation time, adsorbent dose and pH. Adsorption followed pseudo-second order kinetic model. Equilibrium adsorption data obeyed both Langmuir and Freundlich isotherms. Langmuir adsorption capacity was found to be 1.85 mg/g. Effects of pH on adsorption and desorption show that both ion exchange and chemisorption are involved in the adsorption process.

Keywords: Aqueous-Solution, Adsorption, Equilibrium, Wastewaters, Biosorption, Xanthate, System, Dyes

# Title: Holzforschung

Full Journal Title: [Holzforschung](http://www.extenza-eps.com/extenza/contentviewing/viewJournal.do?journalId=364)

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Journal Country/Territory: Germany

Language: Multi-Language

Publisher: Walter de Gruyter & Co

Publisher Address: Genthiner Strasse 13, D-10785 Berlin, Germany

Subject Categories:

Forestry: Impact Factor 0.816 / (2002)

Materials Science, Paper & Wood: Impact Factor 0.816 / (2002)

? Loubinoux, B. and Malek, H. (1992), Interactions of quaternary ammonium-salts with wood. 1. Fixation of Benzalkonium bromide and chloride. *Holzforschung*, **46** (6), 537-539.

Abstract: The adsorption of benzalkonium halides onto beech, oak, and spruce sawdust is studied. After 48 hours the maximum adsorption is reached. For oak, the extractible substances play an important role regarding the quantity of product adsorbed. Equilibrium adsorption isotherms of these alkylammonium compounds do not show maxima similar to that found with didecyldimethylammonium chloride and bromide. A high proportion of ammonium cation binds to the wood without the halide itself being bound

Keywords: Adsorption, Adsorption Isotherms, Ammonium, Beech, Benzalkonium Halides, Isotherms, Oak, Sawdust, Spruce, Spruce Sawdust, Wood

? Aoyama, M., Seki, K. and Saito, N. (1995), Solubilization of bamboo grass xylan by steaming treatment. *Holzforschung*, **49** (3), 193-196.

Abstract: Chopped culms of bamboo grass were treated with saturated steam over a range of temperatures and residence times. The effect of various parameters in the steaming treatment on the recovery yield and solubilization of xylan was investigated. The parameters included steaming temperature, residence time, initial moisture content of the substrate and solvent pre-extraction prior to steaming. Although the major factor in the steaming treatment was the temperature and residence time, solvent pre-extraction as well as initial moisture content of the substrate also significantly affected the solubilization of xylan. When the substrate was pre-extracted with water prior to steaming, a significant increase in the recovery yield of solubilized xylan was observed. The result is possibly explained by the removal of basic salts present in the original raw material.

Keywords: Bamboo, Bamboo Grass, Basic Salts, Enzymatic-Hydrolysis, Explosion, Feed, Hardwoods, Pre-Extraction, Pretreatment, Sasa Senanensis, Solubilization of Xylan, Steaming Treatment, Wood

? Degroot, B., Vandam, J.E.G. and Vantriet, K. (1995), Alkaline Pulping of Hemp Woody Core - Kinetic Modeling of Lignin, Xylan and Cellulose Extraction and Degradation. *Holzforschung*, **49** (4), 332-342.

Abstract: The kinetics of alkaline degradation of lignin, xylan and cellulose in relation to pulp yield were studied for hemp woody core to support development and optimization of a non-polluting alkaline pulping process. Shavings of hemp woody core were impregnated at room temperature with various sodium hydroxide concentration (0.25-2 M NaOH) and delignified isothermally at various reaction temperatures (150-180°C) in a flow- through reactor. Extraction and degradation of xylan from hemp woody core was strongly depending on the NaOH concentration used. Consequently, to attain a certain lignin content, lower NaOH concentrations result in higher pulp yields. Extended pulping diminished the differences in pulp yields, due to further xylan degradation. The kinetics of lignin, xylan and cellulose degradation were modelled as a function of reaction time, temperature and NaOH concentration. The combined models resulted in a pulp yield model for hemp woody core, suitable for process optimization purposes. Degradation kinetics of perennial wood can be modelled similarly, which was illustrated using literature data on spruce and poplar.

Keywords: Alkaline Delignification, Annual Fiber Crops, Cellulose, Cellulose Degradation, Delignification, Flow- Through Reactor, Hemp, Kinetics, Lignin, Models, Poplar, Pulp Yield, Spruce, Wood, Woody Core, Xylan, Xylan Degradation, Xylan Extraction

? Peralta, P.N., Bangi, A.P. and Lee, A.W.C. (1997), Thermodynamics of moisture sorption by the giant-timber bamboo. *Holzforschung*, **51** (2), 177-182.

Abstract: The thermodynamic interaction of water with giant-limber bamboo (Phyllostachys bambusoides Sieb. & Zucc.) was investigated. Thermodynamic properties were evaluated based on isosteric calculations from sorption isotherms at 20, 30, 40 and 50°C. The results show that, compared to wood, giant-timber bamboo exhibits less hygroscopicity and greater hysteresis. The differential heat of sorption, Q(5), was found to be an exponential function of fractional moisture content, m, and decreased somewhat with increasing temperature. The relation Q(s) = (Q(s))(0) exp(-B(1)m) was considered to be reasonably adequate, but a better fit was provided by the equation Q(s) = A(2) + B(2)m + C-2 exp (-D(2)m) so that it was used in the calculation of the heat of wetting, W, and the integral heat of sorption, (W-0 - W). The differential heat of sorption at ovendry condition fell within the range observed for wood and other lignocellulosic materials. The free energy, G(s), and the entropy, S-s, of sorbed water were in close agreement with those observed for wood, reconfirming the theory that definite enthalpy, free energy, and entropy changes accompany the sorption of water by lignocellulosic materials.

Keywords: A/D Ratio, Adsorption, Bamboo, Desorption, Differential Heat of Sorption, Giant-Timber Bamboo, Heat of Wetting, Hysteresis, Integral Heat of Sorption, Phyllostachys Bambusoides, Wood

? Balakskin, M., Chen, C.L., Gratzl, J.S., Kirkman, A.G. and Jakob, H. (2000), Biobleaching of pulp with dioxygen in the laccase-mediator system. Part 1. Kinetics of delignification. *Holzforschung*, **54** (4), 390-396.

Abstract: Kinetics of pine kraft-AQ pulp delignification with the laccase-mediator system (LMS) and the effects of variable factors on the delignification were studied. The delignification was conducted in acetate buffer solution at pH 4.5 and at 40°C under atmospheric pressure. Only a part of the residual lignin could be removed in one-stage processes. Kinetics of kappa number reduction follows a pseudo-second order rate law with pulp consistency of 10 %, mediator charge of 0.1 mmole HOBT/g pulp and laccase charage of 10 U Coriolus Iaccase/g pulp. Kinetics of dioxygen uptake follows a pseudo-first order rate law up to first 8 hours of the reaction and a pseudo-zero order rate law at the reaction time of 8-24 hours. The amounts of dioxygen consumed per removal of one C-9-unit equivalent of residual lignin is rather high, 1.5-2.5 mole, and increases with increasing reaction time. Experimental data show that side reactions between the Laccase-Mediator System and products of oxidative degradation of lignin strongly inhibit the delignification either by chemical or physical means or both. Removal of the degraded lignin fragments by alkaline extraction effectively restores the delignification of pulp with LMS. A four-stage process consisting of consecutive treatment of pulp with dioxygen-laccase-HOBT (LMS) followed by alkaline extraction (E), (LMS-E)(4), decreased kappa number of a pine kraft-AQ pulp from 21.8 to less than 5. On the basis of the kinetic data. the mechanism of the pulp delignification with LMS is discussed.

Keywords: Biobleaching, Totally Chlorine Free Bleaching, Laccase-Mediator System (LMS), Kinetics, Delignification, Oxidation, Dioxygen Uptake, Multi-Lms Bleaching Process, Kraft Pulp

? Stevanovic-Janezic, T., Cooper, P.A. and Ung, Y.T. (2000), Chromated copper arsenate preservative treatment of North American hardwoods - Part 1. CCA fixation performance. *Holzforschung*, **54** (6), 577-584.

Abstract: We have examined chromated copper arsenate (CCA) wood preservative fixation at two selected temperatures in seven common North American hardwood species: red maple (Acer rubrum L.), white birch (Betula papyrifera Marsh.), yellow poplar (Liriodendron tulipifera L.), trembling aspen (Populua tremuloides Michx.), red oak; (Quercus rubra L.), basswood (Tilia americana L.) and American beech (Fagus granifolia Ehrh). The softwood red pine (Pinus resinosa Ait.) was included for comparison. CCA component fixation was monitored by the expressate method at both 21°C and 50°C under non-drying conditions. Hexavalent chromium (CrVI) and total Cr, Cu and As contents of the expressate were determined at different times during fixation. Based on CCA fixation results it was possible to divide the examined hardwoods into a fast fixing group (beech, red oak acid red maple), intermediate group (white birch and red pine) and slow fixing group (aspen, yellow poplar and basswood). The variable fixation rates for the different species could not be directly related to different anatomical and chemical attributes of the studied hardwoods, although there was an apparent relationship with density with more dense species fixing faster than low density species. However, the species differences appeared to be mainly influenced by types and amounts of extractives in the woods. In red maple, extraction resulted in a slowing of the fixation late, while the opposite effect was seen in red oak.

Keywords: CCA, Fixation Rate, North American Hardwoods, Anatomy, Chemical Constituents, Acer Rubrum, Betula Papyrifera, Liriodendron Tulipifera, Populus Tremuloides, Quercus Rubra, Tilia Americana, Fagus Grandifolia, Pinus Resinosa, Wood Preservatives, Chromium Interactions

# Title: Home Health Care Services Quarterly

Full Journal Title: Home Health Care Services Quarterly

ISO Abbreviated Title:

JCR Abbreviated Title: Evid Based Dent

ISSN: 0162-1424 (Print), 1545-0856 (Electronic)

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rosenau, P.V. and Linder, S.H. (2001), The comparative performance of for-profit and nonprofit home health care services in the US. *Home Health Care Services Quarterly*, **20** (2), 47-59.

Full Text: Hom Hea Car Ser Qua20, 47.pdf

Abstract: OBJECTIVE: To determine, by way of an exhaustive, systematic, and comprehensive review and summary of all scientific published studies, whether or not there are any performance differences between private for-profit and private nonprofit home health care providers. The second objective is to discover the proportion of all research on this topic that is devoted to home health care services compared to all other health services providers. DATA SOURCES: Computerized bibliographic searches of relevant databases and published indexes and abstracts were undertaken. They included MEDLINE (Ovid and Pubmed versions), Web of Science (Social Sciences Citation Index and Science Citation Index), ABI/Inform, and Sociological Abstracts. Follow-up searches of reference lists in each article obtained from the computerized search were then completed. STUDY DESIGN: This systematic review retained for analysis all published studies that compared the performance of for-profit and nonprofit health care providers on access, quality, cost/efficiency, and/or amount of charity care, based on data collected after 1980. As a quality control measure only studies published in peer reviewed journals were included. Studies were coded according to the article’s stated conclusions: for-profit superiority, nonprofit superiority, or no difference/mixed results. PRINCIPAL FINDINGS: The comparative performance of for-profit and nonprofit home health service organizations is one of the most understudied areas of health care provider services in the US today. Only 6 of the over 1030 comparisons of the two concerned home health care. No data on this topic have been collected since 1991, and no articles about it have been published in a peer-reviewed journal since 1995. CONCLUSION: Research on the relative performance of for-profit and nonprofit home health care services is a research priority urgently in need of attention.

Keywords: Access, Analysis, Care, Control, Data, Databases, Design, Health, Health Care, Health Care Services, Health Services, Journal, Journals, Measure, Peer Reviewed Journals, Peer-Reviewed, Performance, Providers, Quality, Quality Control, Research, Review, Science Citation Index, Service, Services, Systematic Review, US, Web of Science

# Title: Homeopathy

Full Journal Title: [Homeopathy](http://www.sciencedirect.com/science/journal/14754916)

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JCR Abbreviated Title: Homeopathy

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Publisher:

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Subject Categories:

: Impact Factor

? Endler, P.C., Thieves, K., Reich, C., Matthiessen, P., Bonamin, L., Scherr, C. and Baumgartner, S. (2010), Repetitions of fundamental research models for homeopathically prepared dilutions beyond 10-23: A bibliometric study. *Homeopathy*, **99** (1), 25-36.

Full Text: [2010\Homeopathy99, 25.pdf](2010/Homeopathy99,%2025.pdf)

Abstract: Introduction: Repeatability of experiments is an important criterion of modern research and a major challenge for homeopathic basic research. There is no recent overview about basic research studies in high homeopathic potencies that have been subjected to laboratory-internal, multicenter or independent repetition trials. Methods: We considered biochemical, immunological, botanical, cell biological and zoological studies on high potencies, i.e. beyond a dilution of 10(-23). Main sources of information were reviews, personal contact with members of the homeopathic basic research community, and the MEDLINE and HOMBREX databases. Studies were extracted from the publications and grouped into models. Studies were further sorted according to repetition type (laboratory-internal, multicenter, or independent) and results achieved. Results: A total of 107 studies were found. Of these, 30 were initial studies. In the attempt to reproduce one of these initial studies, 53 follow-up studies yielded comparable effects (35 laboratory-internal, 8 multicenter, 10 independent repetitions), eight studies showed a consistent, yet different result from the initial study (2 laboratory-internal, 2 multicenter, 4 independent repetitions), and 16 studies yielded no effects (5 laboratory-internal, 2 multicenter, 9 independent repetitions). When all repetitive studies are considered, 69% reported effects comparable to that of the initial study, 10% different effects, and 21% no effects. Independently performed repetition studies reported 44% comparable effects, 17% different effects, and 39% no effects. Conclusions: We identified 24 experimental models in basic research on high homeopathic potencies, which were repeatedly investigated. 22 models were reproduced with comparable results, 6 models with different results, and repetition showed no results for 15 models. Independent reproductions with either comparable or different results were found for seven models. We encourage further repetition trials of published studies, in order to learn more about the model systems used and in order to test their repeatability. Homeopathy (2010) 99, 25-36.

Keywords: Acetyl Salicylic-Acid, Activation, Arsenic Trioxide, Basic Research, Bibliometric, Bibliometric Study, De-Granulation, Drug Arsenicum-Album-30, Histamine Dilutions, Homeopathy, Human Basophil Degranulation, In-Vitro, Medline, Mice, Potentisation, Publications, Research, Review, Ultra High Dilutions, Wheat Seedling Growth

# Title: Homo

Full Journal Title: Homo

ISO Abbreviated Title:

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ISSN: 0018-442X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Spiegel-Rösing, I. and Schwidetzky, I. (1976), Comparative bibliometric profiles of physical anthropology and human genetics. *Homo*, **27** (1), 31-45.

# Title: Hoppe-Seylers Zeitschrift Fur Physiologische Chemie

Full Journal Title: Hoppe-Seylers Zeitschrift Fur Physiologische Chemie

ISO Abbreviated Title:

JCR Abbreviated Title: Hoppe-Seylers Z Physiol Chem

ISSN: 1475-4916

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Jennissen, H.P. (1980), Mechanism of protein adsorption on hydrophobic agaroses - adsorption-kinetics of phosphorylase-B. *Hoppe-Seylers Zeitschrift Fur Physiologische Chemie*, **361** (3), 275-275.

# Title: Hormone and Metabolic Research

Full Journal Title: Hormone and Metabolic Research

ISO Abbreviated Title:

JCR Abbreviated Title:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Auvinen, H.E., Romijn, J.A., Biermasz, N.R., Havekes, L.M., Smit, J.W.A., Rensen, P.C.N. and Pereira, A.M. (2011), Effects of high fat diet on the basal activity of the hypothalamus-pituitary-adrenal axis in mice: A systematic review. *Hormone and Metabolic Research*, **43** (13), 899-906.

Full Text: [2011\Hor Met Res43, 899.pdf](2011/Hor%20Met%20Res43,%20899.pdf)

Abstract: Hypothalamus-pituitary-adrenal-axis activity is suggested to be involved in the pathophysiology of the metabolic syndrome. In diet-induced obesity mouse models, features of the metabolic syndrome are induced by feeding high fat diet. However, the models reveal conflicting results with respect to the hypothalamus-pituitary-adrenal-axis activation. The aim of this review was to assess the effects of high fat feeding on the activity of the hypothalamus-pituitary-adrenal-axis in mice. PubMed, EMBASE, Web of Science, the Cochrane database, and Science Direct were electronically searched and reviewed by 2 individual researchers. We included only original mouse studies reporting parameters of the hypothalamus-pituitary-adrenal-axis after high fat feeding, and at least 1 basal corticosterone level with a proper control group. Studies with adrenalectomized mice, transgenic animals only, high fat diet for less than 2 weeks, or other interventions besides high fat diet, were excluded. 20 studies were included. The hypothalamus-pituitary-adrenal-axis evaluation was the primary research question in only 5 studies. Plasma corticosterone levels were unchanged in 40%, elevated in 30%, and decreased in 20% of the studies. The effects in the peripheral tissues and the central nervous system were also inconsistent. However, major differences were found between mouse strains, experimental conditions, and the content and duration of the diets. This systematic review demonstrates that the effects of high fat feeding on the basal activity of the hypothalamus-pituitary-adrenal-axis in mice are limited and inconclusive. Differences in experimental conditions hamper comparisons and accentuate the need for standardized evaluations to discern the effects of diet-induced obesity on the hypothalamus-pituitary-adrenal-axis.

Keywords: 11-Beta-Hydroxysteroid Dehydrogenase Type-1, Activation, Adipose-Tissue, Cochrane, Control, Corticosterone, Diet, Diet-Induced Obesity, Differences, Disease, Embase, Evaluation, Experimental, Expression, Fat, Feeding, Glucocorticoid-Receptor, Induced, Inhibition, Insulin-Resistance, Interventions, Metabolic Syndrome, Metabolic Syndrome, Mouse, Obesity, Primary, Pubmed, Research, Researchers, Review, Science, Stress, Systematic, Systematic Review, Visceral Obesity, Web of Science, Web-of-Science

# Title: Hormone Research

Full Journal Title: Hormone Research

ISO Abbreviated Title: Horm. Res.

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Journal Country/Territory: Switzerland

Language: English

Publisher: Karger

Publisher Address: Allschwilerstrasse 10, CH-4009 Basel, Switzerland

Subject Categories:

Endocrinology & Metabolism: Impact Factor

? Stabler, B., Clopper, R.R., Siegel, P.T., Nicholas, L.M., Silva, S.G., Tancer, M.E. and Underwood, L.E. (1996), Links between growth hormone deficiency, adaptation and social phobia. *Hormone Research*, **45** (1-2), 30-33.

Abstract: Children referred for growth hormone (GH) treatment have increased school achievement problems, lack appropriate social skills and show several forms of behavior problems, A multicenter study in the United States has revealed that many GH-impaired children exhibit a cluster of behavioral symptoms involving disorders of mood and attention, Anxiety, depression, somatic complaints and attention deficits have been identified. These symptoms decline in frequency over a period of 3 years, beginning shortly after GH replacement therapy is started. Many of the patients who have received GH and had good growth responses show lower than average quality of life in young adulthood after treatment is completed. GH-deficient adults placed on GH therapy report improvement in psychological well-being and health status, suggesting that GH might have a central neuroendocrine action, Among a group of adults who were GH deficient as children, we find a high incidence of social phobia, a psychiatric disorder linked to GH secretion and usually accompanied by poor life quality. An ongoing study of non-GH-deficient short individuals suggests that short stature is not the cause of this outcome, We conclude that the origins of psychiatric comorbidities, such as social phobia and depression, in GH deficient adults are likely to be neuroendocrine as well as psychosocial.

Keywords: Adults, Performance, Growth Hormone, Stature, Adaptation, Psychiatric Symptoms, Social Phobia

# Title: Hormones and Behavior

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Salvador, A., Serrano, M.A. and González-Bono, E. (2003), Research trends in the journal *Hormones and Behavior* (1987–2000). *Hormones and Behavior*, **43** (3), 375-380.

Full Text: [H\Hor Beh43, 375.pdf](H/Hor%20Beh43,%20375.pdf)

Abstract: As a continuation of the study carried out by Svare more than 15 years ago (Horm. Behav. 22 (1988), 139) and to determine the tendencies of the evolution of behavioral endocrinology since then, our aim was to extend his work until 2000, assuming that the journal *Hormones and Behavior* would be representative of the field at large. To study this 14-year period and compare it with Svare’s data, we kept the same criteria and categories, behavioral patterns, and species. Our results show that “sexual behavior” in “rodents” is still the most extensive field studied by behavioral endocrinologists, although frequency of other topics is increasing, above all “aggressive and emotional responses, “ and especially the interrelationships between them. Interestingly, studies dedicated to humans are slowly becoming more common. In addition to these analyses, we obtained the several citations received by a randomly selected sample of articles during the period that was divided by the number of years when the articles can be potentially cited. These ratios revealed that research on “humans, “ within the category of species, and on “memory, learning, and conditioning” and “aggressive and emotional responses, “ within the behavioral categories, present the highest visibility in the literature. Furthermore, this analysis was complemented with information about the main receptor journals of the papers published in *Hormones and Behavior*, classified by the same categories. All these data, although limited by the analysis of only one journal, permitted us to reflect on whether the evolution tendencies formulated by Beach (Horm. Behav. 15 (1981), 325) for this discipline were applicable to the period studied, thus confirming its status as a mature discipline for the last quarter of the 20th century.

Keywords: Behavioral Endocrinology, Historical Analysis, Bibliometry, Species, Behavioral Patterns, Research Trends, Citations

# Title: Hortscience

Full Journal Title: Hortscience

ISO Abbreviated Title: Hortscience

JCR Abbreviated Title: Hortscience

ISSN: 0018-5345

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Amer Soc Horticultural Science

Publisher Address: 113 S West St, Ste 200, Alexandria, VA 22314-2851

Subject Categories:

Horticulture: Impact Factor 0.542, / (2001)

? Foster, W.J. and Wright, R.D. (1981), Ammonium adsorption in pine bark. *Hortscience*, **16** (3), 293.

? Foster, W. and Wright, R. (1981), NH4+ adsorption to a pine bark growing medium. *Hortscience*, **16** (3), 463.

? Jones, J.B. (1981), Most-cited plant scientists. *Hortscience*, **16** (6), 739-740.

Keywords: Scientists

? Finnie, J.F. and Vanstaden, J. (1987), Multiplication of the tree fern Cyathea-Dregei. *Hortscience*, **22** (4), 665-665.

# Title: Hospital Medicine

Full Journal Title: Hospital Medicine

ISO Abbreviated Title: Hosp. Med

JCR Abbreviated Title: Hosp Med

ISSN: 1462-3935

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Mark Allen Publishing Ltd

Publisher Address: Croxted Mews, 286a-288 Croxted Road, London SE24 9BY, England

Subject Categories:

Medicine, General & Internal: Impact Factor

? Scally, G. and Perkins, C. (1998), Environment and health. *Hospital Medicine*, **59** (11), 872-876.

Abstract: There is a clear connection between environment and health. This article outlines the importance of the quality of the environment and the role of the public health function in working across the NHS and local government to improve population health.

# Title: Houille Blanche-Revue Internationale de L Eau

Full Journal Title: Houille Blanche-Revue Internationale de L Eau

ISO Abbreviated Title: Houille Blanche-Rev. Int.

JCR Abbreviated Title: Houille Blanche

ISSN: 0018-6368

Issues/Year: 6

Journal Country/Territory: France

Language: English

Publisher: Revue Generale Electricite S A

Publisher Address: 48, Rue De La Procession, 75724 Paris Cedex 15, France

Subject Categories:

Water Resources: Impact Factor

? Bediot, G. (1998), Indicator schedule making: Preliminary reflection about the efficiency assessment of the French water agencies financial action. *Houille Blanche-Revue Internationale de L Eau*, **53** (1), 33-43.

Abstract: The efficiency assessment of the french water agencies financial action on water environment and public health is only a simple technical problem as “how to convert elementary data into indicator?”. Actually this question is quickly supplanted by the organisational one “who are the participants involved and on which agreement are they ready to come?”. But the policy management will define each organisation’s way of working, which is guided by its own interest. The complete innocent thinks the general interest should federate the action at every level: that’s not the case because the final objectives are often contradictory. A few examples will show that a single indictor schedule is not relevant and that the lack of scientific knowledge is the cause of difficulties.

# Title: How to Write and Publish a Scientific Paper

? Day, R.A. (1979), *How to write and publish a scientific paper*, ISI Press, Philadelphia.

# Title: HPB

Full Journal Title: HPB

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1365-182X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Koti, R.S., Gurusamy, K.S., Fusai, G. and Davidson, B.R. (2010), Meta-analysis of randomized controlled trials on the effectiveness of somatostatin analogues for pancreatic surgery: A Cochrane review. *HPB*, **12** (3), 155-165.

Full Text: [2010\HPB12, 155.pdf](2010/HPB12,%20155.pdf)

Abstract: Background: The use of synthetic analogues of somatostatin following pancreatic surgery is controversial. The aim of this meta-analysis is to determine whether prophylactic somatostatin analogues (SAs) should be used routinely in pancreatic surgery. Methods: Randomized controlled trials were identified from the Cochrane Library Trials Register, MEDLINE, EMBASE, Science Citation Index Expanded and reference lists. Data were extracted from these trials by two independent reviewers. The risk ratio (RR), mean difference (MD) and standardized mean difference (SMD) were calculated with 95% confidence intervals (95% CIs) based on intention-to-treat or available case analysis. Results: Seventeen trials involving 2143 patients were identified. The overall number of patients with postoperative complications was lower in the SA group (RR 0.71, 95% CI 0.62-0.82), but there was no difference between the groups in perioperative mortality (RR 1.04, 95% CI 0.68-1.59), re-operation rate (RR 1.15, 95% CI 0.56-2.36) or hospital stay (MD -1.04 days, 95% CI -2.54 to 0.46). The incidence of pancreatic fistula was lower in the SA group (RR 0.64, 95% CI 0.53-0.78). The proportion of these fistulas that were clinically significant is not clear. Analysis of results of trials that clearly distinguished clinically significant fistulas revealed no difference between the two groups (RR 0.69, 95% CI 0.34-1.41). Subgroup analysis revealed a shorter hospital stay in the SA group than among controls for patients with malignant aetiology (MD -7.57 days, 95% CI -11.29 to -3.84). Conclusions: Somatostatin analogues reduce perioperative complications but do not reduce perioperative mortality. However, they do shorten hospital stay in patients undergoing pancreatic surgery for malignancy. Further adequately powered trials of low risk of bias are necessary.

Keywords: Aetiology, Analysis, Bias, Case Analysis, Clinical-Trials, Complications, Confidence, Confidence Intervals, Controlled Multicenter, Effectiveness, Efficacy, Empirical-Evidence, Fistula, Hospital, Hospital Stay, Incidence, Intervals, Low Risk, Malignancy, Medline, Meta-Analysis, Metaanalysis, Mortality, Octreotide, Pancreatic Fistula, Pancreatic Resection, Pancreaticoduodenectomy, Patients, Perioperative Complications, Placebo-Controlled Trial, Postoperative, Postoperative Complications, Prevention, Prophylactic, Prophylactic Octreotide, Randomized, Randomized Controlled Trials, Reference, Reference Lists, Reoperation, Review, Risk, Science Citation Index, Somatostatin, Surgery, Systematic Review

# Title: Huagong Xuebao/Journal of Chemical Industry and Engineering (China)

Full Journal Title: [Huagong Xuebao/Journal of Chemical Industry and Engineering (China)](http://www.scopus.com/scopus/source/sourceInfo.url?sourceId=96594)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Liao, X., Zhang, M., Wang, R. and Shi, B. (2004), Adsorption behavior of solid waste of leather manufacture. *Huagong Xuebao/Journal of Chemical Industry and Engineering (China)*, **55** (12), 2051-2059.

Abstract: The adsorption behavior of chrome-containing and tannins-containing solid waste originated from leather manufacture was investigated. The experimental results indicated that the chrome-containing leather waste could substantially adsorb acid dyes and direct dyes. However it was ineffective for the adsorption of alkali dyes. The adsorption equilibrium of chrome-containing leather waste to acid dyes and direct dyes could be described by the Langmuir equation and the pseudo-second-order rate model gave perfect fitting to the adsorption kinetics. The tannins-containing leather waste exhibited high adsorption capacities to Au3+, U6+, Th4+ and Hg2+. However the adsorption equilibrium of metal ions on the tannins-containing leather waste could not be described by single equation. The adsorption equilibrium of Cu2+, U6+, Pb2+ and Hg2+ could be described by the Freundlich equation, while that of Au3+ and Th4+ could be described by the Langmuir equation. These facts implied that the different adsorption mechanisms might be involved in the adsorption processes of metal ions on the tannins-containing leather waste. The pseudo-second-order rate model also gave perfect fitting to the adsorption rate data of metal ions on the tannins-containing leather waste. The adsorption column of chrome-containing leather waste could be easily regenerated after adsorption of dyes. Similarly, the adsorption column of tannins-containing leather waste could be also easily regenerated after adsorption of metal ions except Au3+. The change of adsorption behavior of the regenerated columns was not considerable, which indicated the potential value of a using solid waste of leather processing in environmental protection.

Keywords: Adsorption, Chrome-Containing Leather Waste, Dyes, Metal Ions, Tannins-Containing Leather Waste

? Ma, H., Liao, X., Wang, R. and Shi, B. (2005), Immobilization of tannin on collagen fiber membrane and its adsorption to Pb(II) and Hg(II) in aqueous solution. *Huagong Xuebao/Journal of Chemical Industry and Engineering (China)*, **56** (10), 1907-1911.

Abstract: A novel adsorption membrane with excellent physical properties was prepared by immobilizing bayberry tannin onto hide collagen fiber membrane. The equilibrium adsorption capacities of the membrane to Pb(II) and Hg(II) were 39.9 mg·g-1 and 75.2 mg·g-1 respectively at 303 K when the equilibrium concentrations of Pb(II) and Hg(II) were 192.1 mg·L-1 and 23.5 mg·L-1. Higher temperature led to higher adsorption capacity. The adsorption isotherm of Pb(II) on the tannin immobilized membrane could be described by the Langmuir model, however, the isotherms of Hg(II) tended to be fitted by the Freundlich model. The data of adsorption rate could be well described by the **pseudo-second-order** rate model. Continuous adsorption experiments indicated that multi-layer membranes were efficient for the removal of Pb(II) and Hg(II) from water. The membrane was easy to be regenerated by 0.1 mol·L-1 HNO3 after continuous adsorption and no considerable change of its adsorption property was observed after adsorption and desorption cycles.

Keywords: Adsorption, Collagen Fiber Membrane, Hg(II), Immobilization, Pb(II), Tannin

# Title: Huanjing Kexue

Full Journal Title: Huanjing Kexue

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0250-3301

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Liu, R.X., Wang, Y.X. and Tang, H.X. (2002), Removal of arsenate by a new type of ion exchange fiber. *Huanjing Kexue*, **23** (5), 88-91.

Abstract: A new type of ion exchange fiber was prepared for the removal of arsenate from water. A batch sorption experiments showed that the fibrous sorbent had high sorption capacity and good kinetic property for arsenate ion. The sorption kinetic data can be described by the Lagergren pseudo-second order rate equation very well. Freundlich model can simulate the adsorption equilibrium data of arsenate ion in the studied concentration range. The removal of arsenate by the fiber reached a maximum in pH value range of 3.5 to 7.0. The column performance was carried to assess the applicability of the ion exchange fiber for the removal of arsenate ion with satisfactory result. The diluted NaOH solution is an efficient eluant for the desorption of arsenate on from the fiber column, and 30 mL of 0.5 mol/L NaOH can quantitatively recover arsenate from water.

# Title: Human Communication Research

Full Journal Title: Human Communication Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0360-3989

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Ashburner, J. and Friston, K.J. (1999), Nonlinear spatial normalization using basis functions. *Human Brain Mapping*, **7** (4), 254-266.

Full Text: [1999\Hum Bra Map7, 254.pdf](1999/Hum%20Bra%20Map7,%20254.pdf)

Abstract: We describe a comprehensive framework for performing rapid and automatic nonlabel-based nonlinear spatial normalizations. The approach adopted minimizes the residual squared difference between an image and a template of the same modality. In order to reduce the number of parameters to be fitted, the nonlinear warps are described by a linear combination of low spatial frequency basis functions. The objective is to determine the optimum coefficients fur each of the bases by minimizing the sum of squared differences between the image and template, while simultaneously maximizing the smoothness of the transformation using a maximum a posteriori (MAP) approach. Most MAT approaches assume that the variance associated with each voxel is already known and that there is no covariance between neighboring voxels. The approach described here attempts to estimate this variance from the data, and also corrects fur the correlations between neighboring voxels. This makes the same approach suitable for the spatial normalization of both high-quality magnetic resonance images, and low-resolution noisy positron emission tomography images. A fast algorithm has been developed that utilizes Taylor’s theorem and the separable nature of the basis functions, meaning that most of the nonlinear spatial variability between images can be automatically corrected within a few minutes. Hum. Brain Mapping 7:254-266, 1999. (C) 1999 Wiley-Liss, Inc.

Keywords: Anatomy, Basis Functions, Brain, Deformable Templates, England, Functional Mapping, Imaging, MRI, PET, Registration, Registration, Spatial Normalization, Stereotaxy

? Smith, S.M. (2002), Fast robust automated brain extraction. *Human Brain Mapping*, **17** (3), 143-155.

Full Text: [2002\Hum Bra Map17, 143.pdf](2002/Hum%20Bra%20Map17,%20143.pdf)

Abstract: An automated method for segmenting magnetic resonance head images into brain and nonbrain has been developed. It is very robust and accurate and has been tested on thousands of data sets from a wide variety of scanners and taken with a wide variety of MR sequences. The method, Brain Extraction Tool (BET), uses a deformable model that evolves to fit the brain’s surface by the application of a set of locally adaptive model forces. The method is very fast and requires no preregistration or other pre-processing before being applied. We describe the new method and give examples of results and the results of extensive quantitative testing against “gold-standard” hand segmentations, and two other popular automated methods. (C) 2002 Wiley-Liss, Inc.

Keywords: Accurate, Brain, Brain Segmentation, Cortical Surface Modeling, Data Sets, England, Model, Mr-Images, Segmentation

# Title: Human Communication Research

Full Journal Title: Human Communication Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0360-3989

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Reeves, B. and Borgman, C.L. (1983), A bibliometric evaluation of core journals in communication-research. *Human Communication Research*, **10** (1), 119-136.

Full Text: Hum Com Res10, 119.pdf

Abstract: Bibliometrics is a method of assessing scientific activity based on the citation links between journal articles. Nine core journals in the field of communication were studied to evaluate their influence on each other and on journals outside the field. Most of the data were drawn from the Social Sciences Citation Index Journal Citation Reports, 1977–1979 issues. It was found that communication journals make only about 13% of their cites to other communication journals, and 44% of these are self-citations. With the exception of Public Opinion Quarterly, communication journals make five citations for every one they receive. A network analysis showed that the nine journals clustered into two groups: speech-communication journals and mass communication journals. Human Communication Research has the most influence within the communication discipline, and Public Opinion Quarterly has the most influence outside the discipline. Communication remains a field with separate subliteratures and is very dependent on journals outside communication research.

? Barnett, G.A. and Danowski, J.A. (1992), The structure of communication - A network analysis of the international communication association. *Human Communication Research*, **19** (2), 264-285.

Full Text: Hum Com Res19, 264.pdf

Abstract: The structure of the discipline of Communication is examined using the frequency of joint memberships in the International Communication Association’s divisions and interest groups. The results suggest that the structure is more complex than previously suggested by bibliometric research. There are at least two dimensions that differentiate the divisions/interest groups. As reported in the bibliometric literature, one is a dimension that separates the mass media and the interpersonally oriented divisions. The second differentiates the humanistic from the scientific. One method found a third dimension: theoretical to applied. Cluster analysis based on the actual number of joint memberships found three clusters: humanistic, mediated, and interpersonal. A cluster analysis that controlled for the size of the divisions/interest groups found only two: humanistic and scientific. Blockmodeling of the joint memberships identified four: humanistic, mediated, interpersonal, and information technology.

Keywords: Bibliometric, Cluster Analysis, Information Technology, Journals, Literature, Mass Media, Positions, Research, Social-Structure, Technology

? Funkhouser, E.T. (1996), The evaluative use of citation analysis for communication journals. *Human Communication Research*, **22** (4), 563-574.

Full Text: [1996\Hum Com Res22, 563.pdf](1996/Hum%20Com%20Res22,%20563.pdf)

Abstract: This study investigated the impact of the omission of scholarly communication journals from Social Sciences Citation Index (SSCI) and Arts and Humanities Citation Index (AHCI) on citation-based appraisals of communication literature. Citation data were collected from reference lists in articles appearing in 27 communication journals published during 1990, including 14 not indexed by SSCI or AHCI. The 14 journals not included in SSCI or AHCI contributed 1,953, or 26%, of the 7,640 citations to authors during 1990, and 1,156, or 25%, of the 4,587 citations to journals in 1990. Twenty-seven of the 50 most frequently cited authors received 25% or more of their citations from journals omitted try SSCI and AHCI. This study found that an accurate evaluation of a scholar’s articles based on citations received will not be possible until SSCI and/or AHCI choose to include the omitted journals, and that computer applications could be used to provide a convenient and inexpensive on-line citation index for communication literature. The Journal Impact Rating, a measure for use in comparing journals’ impact on the basis of citations received, was introduced.

Keywords: Scholarly Communication, Bibliometrics

? Feeley, T.H. (2008), A bibliometric analysis of communication journals from 2002 to 2005. *Human Communication Research*, **34** (3), 505-520.

Full Text: [2008\Hum Com Res34, 505.pdf](2008/Hum%20Com%20Res34,%20505.pdf)

Abstract: Journal impact ratings are often used by authors, promotion/hiring committees, and grant review teams as a proxy for scholarship quality. Journal citation data (2002-2005) from Social Sciences Citation Index were used to rank journals in the field Of communication. A journal relatedness algorithm was applied to ascertain the 19 semantically related journals in communication. The mean journal impact index was 0.77 (SD = 0.28). Human Communication Research (HCR), Personal Relationships, journal of Communication (JOC), and Communication Research (CR) were ranked the top four journals for the study years examined. Network analysis was conducted on in-degree (i.e., citations to journals) and out-degree (i.e., citations from journals) data for the 19 communication journals for 2003-2005. The purpose of the network analysis was to study the citation patterns among journals in the field of communication. Data using degree centrality indicate that Communication Monographs, CR, HCR, and JOC (in alphabetical order) are the four most central journals in the field.

Keywords: Algorithm, Analysis, Bibliometric, Bibliometric Analysis, Citation, Citation Patterns, Citations, Communication, CR, Data, Field, Impact, Impact Index, Index, Journal, Journal Impact, Journals, Network, Network Analysis, Purpose, Quality, Rank, Review, Scholarship

# Title: Human and Ecological Risk Assessment

Full Journal Title: [Human and Ecological Risk Assessment](http://www.informaworld.com/smpp/title~content=t713400879)

ISO Abbreviated Title: Hum. Ecol. Risk Assess.

JCR Abbreviated Title: Hum Ecol Risk Assess

ISSN: 1080-7039

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: CRC Press LLC

Publisher Address: 2000 Corporate Blvd NW, Journals Customer Service, Boca Raton, FL 33431

Subject Categories:

Environmental Sciences: Impact Factor 0.884, / (2001); Impact Factor 1.290, 92/163 (2008); Impact Factor 1.528, 87/180 (2009)

? Brown, K.G., Guo, H.R. and Greene, H.L. (1997), Uncertainty in cancer risk at low doses of inorganic arsenic. *Human and Ecological Risk Assessment*, **3** (3), 351-362.

Abstract: It is unknown whether inorganic arsenic in drinking water concentrations at the current maximum contaminant level of 50 µg/l poses a cancer risk in the United States. Data from two large epidemiological studies of cancer and arsenic in drinking water in Taiwan indicate a dose-response relationship, but the magnitude of risk at low concentrations is highly uncertain. Four sources of uncertainty are described: model choice, data aggregation, intra-village variability of arsenic in well water, arsenic intake from food. New data from an appropriately designed epidemiological study are needed to improve dose-response assessment.

Keywords: Arsenic, Skin Cancer, Drinking Water, Taiwan, Well Water, Blackfoot Disease, Taiwan

? North, D.W. (1998), Risk assessment using the Taiwan data base: The need for further research. *Human and Ecological Risk Assessment*, **4** (5), 1051-1060.

Keywords: Drinking-Water, Cancer

? Brown, K.G., Kuo, T.L., Guo, H.R., Ryan, L.M. and Abernathy, C.O. (2000), Sensitivity analysis of US EPA’s estimates of skin cancer risk from inorganic arsenic in drinking water. *Human and Ecological Risk Assessment*, **6** (6), 1055-1074.

Abstract: The current U.S. Environmental Protection Agency’s (USEPA’s) risk analysis on the Integrated Risk Information System (IRIS) for arsenic in drinking water is based on an epidemiological study of skill cancer in Taiwan. Assumptions used in the USEPA application of the multistage-Weibull model for risk estimation were varied to assess the effect on predicted risk of skin cancer to die U.S. population at arsenic concentrations of 1 to 50 µg/L in drinking water. Among the assumptions tested, die only notable change in risk estimates was a reduction when the arsenic concentration used as representative for Taiwan villages in the low range (<300 µg/L) was increased to the 75th percentile (245 µg/L) in place of the mean used in the USEPA analysis (170 µg/L), but the representative value for Taiwan villages in the high range (greater than or equal to 600 µg/L) was not increased simultaneously to the 75th percentile. Additionally, a simulation study was conducted using records of arsenic measurements in wells from the same period and region of Taiwan as the original study. The exposure-response curve estimated from 60 villages (60 data points) differed only marginally from the outcome when data were summarized into four data points (as in the USEPA skin cancer analysis). Briefly discussed are differences between the study area of Taiwan and the U.S, in nutritional status and consumption of inorganic arsenic in food that might bias predicted U.S. skin cancer risks.

Keywords: Arsenic, Skin Cancer, Drinking Water, Taiwan, Districts

? Breton, R.L., Teed, R.S. and Moore, D.R.J. (2003), An ecological risk assessment of phenol in the aquatic environment. *Human and Ecological Risk Assessment*, **9** (2), 549-568.

Full Text: 2003\Hum Eco Ris Ass9, 549.pdf

Abstract: A probabilistic ecological risk assessment of phenol was undertaken to determine the risks posed to biota as a result of phenol release to the Canadian environment. A three-tiered approach was used to estimate risks, with progressively more realistic assumptions being applied at each tier. In Canada, the major sources of phenol are municipal wastewater treatment plants, pulp, paper and wood products mills, steel and metal products facilities and refineries. Thus, the highest exposures will occur in receiving waters near these point sources, primarily due to the short half-life of phenol in the aquatic environment. Sensitive aquatic organisms include salmonids (e.g., rainbow trout Oncorhynchus mykiss) and amphibians (e.g., leopard frog Rana pipiens). The results of the risk assessment indicate that species are exposed to elevated levels of phenol near point sources, but these levels represent only a minor risk to aquatic biota.

Keywords: Phenol, Probabilistic Ecological Risk Assessment, Aquatic Biota, Tiered Approach, Effluents, Acute Toxicity, Chlorophenols, Temperature, Chemicals, Organisms, Accumulation, Sensitivity, Components, Exposure, Growth

? Mao, N., Wang, M.H. and Ho, Y.S. (2010), A bibliometric study of the trend in articles related to risk assessment published in Science Citation Index. *Human and Ecological Risk Assessment*, **16** (4), 801-824.

Full Text: [2010\Hum Eco Ris Ass16, 801.pdf](2010/Hum%20Eco%20Ris%20Ass16,%20801.pdf); [2010\Hum Eco Ris Ass-Mao.pdf](2010/Hum%20Eco%20Ris%20Ass-Mao.pdf)

Abstract: In this study, a bibliometric method was used to evaluate the global scientific production of risk assessment research for the last 16 years and provide insights into the characteristics of the risk assessment research activities and tendencies that may exist in the papers. Data were obtained on the online version of SCI, Web of Science from 1992 to 2007. Two important respects of the paper characteristics were analyzed: (i) performance of publication and (ii) research tendency and hotspots. The main results were as follows: English-language articles took the majority of all the publications. Number of articles in this field increased from 1 in 1968 to 1037 in 2007. Human and Ecological Risk Assessment published the most papers in this field, taking 3% of all. Research tendency was investigated by statistically analyzing the distribution of paper title, author keyword, and keyword plus. Furthermore, a new method named oword cluster analysiso was successfully applied to find the research hotspots of this field. Research hotspots of risk assessment mainly focused on three subject categories: environmental science, ecology, and epidemiology. This new bibliometric method can help relevant researchers realize the panorama of global risk assessment research, and establish the further research direction.

Keywords: Assessment, Bibliometric, Cancer, Carcinogenesis, Citation, Diskette, Ecology, Environment, Exposure, h-Index, Plus, Publication, Publications, Red Book, Research, Research Hotspots, Risk Assessment, SCI, Scientometrics, Sediments, Toxicity, Trend, Word Cluster Analysis

# Title: Human Factors

Full Journal Title: Human Factors

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories

Impact Factor

? Lee, J.D., Cassano-Pinche, A. and Vicente, K.J. (2005), Bibliometric analysis of Human Factors (1970-2000): A quantitative description of scientific impact. *Human Factors*, **47** (4), 753-766.

Abstract: Bibliometric analyses use the citation history of scientific articles as data to measure scientific impact. This paper describes a bibliometric analysis of the 1682 papers and 2413 authors published in Human Factors from 1970 to 2000. The results show that Human Factors has substantial relative scientific influence, as measured by impact, immediacy, and half-life, exceeding the influence of comparable journals. Like other scientific disciplines, human factors research is a highly stratified activity. Most authors have published only one paper, and many papers are cited infrequently, if ever. A small number of authors account for a disproportionately large number of the papers published and citations received. However, the degree of stratification is not as extreme as in many other disciplines, possibly reflecting the diversity of the human factors discipline. A consistent trend of more authors per paper parallels a similar trend in other fields and may reflect the increasingly interdisciplinary nature of human factors research and a trend toward addressing human-technology interaction in more complex systems. Ten of the most influential papers from each of the last 3 decades illustrate trends in human factors research. Actual or potential applications of this research include considerations for the publication and distribution policy of Human Factors.

Keywords: Activity, Analysis, Applications, Attention, Bibliometric, Bibliometric Analysis, Citation Analysis, Citations, Compatibility, Complex, Creative Productivity, Distribution, Diversity, Dynamic-Systems, Half-Life, History, Human, Human Factors, Impact, Interaction, Interdisciplinary, Mental Workload, Model, Paper, Policy, Publication, Research, Situation Awareness, Skills, Stratification, Task-Performance, Trend, Trends

# Title: Human Factors and Ergonomics in Manufacturing & Service Industries

Full Journal Title: Human Factors and Ergonomics in Manufacturing & Service Industries

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Smith, D.R. (2010), Citation analysis and bibliometric research in the field of ergonomics. *Human Factors and Ergonomics in Manufacturing & Service Industries*, **20** (3), 202-210.

Abstract: Given that journal impact factors now represent such a “hot” topic in the modern scientific world, it is essential that ergonomists remain fully cognizant of the citation-based research that has been conducted in our field. This article reviews and examines bibliometric research in the ergonomics profession, ranging from seminal work on content analysis and citation indexing, to some of the latest research describing ergonomics journal lists and longitudinal impact factor trends. Overall, history has shown how citation-based studies have become increasingly common in the ergonomics field during the past few decades, and, as we move through the 21st century, ergonomics journals continue to mature as a result. (C) 2010 Wiley Periodicals, Inc.

Keywords: Bibliometric, Bibliometric Research, Bibliometrics, Citation, Citation Analysis, Content Analysis, Ergonomics, Factor Trends, Field, Health, History, Human Factors, Impact, Impact Factor, Impact Factors, Journal, Journal Impact, Journal Impact Factor, Journals, Medical Journals, Occupational-Medicine, Publishing, Reflections, Research, Science, Scientific Journals, Society, Topic, Trends

# Title: Human Organization

Full Journal Title: Human Organization

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Martin, D.E., Rao, A. and Sloan, L.R. (2011), Ethnicity, acculturation, and plagiarism: A criterion study of unethical academic conduct. *Human Organization*, **70** (1), 88-96.

Abstract: Ethics have received increased attention from the media and academia in recent years. Most reports suggest that one form of unethical conduct-plagiarism-is on the rise in the business schools. Stereotypes of Asian students as being more prone to plagiarize are frequently found in the literature, though not concretely substantiated. This study used a behavioral criterion to examine the relationships among ethnicity, acculturation, and plagiarism in a sample of 158 undergraduate and graduate students. Significant differences in plagiarism behavior were found based on level of student acculturation, but not ethnicity. Considerations and implications for training and managing international students and workers are discussed.

Keywords: Acculturation, Attitudes, Criterion Study, Cultural-Values, Ethics, Ethnicity, Literature, Plagiarism, Students

# Title: Human Psychopharmacology-Clinical and Experimental

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Subject Categories:

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? Dundar, Y., Dodd, S., Strobl, J., Boland, A., Dickson, R. and Walley, T. (2004), Comparative efficacy of newer hypnotic drugs for the short-term management of insomnia: A systematic review and meta-analysis. *Human Psychopharmacology-Clinical and Experimental*, **19** (5), 305-322.

Abstract: Objectives To compare the clinical effectiveness of zaleplon, zolpidem or zopiclone (Z-drugs) with either benzodiazepines licensed and approved for use in the UK for the short-term management of insomnia (diazepam, loprazolam, lorazepam, lormetazepam, nitrazepam, temazepam) or with each other. Methods MEDLINE, EMBASE, PsycINFO, Science Citation Index/Web of Science were searched from 1966 to March 2003 and The Cochrane Library, reference lists of included studies and a number of psychopharmacology journals. Randomized controlled trials comparing either benzodiazepines with the Z-drugs or any two of the Z-drugs in patients with insomnia were included. Outcome measures included: sleep onset latency, total sleep duration, number of awakenings, quality of sleep, adverse events, tolerance, rebound insomnia and daytime alertness. Results and conclusions Twenty four eligible studies were identified with a total study population of 3909 (17 studies comparing a Z-drug with a benzodiazepine and 7 comparing a Z-drug). Insufficient or inappropriately reported data meant that meta-analysis was possible only for a small number of outcomes. There are few clear, consistent differences between the drugs. Some evidence suggests that zaleplon gives shorter sleep latency but shorter duration of sleep than zolpidem, reflecting the pharmacological profiles of the drugs. Copyright (C) 2004 John Wiley Sons, Ltd.

Keywords: Behavior, Citation, Clinical Effectiveness, Cochrane, Copyright, Double-Blind, Effectiveness, Efficacy, Elderly-Patients, Embase, Health Technology Assessment, Insomnia, Journals, Management, Medline, Meta-Analysis, Methods, Nitrazepam, Outcomes, Randomized Controlled Trials, Review, Science, Sleep, Sleep Disorders, Systematic, Systematic Review, Temazepam, Tolerance, UK, Zaleplon, Zolpidem, Zopiclone

? LaPorte, E., Sarris, J., Stough, C. and Scholey, A. (2011), Neurocognitive effects of kava (Piper methysticum): A systematic review. *Human Psychopharmacology-Clinical and Experimental*, **26** (2), 102-111.

Abstract: Rationale Kava (Piper methysticum) elicits dose-dependent psychotropic effects and thus may potentially deleteriously affect cognitive performance. Clinical trials have assessed the effects of kava on cognition, however, to our knowledge no systematic review has been conducted in this area. Objective To systematically review the effects of kava on cognition, providing an analysis of the individual study’s methodological quality, results and effect sizes. Methods A systematic review was conducted of publications up to June 15th 2010, using the electronic databases MEDLINE, PsychINFO, CINAHL, Web of Science and The Cochrane Library. The search criteria involved kava and cognition related terms, e.g. memory and attention. Results Ten human clinical trials met inclusion criteria (acute n = 7, chronic n = 3). One acute study found that kava significantly improved visual attention and working memory processes while another found that kava increased body sway. One chronic study found that kava significantly impaired visual attention during high-cognitive demand. Potential enhanced cognition may be attributed to the ability of kava to inhibit re-uptake of noradrenaline in the pre-frontal cortex, while increased body sway may be due to GABA pathway modulation. Conclusions The majority of evidence suggests that kava has no replicated significant negative effects on cognition. Copyright (C) 2011 John Wiley & Sons, Ltd.

Keywords: Adverse Effects, Analysis, Anxiety, Anxiety Disorders, Attention, Clinical Trials, Cochrane, Cognition, Cognitive Performance, Copyright, Databases, Driving, Event-Related Potentials, Extract, Human, Impairment, Inhibition, Intoxication, Kava, Kavalactones, Kavalactones, Knowledge, Medline, Memory, Methods, Noradrenaline, Oxazepam, Piper Methysticum, Prefrontal Cortex, Publications, Review, Science, Systematic, Systematic Review, Toxicity, Web of Science

# Title: Human Resources for Health

Full Journal Title: [Human Resources for Health](http://www.human-resources-health.com/articles/browse.asp)

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? Evers, J.L.H. (2000), Publication bias in reproductive research. *Human Reproduction*, **15** (10), 2063-2066.

Full Text: [2000\Hum Rep15, 2063.pdf](2000/Hum%20Rep15,%202063.pdf)

Abstract: Publication bias is defined as any tendency on the part of investigators or editors to fail to publish study results on the basis of the direction or strength of the findings. This may lead to overestimation of treatment effects in published work. Inappropriate decisions about patient management may result. We investigated what proportion of abstracts at the European Society of Human Reproduction and Embryology (ESHRE) annual meeting eventually reached full publication, what was the time to publication, and which factors might have affected publication. Among the 2691 abstracts of six ESHRE annual meetings, 151 (5.6%) reporting randomized controlled trials (RCT) were identified. Comprehensive searches of electronic databases and handsearching of the two major journals in the field yielded 79 full publications pertaining to these abstracts. Kaplan-Meier analysis estimated 56% of RCT abstracts to be eventually published in full, the median time to publication being 32.5 months. Positive outcome (i,e, significant results) did not affect the publication rate, and neither did sample size, the subject category, or the native language (English/non-English) of the country of origin. Oral presentations resulted in eventual full publication significantly more frequently (69%) than posters (42%), It is concluded that a considerable publication deficit, but not a publication bias, exists for RCT in reproductive research.

Keywords: Abstract Follow-Up, Abstract Publication, Abstracts, Author, Bias, Databases, Eshre Annual Meeting, Human, Journals, Publication, Publication Bias, Publication Deficit, Publications, Randomized Controlled Trials, Research, Subject Category, Trials

? Bedaiwy, M.A., El-Nashar, S.A., El Saman, A.M., Evers, J.L.H., Sandadi, S., Desai, N. and Falcone, T. (2008), Reproductive outcome after transplantation of ovarian tissue: A systematic review. *Human Reproduction*, **23** (12), 2709-2717.

Full Text: 2008\Hum Rep23, 2709.pdf

Abstract: Despite interest in ovarian tissue transplantation (OTT) as a promising procedure for fertility preservation, to date, no precise data are available about its effectiveness. We systematically reviewed reproductive function after OTT for fertility preservation in women at high risk of premature ovarian failure (POF). We searched the MEDLINE, EMBASE, Cochrane Systematic Reviews, CENTRAL, Web of Science and Scopus databases for studies on the reproductive outcomes after OTT in humans up to June 2007. Women with follicle-stimulating hormone (FSH) > 30 IU/l at the time of OTT were included in a meta-analysis of individual-patient data to evaluate the time to re-establishment of ovarian function (ROF). Secondary outcomes included short-term (< 12 months) and long-term (> 12 months) ovarian function (OVF) and pregnancy after OTT. We identified 25 reports including 46 unique cases. OTT was performed to treat POF in 27 women, to prevent POF in 15, to treat infertility in 2 and accidentally in 1. In 23 women with FSH > 30 at the time of OTT, OVF was re-established with a median time to ROF of 120 days (range 60-244). Within 6 months after ROF, four women had recurrent ovarian failure. There are insufficient data to evaluate the long-term OVF (> 12 months). Fresh grafts had an increased likelihood of return of OVF and a decreased likelihood for recurrent ovarian failure compared with cryopreserved grafts [HR of 2.44 (95% CI 0.92, 6.49) and 0.47 (95% CI 0.18, 1.12), respectively]. In 25 women who sought pregnancy, eight women had nine pregnancies at 12 months, giving a cumulative pregnancy rate of 37% (95% CI 19, 60). Transplantation of ovarian tissue can re-establish OVF after POF; however, the efficacy of OTT using cryopreserved tissues is not yet equivalent to that of fresh grafts. A controlled multicenter trial with sufficient follow-up would provide valid evidence of the potential benefit of this procedure.

Keywords: Autologous Transplantation, Bone-Marrow-Transplantation, Cancer, Cochrane, Cortical Strips, Cryopreservation, Databases, Effectiveness, Efficacy, Embase, Follow-Up, Heterotopic Autotransplantation, Humans, Intact Human Ovary, Interest, Medline, Meta-Analysis, Monozygotic Twins Discordant, Oocyte Retrieval, Outcome, Outcomes, Pregnancy, Review, Risk, Science, Scopus, Systematic, Systematic Review, Vascular Pedicle, Web of Science, Women

? Sunkara, S.K., Khairy, M., El-Toukhy, T., Khalaf, Y. and Coomarasamy, A. (2010), The effect of intramural fibroids without uterine cavity involvement on the outcome of IVF treatment: A systematic review and meta-analysis. *Human Reproduction*, **25** (2), 418-429.

Full Text: 2008\Hum Rep25, 418.pdf

Abstract: The influence of fibroids on fertility is poorly understood. Submucosal and intramural fibroids that distort the endometrial cavity have been associated with decreased pregnancy rates (PRs) following IVF treatment. However, there is uncertainty about the effect of intramural fibroids that do not distort the endometrial cavity on IVF outcomes. We conducted a systematic review and meta-analysis of studies to evaluate the association between non-cavity-distorting intramural fibroids and IVF outcome. Searches were conducted on MEDLINE, EMBASE, Cochrane Library and Web of Science. Study selection and data extraction were conducted independently by two reviewers. The Newcastle-Ottawa Quality Assessment Scales were used for quality assessment. Meta-analysis was performed if appropriate. We identified 19 observational studies comprising 6087 IVF cycles. Meta-analysis of these studies showed a significant decrease in the live birth (RR = 0.79, 95% CI: 0.70-0.88, P < 0.0001) and clinical PRs (RR = 0.85, 95% CI: 0.77-0.94, P = 0.002) in women with non-cavity-distorting intramural fibroids compared with those without fibroids, following IVF treatment. The presence of non-cavity-distorting intramural fibroids is associated with adverse pregnancy outcomes in women undergoing IVF treatment.

Keywords: Assessment, Assisted Conception, Cochrane, Embase, Endometrial Cavity, Fertility, Hysteroscopic Myomectomy, Impact, In-Vitro Fertilization, Intramural Fibroids, Involvement, Ivf, Leiomyomas, Medline, Meta Analysis, Meta-Analysis, Myomas, Observational Studies, Outcome, Outcomes, Pregnancy, Quality, Reproduction, Review, Science, Subserosal, Systematic, Systematic Review, Treatment, Web of Science, Women

? Sunkara, S.K., Siozos, A., Bolton, V.N., Khalaf, Y., Braude, P.R. and El-Toukhy, T. (2010), The influence of delayed blastocyst formation on the outcome of frozen-thawed blastocyst transfer: A systematic review and meta-analysis. *Human Reproduction*, **25** (8), 1906-1915.

Full Text: 2010\Hum Rep25, 1906.pdf

Abstract: There are conflicting results on whether the rate of blastocyst development before freezing influences the outcome of frozen-thawed blastocyst transfers. We conducted a systematic review and meta-analysis of controlled studies to compare pregnancy outcomes following transfer of thawed blastocysts that were frozen either on Day 5 or Day 6 following fertilization in vitro. Searches were conducted on MEDLINE, EMBASE, Cochrane Library and Web of Science. Study selection and data extraction were conducted independently by two reviewers. The Newcastle-Ottawa Quality Assessment Scale was used for quality assessment. We identified 15 controlled studies comprising 2502 frozen-thawed transfers involving blastocysts that were either frozen on Day 5 or Day 6. Meta-analysis of these studies showed significantly higher clinical pregnancy rate [relative risk (RR) = 1.14, 95% confidence interval (CI): 1.03-1.26, P = 0.01] and ongoing pregnancy/live birth rate (RR = 1.15, 95% CI: 1.01-1.30, P = 0.03) with Day 5 compared with Day 6 frozen-thawed blastocyst transfers. Sensitivity analysis of those studies where blastocysts frozen on Day 5 or Day 6 were at the same stage of development showed no significant difference in the clinical pregnancy rate (RR = 1.07, 95% CI: 0.87-1.33, P = 0.51) and ongoing pregnancy/live birth rate (RR = 1.08, 95% CI: 0.92-1.27, P = 0.36). Slower developing blastocysts cryopreserved on Day 6 but at the same stage of development as those developing to the blastocyst stage on Day 5 have similar clinical pregnancy and ongoing pregnancy/live birth rates following frozen-thawed blastocyst transfers.

Keywords: Analysis, Assessment, Blastocysts, Cochrane, Controlled Studies, Cryopreservation, Cryopreservation, Cycles, Day-6 Blastocysts, Development, Embase, Embryo Transfers, Frozen-Thawed Blastocyst Transfer, In-Vitro Fertilization, Medline, Meta Analysis, Meta-Analysis, Outcome, Outcomes, Pregnancy, Pregnancy Rates, Quality, Review, Risk, Scale, Science, Systematic, Systematic Review, Trials, Vitrification, Web of Science

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? AbdelHafez, F., Bedaiwy, M., El-Nashar, S.A., Sabanegh, E. and Desai, N. (2009), Techniques for cryopreservation of individual or small numbers of human spermatozoa: A systematic review. *Human Reproduction Update*, **15** (2), 153-164.

Full Text: [2009\Hum Rep Upd15, 153.pdf](2009/Hum%20Rep%20Upd15,%20153.pdf)

Abstract: Despite interest in cryopreservation of individual or small number of human spermatozoa, to date, little data is available as regards its effectiveness. We systematically reviewed the outcome after cryopreservation of individual or small numbers of human spermatozoa in patients with severe male factor of infertility. We searched the MEDLINE, EMBASE, Cochrane Systematic Reviews, CENTRAL, Web of Science, Scopus databases for relevant studies up to June of 2008. The search used terms referring to cryopreservation of small amount of sperm. Included studies were limited to human studies with no language restrictions. We identified 30 reports including 9 carriers used for cryopreservation of small quantities/numbers of human spermatozoa (7 non-biological and 2 biological carriers). A wide variety of cryopreservation vehicles were reported. The recovery rate of spermatozoa cryopreserved in a known small number varied widely from 59 to 100%. Fertilization rates were in the range of 18-67%. Frozen-thawed spermatozoa, using this method, were subsequently used for intracytoplasmic sperm injection in only five studies, with few pregnancies reported so far. To date, there remains no consensus as to the ideal carrier for cryopreservation of small number of spermatozoa for clinical purposes. Cryopreservation of individual or small numbers of human spermatozoa may replace the need for repeated surgical sperm retrieval. A controlled multicenter trial with sufficient follow-up would provide valid evidence of the potential benefit of this approach.

Keywords: Aspiration, Cochrane, Cryoloop, Cryopreservation, Cryoprotectant-Free Vitrification, Databases, Dna Integrity, Effectiveness, Embase, Empty Zona-Pellucida, Epidydimal Sperm, Fertilization, Follow-Up, Human, Human Testicular Spermatozoa, Interest, Intracytoplasmic Sperm Injection, Medline, Nonobstructive Azoospermia, Obstructive Azoospermia, Outcome, Review, Science, Scopus, Single Human Spermatozoa, Single-Sperm Cryopreservation, Surgical, Systematic, Systematic Review, Testicular Sperm, Web of Science, Zona Carrier

? Karasu, T., Marczylo, T.H., Maccarrone, M. and Konje, J.C. (2011), The role of sex steroid hormones, cytokines and the endocannabinoid system in female fertility. *Human Reproduction Update*, **17** (3), 347-361.

Full Text: [2011\Hum Rep Upd17, 347.pdf](2011/Hum%20Rep%20Upd17,%20347.pdf)

Abstract: BACKGROUND: Marijuana, the most used recreational drug, has been shown to have adverse effects on human reproduction. Endogenous cannabinoids (also called endocannabinoids) bind to the same receptors as those of Delta(9)-tetrahydrocannabinol (THC), the psychoactive component of Cannabis sativa. The most extensively studied endocannabinoids are anandamide (N-arachidonoylethanolamine, AEA) and 2-arachidonoylglycerol. The endocannabinoids, their congeners and the cannabinoid receptors, together with the metabolic enzymes and putative transporters form the endocannabinoid system (ECS). In this review, we summarize current knowledge about the relationships of ECS, sex steroid hormones and cytokines in female fertility, and underline the importance of this endocannabinoid-hormone-cytokine network. METHODS: PUBMED and the Web of Science databases were searched for studies published since 1985, looking into the ECS, sex hormones, type-1/2 T-helper (Th1/Th2) cytokines, leukaemia inhibitory factor, leptin and reproduction. RESULTS: The ECS plays a pivotal role in human reproduction. The enzymes involved in the synthesis and degradation of endocannabinoids normalize levels of AEA for successful implantation. The AEA degrading enzyme (fatty acid amide hydrolase) activity as well as AEA content in blood may potentially be used for the monitoring of early pregnancies. Progesterone and oestrogen are involved in the maintenance of endocannabinoid levels. The ECS plays an important role in the immune regulation of human fertility. CONCLUSIONS: The available studies suggest that tight control of the endocannabinoid-hormone-cytokine network is required for successful implantation and early pregnancy maintenance. This hormone-cytokine network is a key element at the maternal-foetal interface, and any defect in such a network may result in foetal loss.

Keywords: Acid Amide Hydrolase, Adverse Effects, Assisted Reproduction Treatment, Blood, Cannabinoid-Receptor Ligands, Cannabis, Central-Nervous-System, Control, Databases, Drug, Endocannabinoids, Female Fertility, Human, Human Fallopian-Tube, Knowledge, Leptin, Leukaemia Inhibitory Factor, Leukemia-Inhibitory Factor, Monitoring, N-Arachidonoylethanolamine Anandamide, Oestrogen, Pregnancy, Preimplantation Mouse Embryo, Protein-Coupled Receptor, Reproduction, Review, Science, Sex Hormones, Sperm-Oviduct Interaction, Web of Science

? Teerds, K.J., de Rooij, D.G. and Keijer, J. (2011), Functional relationship between obesity and male reproduction: From humans to animal models. *Human Reproduction Update*, **17** (5), 667-683.

Full Text: [2011\Hum Rep Upd17, 667.pdf](2011/Hum%20Rep%20Upd17,%20667.pdf)

Abstract: BACKGROUND: The increase in the incidence of obesity has a substantial societal health impact. Contrasting reports have been published on whether overweight and obesity affect male fertility. To clarify this, we have reviewed published data on the relation between overweight/obesity, semen parameters, endocrine status and human male fertility. Subsequently, we have used results obtained in animal models of obesity to explain the human data. METHODS: Pubmed, Scopus, Web of Science and Google Scholar databases were searched between September 2009 and October 2010 for a comprehensive publication record. Available studies on adult human males were examined. The included animal studies examined obesity and fertility, and focused on leptin, leptin receptor signaling, kisspeptins and/or NPY. RESULTS: Most overweight/obese men do not experience significant fertility problems, despite the presence of reduced testosterone alongside normal gonadotrophin levels. Only a subgroup of subjects suffers from hypogonadotropic hypogonadism. Animal models offer several explanations and show that reduced leptin signaling leads to reduced GnRH neuronal activity. This may be due to decreased hypothalamic Kissl expression, a potent regulator of GnRH/LH/FSH release. As the Kissl neurons express leptin receptors, the Kissl system may participate in transmitting metabolic information to the GnRH neurons, thus providing a bridge between metabolic regulation and fertility. CONCLUSIONS: Infertility in overweight/obese males may be explained by leptin insensitivity. This implies a possible role for the KISSl system in human obesity-related male infertility. If substantiated, it will pave the way for methods to restore fertility in these subjects.

Keywords: Adult, Animal, Animal Models, Body-Mass Index, Congenital Leptin Deficiency, Databases, Early-Onset Obesity, Endocrine Status, Google Scholar, Health Impact, Hormone-Binding-Globulin, Human, Human Male Fertility, Humans, Hypothalamic Neuropeptide-Y, Impact, Incidence, Infertile Male-Patients, Information, Inhibin-B Levels, Kiss-1 Messenger-RNA, Leptin, Male, Men, Normal, NPY, Obesity, Overweight, Pituitary-Testicular Axis, Publication, Reproduction, Science, Scopus, Semen Parameters, Semen Quality, Testosterone, Web of Science

? Chan, Y.Y., Jayaprakasan, K., Zamora, J., Thornton, J.G., Raine-Fenning, N. and Coomarasamy, A. (2011), The prevalence of congenital uterine anomalies in unselected and high-risk populations: A systematic review. *Human Reproduction Update*, **17** (6), 761-771.

Full Text: [2011\Hum Rep Upd17, 761.pdf](2011/Hum%20Rep%20Upd17,%20761.pdf)

Abstract: BACKGROUND: The prevalence of congenital uterine anomalies in high-risk women is unclear, as several different diagnostic approaches have been applied to different groups of patients. This review aims to evaluate the prevalence of such anomalies in unselected populations and in women with infertility, including those undergoing IVF treatment, women with a history of miscarriage, women with infertility and recurrent miscarriage combined, and women with a history of preterm delivery. METHODS: Searches of MEDLINE, EMBASE, Web of Science and the Cochrane register were performed. Study selection and data extraction were conducted independently by two reviewers. Studies were grouped into those that used ‘optimal’ and ‘suboptimal’ tests for uterine anomalies. Meta-analyses were performed to establish the prevalence of uterine anomalies and their subtypes within the various populations. RESULTS: We identified 94 observational studies comprising 89 861 women. The prevalence of uterine anomalies diagnosed by optimal tests was 5.5% [95% confidence interval (CI), 3.5-8.5] in the unselected population, 8.0% (95% CI, 5.3-12) in infertile women, 13.3% (95% CI, 8.9-20.0) in those with a history of miscarriage and 24.5% (95% CI, 18.3-32.8) in those with miscarriage and infertility. Arcuate uterus is most common in the unselected population (3.9%; 95% CI, 2.1-7.1), and its prevalence is not increased in high-risk groups. In contrast, septate uterus is the most common anomaly in high-risk populations. CONCLUSIONS: Women with a history of miscarriage or miscarriage and infertility have higher prevalence of congenital uterine anomalies compared with the unselected population.

Keywords: 3-Dimensional Ultrasound, Artery Blood-Flow, Cochrane, Congenital Uterine Anomalies, Embase, Fertilization-Embryo Transfer, High-Risk Groups, History, Hysterosalpingo-Contrast-Sonography, In-Vitro Fertilization, Infertile Women, Infertility, IVF, Medline, Miscarriage, Mullerian Duct Anomalies, Observational, Observational Studies, Patients, Preterm, Prevalence, Recurrent Spontaneous-Abortion, Reproductive-Performance, Review, Science, Septate Uterus, Systematic, Systematic Review, Treatment, Uterus, Web of Science, Women

# Title: Human Resources for Health

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? Dogba, M. and Fournier, P. (2009), Human resources and the quality of emergency obstetric care in developing countries: A systematic review of the literature. *Human Resources for Health*, **7**, Article Number: 7.

Full Text: 2009\Hum Res Hea7, 7.pdf

Abstract: Background: This paper reports on a systematic literature review exploring the importance of human resources in the quality of emergency obstetric care and thus in the reduction of maternal deaths. Methods: A systematic search of two electronic databases (ISI Web of Science and MEDLINE) was conducted, based on the following key words “quality obstetric\* care” OR “pregnancy complications OR emergency obstetric\* care OR maternal mortality” and “quality health care OR quality care” and “developing countries. Relevant papers were analysed according to three customary components of emergency obstetric care: structure, process and results. Results: This review leads to three main conclusions: (1) staff shortages are a major obstacle to providing good quality EmOC; (2) women are often dissatisfied with the care they receive during childbirth; and (3) the technical quality of EmOC has not been adequately studied. The first two conclusions provide lessons to consider when formulating EmOC policies, while the third point is an area where more knowledge is needed.

Keywords: Assess Needs, Availability, Bangladesh, Databases, Developing Countries, Health Care, Health Systems, Hospitals, Human, ISI, Knowledge, Literature, Literature Review, Medline, Methods, Nigeria, Papers, Policies, Program Note, Reducing Maternal Mortality, Review, Science, Services, Systematic, Systematic Literature Review, Systematic Review, Un Process Indicators, Web of Science, Women

? Callaghan, M., Ford, N. and Schneider, H. (2010), A systematic review of task- shifting for HIV treatment and care in Africa. *Human Resources for Health*, **8**, Article Number: 8.

Full Text: [2010\Hum Res Hea8, 8.pdf](2010/Hum%20Res%20Hea8,%208.pdf)

Abstract: Background: Shortages of human resources for health (HRH) have severely hampered the rollout of antiretroviral therapy (ART) in sub-Saharan Africa. Current rollout models are hospital-and physician-intensive. Task shifting, or delegating tasks performed by physicians to staff with lower-level qualifications, is considered a means of expanding rollout in resource-poor or HRH-limited settings. Methods: We conducted a systematic literature review. Medline, the Cochrane library, the Social Science Citation Index, and the South African National Health Research Database were searched with the following terms: task shift\*, balance of care, non-physician clinicians, substitute health care worker, community care givers, primary healthcare teams, cadres, and nurs\* HIV. We mined bibliographies and corresponded with authors for further results. Grey literature was searched online, and conference proceedings searched for abstracts. Results: We found 2960 articles, of which 84 were included in the core review. 51 reported outcomes, including research from 10 countries in sub-Saharan Africa. The most common intervention studied was the delegation of tasks (especially initiating and monitoring HAART) from doctors to nurses and other non-physician clinicians. Five studies showed increased access to HAART through expanded clinical capacity; two concluded task shifting is cost effective; 9 showed staff equal or better quality of care; studies on non-physician clinician agreement with physician decisions was mixed, with the majority showing good agreement. Conclusions: Task shifting is an effective strategy for addressing shortages of HRH in HIV treatment and care. Task shifting offers high-quality, cost-effective care to more patients than a physician-centered model. The main challenges to implementation include adequate and sustainable training, support and pay for staff in new roles, the integration of new members into healthcare teams, and the compliance of regulatory bodies. Task shifting should be considered for careful implementation where HRH shortages threaten rollout programmes.

Keywords: Africa, Antiretroviral Treatment, Articles, Bibliographies, Capacity, Citation, Community-Health Workers, Core, Database, Grey Literature, Health, Health Care, HIV, Human, Integration, Intervention, Literature, Literature Review, Medline, Model, Models, Monitoring, Nonphysician Clinician, Outcomes, Physician, Primary, Prospective Cohort, Research, Review, Scaling-up, Science, Science Citation Index, Social Science Citation Index, South-Africa, Sub-Saharan Africa, Support, Systematic Review, Task, Therapy, Training, Treatment, Uganda, Zambia

# Title: Human Resources Management in the Knowledge Economy Era

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: Impact Factor

? Sun, M. and Bao, Y.Z. (2009), Bibliometric study on dissemination of management fashions in China. *Human Resources Management in the Knowledge Economy Era,* **1-2**, 124-130.

Abstract: This paper conducts a bibliometric research on dissemination of management fashions in China. The study develops and tests three hypotheses in terms of structure of management fashions’ consumers and the dissemination, motive of management fashions’ demands and the dissemination and characteristics of the dissemination process. The analysis shows that management fashion’s consumer structures are correlated with its dissemination curve, and the recent popular curve in China is closely bell shaped. Generally, Chinese scholars introduced management techniques into china as triggers and turned them into management fashions, which are characterized by high rationality in the early course of dissemination. The prevalent management fashions in China declined earlier and more rapidly in contrast to western countries. Finally, we come to the conclusions that the above phenomena result from Chinese scholars’ lack of intensive studies on management fashions’ applicability in China, and though management fashions in western countries would become fashionable in China promptly, scholars must avoid blind introduction to promote the development of Chinese management knowledge.

Keywords: Bibliometric, Bibliometric Research, Characteristics, China, Dissemination, Fads, Knowledge, Management Fashion, Management Technique, Research, Techniques

# Title: Human Toxicology

Pallapies, D., Klees, J., Conner, P.R. and Zober, A. (1996), Chemical emergency medical guidelines: Example of responsible care in an international chemical company. *Human Toxicology*, Poster Session 1F, 72-73.

# Title: Human & Experimental Toxicology

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? Calabrese, E.J. and Baldwin, L.A. (2000), The marginalization of hormesis. *Human & Experimental Toxicology*, **19** (1), 32-40.

Abstract: Despite the substantial development and publication of highly reproducible toxicological data, the concept of hormetic dose-response relationships was never integrated into the mainstream of toxicological thought. Review of the historical foundations of the interpretation of the bioassay and assessment of competitive theories of dose-response relationships lead to the conclusion that multiple factors contributed to the marginalization of hormesis during the middle and subsequent decades of the 20th century. These factors include: (a) the close-association of hormesis with homeopathy lead to the hostility of modern medicine toward homeopathy thereby creating a guilt by association framework, and the carry-over influence of that hostility in the judgements of medically-based pharmacologists/toxicologists toward hormesis; (b) the emphasis of high dose effects linked with a lack of appreciation of the significance of the implications of low dose stimulatory effects; (c) the lack of an evolutionary-based mechanism(s) to account for hermetic effects; and (d) the lack of appropriate scientific advocates to counter aggressive and intellectually powerful critics of the hermetic perspective.

Keywords: Hormesis, Low Dose, Stimulation, Beta-Curve, Chemical Hormesis

# Title: Humic and Fulvic Acids ACS Symposium Series

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Publisher: Amer Chemical Soc, Washington

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Subject Categories

Impact Factor

? Gaffney, J.S., Marley, N.A. and Clark, S.B. (1996), Humic and fulvic acids and organic colloidal materials in the environment. *Humic and Fulvic Acids ACS Symposium Series*, **651**, 2-16.

Keywords: Dissociation, Substances, Reduction, Kinetics, Binding

? Gaffney, J.S., Marley, N.A. and Orlandini, K.A. (1996), The use of hollow-fiber ultrafilters for the isolation of natural humic and fulvic acids. *Humic and Fulvic Acids ACS Symposium Series*, **651**, 26-40.

Abstract: Hollow-fiber ultrafiltration can be used to isolate natural humic and fulvic acids from surface and groundwaters for further chemical and physical characterization. Ultrafilters are particularly useful in the approximate sizing of colloidal humic and fulvic acids with effective diameters below 0.45 µm. By first using hollow-fiber filters and then stirred-cell flat ultrafiltration techniques, these naturally occurring organics can be separated into size fractions down to approximately 500 molecular weight. Sufficient material can be obtained by using these size-sampling methods to apply a number of chemical and physical characterization techniques. Examples are presented of size-specific data obtained for fulvic and humic acids with a variety of spectroscopic techniques (e.g., infrared, ultraviolet-visible, C-13 nuclear magnetic resonance, and mass spectroscopy) and pyrolysis gas chromatography. Inorganic trace element analysis and radiochemical characterization of the materials bound to the humic and fulvic size fractions can yield information on the geochemical importance of these natural organics in the migration of low-level wastes.

Keywords: Complexation, Substances, Transport, Mobility, Shallow, Aquifer, Matter, Waters, Soils

? Marley, N.A., Gaffney, J.S. and Orlandini, K.A. (1996), Characterization of aquatic humic and fulvic materials by cylindrical internal reflectance infrared spectroscopy. *Humic and Fulvic Acids ACS Symposium Series*, **651**, 96-107.

Abstract: Cylindrical internal reflectance (CIR) techniques have been applied to humic and fulvic acids that were size fractionated by using hollow-fiber ultrafiltration methods with cutoffs of 0.1 µm and 100,000, 30,000, 10,000, 3,000, and 500 molecular weight. The dissolved organic carbon and major cation contents were compared with the CIR spectra to estimate the active carboxylate units in each size fraction. Comparison of infrared spectra at various pH values for aquatic humics and for model polycarboxylate compounds (polymaleic acid and polyacrylic acid) indicated that the principal metal binding functionalities are carboxylate groups.

Keywords: Diffuse Reflectance, Raman-Spectroscopy, Natural-Waters, Acids, Substances, FT

Butler, G.C. and Ryan, D.K. (1996), Investigation of fulvic acid-Cu2+ complexation by ion-pair reversed-phase high-performance liquid chromatography with post-column fluorescence quenching titration. *Humic and Fulvic Acids ACS Symposium Series*, **651**, 140-150.

Abstract: An ion-pair reversed-phase high performance liquid chromatography (IP-RP-HPLC) separation with post-column addition of Cu2+ and simultaneous UV and fluorescence detection is used to investigate the interactions between Cu2+ and separated fractions of soil and water fulvic acids. In previous steady-state fluorescence experiments, binding characteristics for humic materials have been determined based on fluorescence quenching data from titrating the sample with paramagnetic metal ions. In the present study, the humic material fractions from the IP-RP-HPLC separation are “titrated on-line” with incrementally increasing concentrations of Cu2+ and the extent of quenching of the fluorescence peaks is measured. A titration curve of percent fluorescence vs. metal concentration is plotted for each fraction and the ligand concentrations (C-L) and conditional stability constants (K) are calculated from nonlinear regression of a one-site model applied to the data.

Keywords: Dissolved Organic-Matter, Humic-Acid, HPLC, Parameters, Stability, Waters

Zhang, Y.J., Bryan, N.D., Livens, F.R. and Jones, M.N. (1996), Complexing of metal ions by humic substances. *Humic and Fulvic Acids ACS Symposium Series*, **651**, 194-206.

Abstract: The interaction of metal ions with humic substances is being studied using two different techniques. UV-scanning ultracentrifugation is being used to determine molecular weights and to investigate changes in aggregation brought about by metal ion complexation. The relationship between cation charge and conformation of the humic ligands is being investigated.

The complexation of U by humic substances from soils contaminated by natural processes is also being studied. Gel permeation chromatography has been used to show that different fractions of humic substances vary greatly in their effectiveness as ligands. These studies have also shown that uranium desorption is redistributed slowly between different fractions of humic substances following its initial adsorption.

Keywords: Gel-Permeation Chromatography, Molecular-Weight Distribution, Aquatic Fulvic-Acid, Organic-Matter, Natural-Waters, Copper-Binding, Soil, Complexation, Aggregation, Filtration

# Title: Humic Substances in the Environment

Marcel Dekker, New York

? Schnitzer, M. and Khan, S.U. (1972), *Humic Substances in the Environment*. Marcel Dekker, New York.

# Title: Humic Substances in the Suwanne River, Georgia: Interactions, Properties and Proposed Structure

US Government Printing Office, Washington DC

? Averett, R.C., Leenheer, J.A., McKnight, D.M. and Thorm, K.A. (1994), *Humic Substances in the Suwanne River*, *Georgia: Interactions*, *Properties and Proposed Structure*. US Government Printing Office, Washington DC, 224-233.

# Title: Hungarian Journal of Industrial Chemistry

Full Journal Title: Hungarian Journal of Industrial Chemistry

ISO Abbreviated Title: Hung. J. Ind. Chem.

JCR Abbreviated Title: Hung J Ind Chem

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Publisher: Research Inst Technical Chemistry of Hungarian Acad Sciences

Publisher Address: Editorial Buro Hung J Ind Chem PO Box 125, H-8201 Veszprem, Hungary

Subject Categories:

Chemistry, Applied Chemistry: Impact Factor

Engineering, Chemical: Impact Factor 0.294, 75/110 (1999)

? Sarbak, Z. and Kramer-Wachowiak, M. (1998), Structural, thermal and adsorption properties of chemically modified fly ash. *Hungarian Journal of Industrial Chemistry*, **26** (2), 101-104.

Abstract: Fly ash from the Poznan-Garbary Power Plant was modified with NaOH, NH4HCO3/NaOH, EDTA and HCl solutions. On the basis of X-ray diffraction, infrared spectroscopy and thermal analysis, it was found that chemically modified fly ashes showed crystalline structures similar to that of zeolites. The samples obtained were examined in adsorptive removal of n-butylamine as a model air odorizing compound. Fly ash modified with NaOH and NH4HCO3/NaOH solutions showed the highest adsorption properties.

Keywords: Adsorption, Adsorption Properties, Air, Analysis, Ash, Ashes, Crystalline Structures, EDTA, Fly Ash, HCl, Infrared Spectroscopy, Model, Modified, Properties, Spectroscopy, Thermal Analysis, X-Ray Diffraction

? Ranganathan, K. and Namasivayam, C. (1998), Utilisation of waste Fe(III)/Cr(III) hydroxide for removal of Cr(VI) and Fe(II) by fixed bed system. *Hungarian Journal of Industrial Chemistry*, **26** (3), 169-172.

Abstract: Fe(III)/Cr(III) hydroxide, a waste sludge from fertiliser industry has been used for adsorption of Cr(VI) and Fe(II) from aqueous solution in fixed bed method. Effects of parameters such as initial metal ion concentration and pH were studied at a flow rate of 10 ml/min of the water solution. The breakthrough curves are typical sigmoidal type ones and the results show that increase in metal ion concentration decreases the breakthrough volume. The breakthrough volume is higher at pH 5.0 (500 ml/5g) than at pH 5.7 (100 ml/5g) for Cr(VI) adsorption. The adsorption obeys the Bed Depth Service Time (BDST) model and the adsorption capacity values are presented.

Keywords: Aqueous-Solution, Water, Waste Utilisation, Metal Ions, Adsorption, Fixed Bed System

# Title: Hydrobiologia

Full Journal Title: [Hydrobiologia](http://www.kluweronline.com/issn/0018-8158/contents); [Hydrobiologia](http://www.springerlink.com/content/0018-8158/)

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Issues/Year: 25

Journal Country/Territory: Netherlands

Language: English

Publisher: Kluwer Academic Publ

Publisher Address: Spuiboulevard 50, PO Box 17, 3300 AA Dordrecht, Netherlands

Subject Categories:

Marine & Freshwater Biology:

Salánki, J. and V.-Balogh, K. (1989), Physiological background for using freshwater mussels in monitoring copper and lead pollution. *Hdrobiologia*, **188**, 445-453.

Full Text: [1989\Hydrobiologia188, 445.pdf](1989/Hydrobiologia188,%20445.pdf)

Abstract: In studying the effect of copper (10±0.57 μg Cu l-1 and 100±3.01 μg Cu l-1) and lead (50±1.12 μg Pb l-1 and 500±12.5 μg Pb l-1) on the filtration activity of Anodonta cygnea L. it was found that both heavy metals resulted in significant shortening of the active periods, but little change occurred in the length of the rest periods. The concentrations of copper and lead were measured in the gill, foot, mantle, adductor muscle and kidney for 840 hours of exposure to 10.9±5 μg Cu l-1 and 57.0±19 μg Pb l-1 as well as during subsequent depuration. Uptake was observed after 72 hours of exposure. The highest copper concentration (59.1±16.2 μg Cu l-1) was measured at 672 h in the mantle, and the highest lead value (143±26.1 μg Pb l-1) was obtained in the kidney. Depuration of copper was fastest from the foot, and from the adductor muscle for lead. The gill had the longest half-depuration time (> 840 h for copper and > 672 h for lead).

Keywords: Anodonta Cygnea L., Filtration Activity, Heavy Metal Accumulation, Depuration, Copper, Lead

? Portielje, R. and Lijklema, L. (1993), Sorption of phosphate by sediments as a result of enhanced external loading. *Hydrobiologia*, **253** (1-3), 249-261.

Full Text: [1993\Hydrobiologia253, 249.pdf](1993/Hydrobiologia253,%20249.pdf)

Abstract: In artificial test ditches, originally poor in nutrients, the effects of enhanced external loading with phosphorus were studied. An important term in the mass balance of phosphorus is retention by sediment. Parameters concerning the uptake of phosphorus by the sandy sediment of a ditch have been measured or were obtained from curve-fitting and were used in a mathematical model to describe diffusion into the sediment and subsequent sorption by soil particles. On a time scale of hours uptake of phosphorus from the overlying water by intact sediment cores could be simulated well with a simple diffusion-adsorption model. Mixing of the overlying water resulted in an enhanced uptake rate caused by an increased effective diffusion coefficient in the top layer of the sediment. Laboratory experiments revealed that after a fast initial adsorption, a slow uptake process followed that continued for a period of at least several months. This slow sorption can immobilize a substantial part of the phosphorus added. It may physically be described as an intraparticular diffusion process, in which the adsorbed phosphate penetrates into metaloxides, probably present as sand grain coating, and thereby reaches sorption sites not immediately accessible otherwise. The total sorption capacity of the soil particles is ca. 3.3 times the maximum instantaneous surficial adsorption capacity.

Keywords: Adsorption, Adsorption Capacity, Al-Hydroxide, Aluminum Hydroxides, Balance, Capacity, Coating, Diffusion, Diffusion Coefficient, Diffusion-Coefficients, Dispersion, Intraparticular Diffusion, Iron, Marine-Sediments, Mathematical Model, Model, Phosphate, Phosphorus, Retention, Sediment, Sediments, Soil, Solid-Phase Diffusion, Sorption, Time, Uptake, Water

? Faye, M.S. and Diamond, M.L. (1996), The role of phytoplankton in the removal of arsenic by sedimentation from surface waters. *Hydrobiologia*, **324** (2), 117-123.

Full Text: [1996\Hydrobiologia324, 117.pdf](1996/Hydrobiologia324,%20117.pdf)

Abstract: The role of phytoplankton in the removal of arsenic (As) by particle adsorption and sedimentation was investigated in Moira Lake, Canada. Sampling water and suspended particles over one year illustrated significant variation in As partitioning between particulate and aqueous phases, but failed to establish a correlation between the partition coefficient, Kd, and indicators of phytoplankton biomass. A highly significant inverse logarithmic relationship was noted between Kd and the concentration of suspended particles (log Kd = 5.1-1.4 log SS; p = 0.0001) in an apparent demonstration of the particle concentration effect (O’Connor & Connolly, 1980). Particle deposition, measured by means of sediment traps, appeared to include a substantial component of resuspended surficial sediment making sediment trap results unreliable for quantifying the removal of substances from the water column. The As concentration of particles from deep traps deployed during late summer and early fall exceeded the As concentrations of suspended particles and surficial sediment, and may indicate that a highly contaminated nepheloid layer acts as a temporary sink for As.

Keywords: Arsenic, Sedimentation, Phytoplankton, Partition Coefficient, Particle Concentration Effect, Lake-Ontario, Nepheloid Layer, Organic-Carbon, Resuspension, Bacteria, Superior, Model

? Przybylski, M. (1996), Variation in fish growth characteristics along a river course. *Hydrobiologia*, **325** (1), 39-46.

Full Text: [1996\Hydrobiologia325, 39.pdf](1996/Hydrobiologia325,%2039.pdf)

Abstract: Variation in the growth patterns of roach, Rutilus rutilus (L.), pike, Esox lucius L. and chub, Leuciscus cephalus (L.) was examined along the upper Warta River, where human impact (mostly pollution) has influenced the longitudinal zonation on the fish assemblage. Significant differences were found in the exponent of weight-length relationships for roach and chub populations occupying different zones of the river, but no such variation was observed in pike. Moreover, pike growth was isometric, whereas roach and chub grew allometrically, with regression coefficients (slope) above 3. Although the length-at-age data were similar for each zone, the von Bertalanffy parameters (Linf, K and t0) suggest that there may exist some inter-zone variation in the overall growth patterns of these species. All the species grew better in the zone where the index of relative abundance (relating dominance of a particular species to its maximum abundance in river system) achieved its highest value. The results suggest that a relative abundance index expressed in this way can be a good index of ‘habitat quality’.

? Friedlander, M., Levy, D. and Hornung, H. (1996), The effect of cooling seawater effluents of a power plant on growth rate of cultured *Gracilaria conferta* (Rhodophyta). *Hydrobiologia*, **332** (3), 167-174.

Full Text: [1996\Hydrobiologia332, 167.pdf](1996/Hydrobiologia332,%20167.pdf)

Abstract: The effect of cooling seawater effluents of a power plant on the growth rate of Gracilaria conferta in tanks has been studied, as a possible solution for the decrease in the winter growth rate in ambient seawater tanks. The Gracilaria cultures did not survive more than 2-8 weeks in the power plant effluents during the one-year-long repeated experiments. The major reason was the high accumulation of copper, iron, lead and chromium from the power plant effluents as compared to concentrations in Gracilaria cultured in ambient seawater. The survival increased and the copper accumulation decreased significantly when the effluents were passed through an Ulva biofilter.

? Thomaz, S.M., Michelan, T.S., Carvalho, P. and Bini, L.M. (2010), The influence of “Homage to Santa Rosalia” on aquatic ecology: A scientometric approach. *Hydrobiologia*, **653** (1), 7-13.

Full Text: [2010\Hydrobiologia653, 7.pdf](2010/Hydrobiologia653,%207.pdf)

Abstract: In 1959, G.E. Hutchinson provided a general explanation for the diversity of species in his paper “Homage to Santa Rosalia or why are there so many kinds of animals?” To assess the contribution of the ideas Hutchinson introduced in “The Homage” to aquatic ecology research, we performed a bibliometric evaluation of all the articles that cited this paper between 1960 and 2009. The articles were retrieved using the database from Thomson Reuters (ISI Web of Knowledge) in March 2009. For each paper, we first identified the studied environment (terrestrial, marine or freshwater) and whether the study was theoretical or empirical. For marine and freshwater studies, we recorded the journal where the article was published, the year of publication, the number of citations, the taxonomic group (e.g. fish, phytoplankton, zooplankton, macroinvertebrates or macrophytes), the habitat (e.g. wetlands, lakes, rivers, streams or ocean) and the main ideas addressed. A total of 1345 articles cited “The Homage”, and the number of citations increased significantly with time. Most of the articles that cited “The Homage” described research carried out in a terrestrial environment or were theoretical, and a lesser number of citations came from freshwater and marine papers, which used mainly fish and invertebrates as model organisms. In the aquatic sciences, most of the papers discussed the influences of competition and energy (productivity) on diversity. Our results indicate that “The Homage” can still be considered a “citation classic” and a breakthrough contribution, and that it is still having a great impact on different fields of ecology, including limnology and marine ecology.

Keywords: Biodiversity, Coexistence, Competition, Diversity, Eutrophication, Hutchinson, Impact, Publication, Research, Species-Diversity, Stability, Web

# Title: Hydrocarbon Processing

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Journal Country/Territory: United States

Language: English

Publisher: Gulf Publ Co

Publisher Address: Box 2608, Houston, TX 77252-2608

Subject Categories:

Energy & Fuels: Impact Factor

Engineering, Chemical: Impact Factor 0.150, 92/110

Engineering, Petroleum: Impact Factor

Radigan, M.J. (1994), How to select a continuous emission monitoring system. *Hydrocarbon Processing*, **73** (2), 73-75.

? Vervalin, C.H. (1994), Responsible care is working. *Hydrocarbon Processing*, **73** (7), 13.

# Title: Hydrogeology Journal

Full Journal Title: Hydrogeology Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1431-2174

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schwartz, F.W., Fang, Y.C. and Parthasarathy, S. (2005), Patterns of evolution of research strands in the hydrologic sciences. *Hydrogeology Journal*, **13** (1), 25-36.

Full Text: [2005\Hyd J13, 25.pdf](2005/Hyd%20J13,%2025.pdf)

Abstract: This paper examines issues of impact and innovation in groundwater research by using bibliometric data and citation analysis. The analysis is based on 3120 papers from the journal Water Resources Research with full contents and their citation data from the ISI Web of Science. The research is designed to develop a better understanding of the way citation numbers can be interpreted by scientists. Not surprisingly, the most highly cited papers appear to be pioneers in the field with papers departing significantly from what has come before and to be effective in creating similar, follow-on papers. Papers that are early contributions to a new research strand that is highly influential will be on average highly cited. However, the importance of a research strand as measured by citations seems to fall with time. The citation patterns of some classic papers show that the activity in the topical area and impact of follow-on papers gradually decline with time, which has similarities with Kuhn’s ideas of revolutionary and normal science. The results of this study reinforce the importance of being a pioneer in a research strand, strategically shifting research strands, adopting strategies that can facilitate really major research breakthroughs.

Keywords: Alberta, Bibliometric, Canada Sedimentary Basin, Citation, Citation Analysis, Citations, Fluid-Flow, Genesis, Innovation, ISI, Journal, Model, Regional Groundwater-Flow, Research, Sciences, Small Drainage Basins, Stratabound Ore-Deposits, Theoretical-Analysis, Web of Science

# Title: Hydrological Processes

Full Journal Title: [Hydrological Processes](http://www3.interscience.wiley.com/cgi-bin/issuetoc?ID=20898)

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JCR Abbreviated Title: Hydrol Process

ISSN: 0885-6087

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Journal Country/Territory: England

Language: English

Publisher: John Wiley & Sons Ltd

Publisher Address: Baffins Lane Chichester, W Sussex PO19 1UD, England

Subject Categories:

Water Resources: Impact Factor 1.006, 11/47 (2000)

Notes: highly cited

? Quinn, P., Beven, K., Chevallier, P. and Planchon, O. (1991), The prediction of hillslope flow paths for distributed hydrological modeling using digital terrain models. *Hydrological Processes*, **5** (1), 59-79.

Full Text: 1991\Hyd Pro5, 59.pdf

Abstract: The accuracy of the predictions of distributed hydrological models must depend in part on the proper specification of flow pathways. This paper examines some of the problems of deriving flow pathways from raster digital terrain data in the context of hydrological predictions using TOPMODEL. Distributed moisture status is predicted in TOPMODEL on the basis of spatial indices that depend on flow path definition. The sensitivity of this index to flow path algorithm and grid size is examined for the case where the surface topography is a good indicator of local hydraulic gradients. A strategy for the case where downslope subsurface flow pathways may deviate from those indicated by the surface topography is described with an example application.

Keywords: Digital Terrain Data, Flow Pathways, Distributed Hydrological Models

Notes: highly cited

? Beven, K. and Binley, A. (1992), The future of distributed models - model calibration and uncertainty prediction. *Hydrological Processes*, **6** (3), 279-298.

Full Text: 1992\Hyd Pro**6**, 279.pdf

Abstract: This paper describes a methodology for calibration and uncertainty estimation of distributed models based on generalized likelihood measures. The GLUE procedure works with multiple sets of parameter values and allows that, within the limitations of a given model structure and errors in boundary conditions and field observations, different sets of values may be equally likely as simulators of a catchment. Procedures for incorporating different types of observations into the calibration; Bayesian updating of likelihood values and evaluating the value of additional observations to the calibration process are described. The procedure is computationally intensive but has been implemented on a local parallel processing computer. The methodology is illustrated by an application of the Institute of Hydrology Distributed Model to data from the Gwy experimental catchment at Plynlimon, mid-Wales.

Keywords: Distributed Models, Calibration Uncertainty, Likelihood

? Geldreich, E.E. (1996), Pathogenic agents in freshwater resources. *Hydrological Processes*, **10** (2), 315-333.

Full Text: [1996\Hyd Pro10, 315.pdf](1996/Hyd%20Pro10,%20315.pdf)

Abstract: Numerous pathogenic agents have been found in freshwaters used as sources for water supplies, recreational bathing and irrigation. These agents include bacterial pathogens, enteric viruses, several protozoans and parasitic worms more common to tropical waters. Although infected humans are a major source of pathogens, farm animals (cattle, sheep, pigs), animal pets (dogs, cats) and wildlife serve as significant reservoirs and should not be ignored. The range of infected individuals within a given warm-blooded animal group (humans included) may range from 1 to 25%. Survival times for pathogens in the water environment may range from a few days to as much as a year (Ascaris, Taenia eggs), with infective dose levels varying from one viable cell for several primary pathogenic agents to many thousands of cells for a given opportunistic pathogen. As pathogen detection in water is complex and not readily incorporated into routine monitoring, a surrogate is necessary. In general, indicators of faecal contamination provide a positive correlation with intestinal pathogen occurrences only when appropriate sample volumes are examined by sensitive methodology. Pathways by which pathogens reach susceptible water users include ingestion of contaminated water, body contact with polluted recreational waters and consumption of salad crops irrigated by polluted freshwaters. Major contributors to the spread of various water-borne pathogens are sewage, polluted surface waters and stormwater runoff. All of these contributions are intensified during periods of major floods. Several water-borne case histories are cited as examples of breakdowns in public health protection related to water supply, recreational waters and the consumption of contaminated salad crops. In the long term, water resource management must focus on pollution prevention from point sources of waste discharges and the spread of pathogens in watershed stormwater runoff.

Notes: highly cited

? Tockner, K., Malard, F. and Ward, J.V. (2000), An extension of the flood pulse concept. *Hydrological Processes*, **14** (16-17), 2861-2883.

Full Text: [2000\Hyd Pro14, 2861.pdf](2000/Hyd%20Pro14,%202861.pdf)

Abstract: The flood pulse concept of Junk, Bayley and Sparks is a major contribution to our understanding of river-floodplain interactions and has become an important paradigm in lotic ecology. The concept is based mainly on large tropical lowland rivers. Floodplains may, however, develop in all geographical areas and at different locations along a river corridor. We extend this concept to temperate areas by including information derived from near-natural proglacial, headwater and lowland floodplains. Specific attention is directed to the role of temperature as a major determinant of floodplain ecology. Further attention is directed to the importance of expansion-contraction cycles occurring well below bankfull (‘flow pulse’ versus ‘flood pulse’). Selected examples are presented that highlight the complexity of expansion-contraction events and their consequences on habitat heterogeneity and functional processes. Habitat heterogeneity is mainly a product of shifting water sources, different how paths and the relative importance of autogenic processes. In different floodplain systems, expansion may enhance habitat heterogeneity (e.g. glacial floodplain) or create homogeneity (e.g. Danubian floodplain). Further, the ecological consequences of episodic flow and flood pulses are discussed. Finally, a landscape approach is suggested in order to document expansion and contraction processes and to elucidate how these processes influence landscape heterogeneity and biodiversity patterns. Such a landscape-based ecosystem model can be applied to rigorously assess the ecological integrity of river-floodplain systems. Copyright (C) 2000 John Wiley & Sons, Ltd.

Keywords: River, Floodplain, Flow Pulse, Temperature, Ecosystem Process, Expansion, Contraction, Biodiversity, Conservation, Landscape, Danube Restoration Project, River-Floodplain, Hydrological Connectivity, Regulated Rivers, Organic-Matter, Missouri River, Orinoco River, New-Zealand, System, Ecosystems

# Title: Hydrological Sciences Journal-Journal des Sciences Hydrologiques

Full Journal Title: Hydrological Sciences Journal-Journal des Sciences Hydrologiques

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JCR Abbreviated Title:

ISSN: 0262-6667

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Jain, C.K. (2001), Adsorption of zinc onto bed sediments of the River Ganga: Adsorption models and kinetics. *Hydrological Sciences Journal-Journal des Sciences Hydrologiques*, **46** (3), 419-434.

Full Text: [H\Hyd Sci J-J Sci Hyd46, 419.pdf](H/Hyd%20Sci%20J-J%20Sci%20Hyd46,%20419.pdf)

Abstract: A laboratory study was performed to study the effects of various operating factors, viz. initial metal ion concentration, solution pH, amount of sediment, contact time, particle size and temperature on the adsorption of zinc ions onto the bed sediments of the River Ganga (India). The equilibrium time was found to be of the order of 60 min. The adsorption curves are smooth and continuous leading to saturation, suggesting the possible monolayer coverage of zinc ions on the surface of the adsorbent. The extent of adsorption increases with an increase of pH. Furthermore the adsorption of zinc increases with increasing amount of adsorbent and decreases with adsorbent particle size. The important geochemical phases, iron and manganese oxide act as the active support material for the adsorption of zinc ions. The adsorption data have been analysed with the help of Langmuir and Freundlich adsorption models to determine the mechanistic parameters associated with the adsorption process. An attempt has also been made to determine thermodynamic parameters of the process, viz. free energy change, enthalpy change and entropy change. The negative values of free energy change (ΔG°) indicated the spontaneous nature of the adsorption of zinc onto the bed sediments and positive values of enthalpy change (ΔH°) suggest the endothermic nature of the adsorption process. The intraparticle diffusion of zinc in the adsorbent was found to be the main rate-limiting step.

Keywords: River Ganga, Adsorption, Langmuir Model, Freundlich Model, Kinetics Thermodynamic Parameters, Heavy-Metals, Cadmium, Removal, Sorption, Water, Lead

Notes: highly cited

? Sivapalan, M., Takeuchi, K., Franks, S.W., Gupta, V.K., Karambiri, H., Lakshmi, V., Liang, X., McDonnell, J.J., Mendiondo, E.M., O’Connell, P.E., Oki, T., Pomeroy, J.W., Schertzer, D., Uhlenbrook, S. and Zehe, E. (2003), IAHS decade on Predictions in Ungauged Basins (PUB), 2003-2012: Shaping an exciting future for the hydrological sciences. *Hydrological Sciences Journal-Journal des Sciences Hydrologiques*, **48** (6), 857-880.

Full Text: [2003\Hyd Sci J-J Sci Hyd46, 419.pdf](2003/Hyd%20Sci%20J-J%20Sci%20Hyd46,%20419.pdf)

Abstract: Drainage basins in many parts of the world are ungauged or poorly gauged, and in some cases existing measurement networks are declining. The problem is compounded by the impacts of human-induced changes to the land surface and climate, occur-ring at the local, regional and global scales. Predictions of ungauged or poorly gauged basins under these conditions are highly uncertain. The IAHS Decade on Predictions in Ungauged Basins, or PUB, is a new initiative launched by the International Association of Hydrological Sciences (IAHS), aimed at formulating and implementing appropriate science programmes to engage and energize the scientific community, in a coordinated manner, towards achieving major advances in the capacity to make predictions in ungauged basins. The PUB scientific programme focuses on the estimation of predictive uncertainty, and its subsequent reduction, as its central theme. A general hydrological prediction system contains three components: (a) a model that describes the key processes of interest, (b) a set of parameters that represent those landscape properties that govern critical processes, and (c) appropriate meteorological inputs (where needed) that drive the basin response. Each of these three components of the prediction system, is either not known at all, or at best known imperfectly, due to the inherent multi-scale space-time heterogeneity of the hydrological system, especially in ungauged basins. PUB will therefore include a set of targeted scientific programmes that attempt to make inferences about climatic inputs, parameters and model structures from available but inadequate data and process knowledge, at the basin of interest and/or from other similar basins, with robust measures of the uncertainties involved, and their impacts on predictive uncertainty. Through generation of improved understanding, and methods for the efficient quantification of the underlying multi-scale heterogeneity of the basin and its response, PUB will inexorably lead to new, innovative methods for hydrological predictions in ungauged basins in different parts of the world, combined with significant reductions of predictive uncertainty. In this way, PUB will demonstrate the value of data, as well as provide the information needed to make predictions in ungauged basins, and assist in capacity building in the use of new technologies. This paper presents a summary of the science and implementation plan of PUB, with a call to the hydrological community to participate actively in the realization of these goals.

Keywords: Drainage Basins, Predictions, Uncertainty, Heterogeneity, Gauging, Hydrological Models, Hydrological Theory, Field Experiments

# Title: Hydrologiques

Full Journal Title: Hydrologiques

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JCR Abbreviated Title: Hydrologiques

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Issues/Year:

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Publisher Address:

Subject Categories:

: Impact Factor

? Jain, C.K. and Ram, D. (1997), Adsorption of metal ions on bed sediments. *Hydrologiques*, **42** (5), 713-723.

Abstract: The adsorption of lead and zinc ions on bed sediments of the River Kali in western Uttar Pradesh, India, has been studied. The role of the coarser sediment fraction (210-250 µm) in controlling metal pollution has been elucidated and compared to those of the clay and silt fractions. The parameters controlling metal uptake, viz., solution pH, sediment dose, contact time, and particle size have been evaluated. The optimum contact time needed to reach equilibrium is of the order of 45 min for both the metal ions. The extent of adsorption increases with an increase of pH. Furthermore, the adsorption of the metal ions increases with increasing adsorbent doses and decreases with adsorbent particle size. The two geochemical phases of iron and manganese oxide act as the active support material for the adsorption of the metal ions.

# Title: Hydrology and Earth System Sciences

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? Su, Z. (2002), The Surface Energy Balance System (SEBS) for estimation of turbulent heat fluxes. *Hydrology and Earth System Sciences*, **6** (1), 85-99.

Full Text: [2002\Hyd Ear Sys Sci6, 85.pdf](2002/Hyd%20Ear%20Sys%20Sci6,%2085.pdf)

Abstract: A Surface Energy Balance System (SEBS) is proposed for the estimation of atmospheric turbulent fluxes and evaporative fraction using satellite earth observation data, in combination with meteorological information at proper scales. SEBS consists of: a set of tools for the determination of the land surface physical parameters, such as albedo, emissivity, temperature, vegetation coverage etc., from spectral reflectance and radiance measurements, a model for the determination of the roughness length for heat transfer and anew formulation, for the determination of the evaporative fraction on the basis of energy balance at limiting cases. Four experimental data sets are used to assess the reliabilities of SEBS. Based on these case studies, SEBS has proven to be capable to estimate turbulent heat fluxes and evaporative fraction at various scales with acceptable accuracy. The uncertainties in the estimated heat fluxes are comparable to in-situ measurement uncertainties.

Keywords: Surface Energy Balance, Turbulent Heat Flux, Evaporation, Remote Sensing, Partial Canopy Cover, Land Surfaces, Roughness Parameters, Semiarid Rangelands, Vegetated Surfaces, One-Layer, Model, Temperature, Water, Evapotranspiration

Notes: highly cited

? Peel, M.C., Finlayson, B.L. and McMahon, T.A. (2007), Updated world map of the Köppen-Geiger climate classification. *Hydrology and Earth System Sciences*, **11** (5), 1633-1644.

Full Text: [2007\Hyd Ear Sys Sci11, 1633.pdf](2007/Hyd%20Ear%20Sys%20Sci11,%201633.pdf)

Abstract: Although now over 100 years old, the classification of climate originally formulated by Wladimir Koppen and modified by his collaborators and successors, is still in widespread use. It is widely used in teaching school and undergraduate courses on climate. It is also still in regular use by researchers across a range of disciplines as a basis for climatic regionalisation of variables and for assessing the output of global climate models. Here we have produced a new global map of climate using the Koppen-Geiger system based on a large global data set of long-term monthly precipitation and temperature station time series. Climatic variables used in the Koppen-Geiger system were calculated at each station and interpolated between stations using a two-dimensional (latitude and longitude) thin-plate spline with tension onto a 0.1 degrees x 0.1 degrees. V grid for each continent. We discuss some problems in dealing with sites that are not uniquely classified into one climate type by the Koppen-Geiger system and assess the outcomes on a continent by continent basis. Globally the most common climate type by land area is BWh (14.2%, Hot desert) followed by Aw (11.5%, Tropical savannah). The updated world Koppen-Geiger climate map is freely available electronically in the Supplementary Material Section (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007-supplement.zip).

Keywords: System

? van der Zaag, P., Gupta, J. and Darvis, L.P. (2009), Urgent water challenges are not sufficiently researched. *Hydrology and Earth System Sciences*, **13** (6), 905-912.

Abstract: In this opinion paper we submit that water experts conduct comparatively little research on the more urgent challenges facing the global community. Five specific biases are identified. First, research in the field of water and sanitation is heavily biased against sanitation. Second, research on food security is biased in favour of conventional irrigation and fails to address the problems and opportunities of rainfed agriculture. Third, insufficient water research is dedicated to developmental compared to environmental issues. Fourth, too little research is conducted on adaptation to climate change by developing countries. and finally, research on water governance has a fascination for conflict but too little eye for cooperation and meeting basic needs. This paper illustrates these biases with bibliometric indicators extracted from the ISI Web of Science. There is a stark mismatch between the global demand for knowledge and the supply of it. This mismatch is identified here as a problem that we water scientists must confront and resolve. We still lack a full understanding why this divergence between demand and supply occurs and persists; an understanding that is required to guide us towards aligning our research priorities to societal demands. The paper, however, makes some inferences. On the one hand, we should promote the global South to create its own research biases and allow it to develop alternative solutions. Simultaneously we would benefit from critical examination of our own research practice. Although this paper addresses a critical challenge it does not aim to be exhaustive or definitive. We merely identify the persistence of intransigent water problems as a valid research object in itself.

? van der Zaag, P., Gupta, J. and Darvis, L.P. (2009), HESS Opinions “Urgent water challenges are not sufficiently researched”. *Hydrology and Earth System Sciences*, **13** (6), 905-912.

Abstract: In this opinion paper we submit that water experts conduct comparatively little research on the more urgent challenges facing the global community. Five specific biases are identified. First, research in the field of water and sanitation is heavily biased against sanitation. Second, research on food security is biased in favour of conventional irrigation and fails to address the problems and opportunities of rainfed agriculture. Third, insufficient water research is dedicated to developmental compared to environmental issues. Fourth, too little research is conducted on adaptation to climate change by developing countries. and finally, research on water governance has a fascination for conflict but too little eye for cooperation and meeting basic needs. This paper illustrates these biases with bibliometric indicators extracted from the ISI Web of Science. There is a stark mismatch between the global demand for knowledge and the supply of it. This mismatch is identified here as a problem that we water scientists must confront and resolve. We still lack a full understanding why this divergence between demand and supply occurs and persists; an understanding that is required to guide us towards aligning our research priorities to societal demands. The paper, however, makes some inferences. On the one hand, we should promote the global South to create its own research biases and allow it to develop alternative solutions. Simultaneously we would benefit from critical examination of our own research practice. Although this paper addresses a critical challenge it does not aim to be exhaustive or definitive. We merely identify the persistence of intransigent water problems as a valid research object in itself.

Keywords: Bibliometric Indicators, Biofuel, Indicators, Knowledge, Research, Science, Web of Science

# Title: Hydrometallurgy

Full Journal Title: [Hydrometallurgy](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=0304386x)

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Saha, A.K., Shahani, M.J. and Altekar, V.A. (1977), Adsorption of cobalt by lignite. *Hydrometallurgy*, **2** (3), 285-292.

Full Text: [H\Hydrometallurgy2, 285.pdf](H/Hydrometallurgy2,%20285.pdf)

Abstract: Studies similar to earlier ones which had established the feasibility of extracting nickel by the lignite adsorption route were conducted on the adsorption extraction of cobalt on lignite, and with equal success.

Optimal values of variables such as pH, sorbent/sorbate ratio, adsorbent particle size, contact time, temperature, and the effect of excess ammonium carbonate were evaluated.

The rate of adsorption of cobalt was found to be slower than that for nickel. However, the recovery of over 99% cobalt from ammoniacal carbonate solutions, at optimal conditions, was comparable to that for nickel.

The cobalt was recoverable as metal, by ignition of the loaded lignite, or in solution, by elution with sulfuric acid in single or multiple stages.

Barker, N.W. and Linge, H.G. (1981), Methylene-Blue dye adsorption on sulfide minerals: Relevance to surface-area measurement. *Hydrometallurgy*, **6** (3-4), 311-326.

Full Text: [H\Hydrometallurgy6, 311.pdf](H/Hydrometallurgy6,%20311.pdf)

Abstract: Methylene blue dye adsorbs on chalcopyrite (CuFeS2) powder slurried in aqueous solution. The rate of adsorption is quite low, and at least two days of contact is required to reach a steady state. Adsorption isotherms rise sharply for dye equilibrium concentrations less than 10−5 *M* but an adsorption plateau is reached at higher solution concentrations (measured to 10−4 *M*). These data can be fitted to a Langmuir isotherm. The saturation adsorption of the chalcopyrite samples is proportional to their BET surface area, with 2.18 ± 0.07 μmol of dye being adsorbed per m2 of surface. This value is compatible with “flat” physical adsorption of Methylene blue cations associated as dimers, and also gives good agreement with the surface area calculated from the average particle radius for several closely-sized chalcopyrite samples, using reasonable values for the surface roughness.

The same model applies to Methylene blue adsorption on chalcopyrites *concentrates* and on pure pyrite (FeS2) surfaces, but not to more reactive sulphide minerals such as galena (PbS) and bismuthinite (Bl2S3). For the latter sulphides, the dye surface coverage is lower than for chalcopyrite, unless chalcopyrite is also present in the sample, e.g. as in chalcopyrite concentrates. This difference has been interpreted using a galvanic mechanism.

Sato, T., Nakamura, T. and Ikeno, M. (1985), The extraction of iron(III) from aqueous acid-solutions by di(2-ethylhexyl)phosphoric acid. *Hydrometallurgy*, **15** (2), 209-217.

Full Text: [H\Hydrometallurgy15, 209.pdf](H/Hydrometallurgy15,%20209.pdf)

Abstract: The extraction of iron(III) from aqueous solutions containing sulphuric, hydrochloric and nitric acids by di(2-ethylhexyl)phosphoric acid (DEHPA) in kerosene has been investigated under different conditions. As a result, it is found that although extraction is dominated by an ion-exchange reaction, the rate of iron(III) extraction from sulphuric acid solutions to reach equilibrium is relatively slow in comparison with that from hydrochloric or nitric acid solutions. In the extraction from aqueous solutions containing hydrochloric or nitric acid, however, the DEHPA combines with iron(III) according to the solvating reaction at higher aqueous acidity. From studies on the rate of the extraction from sulphuric acid solutions, examined under non-equilibrium, it is confirmed that dependencies of extraction rate on hydrogen ion and DEHPA concentrations are in the first and inverse first orders, respectively. The hydrolyzed species is considered to interpret the extraction mechanism in this system.

Li, Z., Fürst, W. and Renon, H. (1988), Chloride effect on the extraction rate of Cu with 2-hydroxy-5-nonylbenzophenone oxime. *Hydrometallurgy*, **21** (2), 213-221.

Full Text: [H\Hydrometallurgy21, 213.pdf](H/Hydrometallurgy21,%20213.pdf)

Abstract: The influence of chloride concentration on the extraction rate of copper(II) by LIX 65N HS diluted with ESCAID 100 has been determined experimentally. The extraction rate is maximum at an intermediate chloride concentration. Adopting an interfacial mechanism in which the formation of the complex CuR2 is the rate controlling step, this phenomenon may be explained assuming that both CuCl+ and Cu2+ cupric ions are engaged in the extraction process. The thermodynamic model, the parameters of which were obtained independently from various equilibrium data, is applied to the evaluation of the concentrations of cupric chlorocomplexes and of their activity coefficients in the aqueous phase which are useful in obtaining kinetics in terms of activities.

Scharer, J.M. and Byerley, J.J. (1989), Aspects of uranium adsorption by microorganisms. *Hydrometallurgy*, **21** (3), 319-329.

Full Text: [H\Hydrometallurgy21, 319.pdf](H/Hydrometallurgy21,%20319.pdf)

Abstract: The biosorption of uranium (VI) from process and synthetic solutions was investigated. Adsorption capacities in process solutions were substantially less than in synthetic solutions of similar uranium and sulphate content. Biosorption was particularly poor in solutions of low pH. The reduction of the biosorption capacity was attributed to the competition of the ferric ion for the adsorption sites. Only cationic species of iron competed successfully, while anionic species such as hexacyanoferrate(III) were poorly adsorbed. Capsular polysaccharides extracted from plasmid transformed bacteria and algal alginate were observed to possess higher uranium sorption capacity than whole cells. The uranyl ion was believed to bind to the carboxylic residues of these biopolymers. Neither the biomass nor the polysaccharides displayed significant selectivity for uranium.

Yoshizuka, K., Sakomoto, Y., Baba, Y. and Inoue, K. (1996), Distribution equilibria in the adsorption of cobalt(II) and nickel(II) on Levextrel resin containing Cyanex 272[H\Hydrometallurgy23, 309.pdf](H/Hydrometallurgy23,%20309.pdf). *Hydrometallurgy*, **23** (2-3), 309-318.

Full Text:

Abstract: Equilibrium distributions of cobalt(II) and nickel(II) were measured in the adsorption on Levextrel resin containing Cyanex 272 as extractant from aqueous ammonium nitrate and sulfate solutions. It was inferred that the extractant in the resin behaves in the same manner as in the solvent extraction. The distribution data were analyzed quantitatively by taking account of the extraction reaction described below to evaluate the apparent equilibrium constants of the extraction reactions for each metal and each aqueous medium as well as the apparent stability constants of cobalt(II)- and nickel(II)-amine complexes.



where *x*=0 for cobalt(II) and *x*=1 for nickel(II).

Cobalt(II) is more selectively adsorbed over nickel(II) from sulfate media than from nitrate media though the adsorption itself is suppressed by sulfate anion owing to the formation of metal-sulfato complexes.

Awadalla, F.T. and Pesic, B. (1992), Biosorption of cobalt with the AMTTM metal removing agent. *Hydrometallurgy*, **28** (1), 65-80.

Full Text: [H\Hydrometallurgy28, 65.pdf](H/Hydrometallurgy28,%2065.pdf)

Abstract: The biosorption of cobalt from aqueous solutions was studied by using the novel metal removing agent (MRA) produced by Advanced Minerals Technologies. The parameters studied were the loading capacity of MRA as affected by the initial pH, cobalt concentration and the presence of certain cations and anions. The effect of temperature was also examined. With the particular batch of the MRA, it was found that the loading capacity for cobalt was about 35 mg/g. The cobalt uptake was a function of pH, and it was lower at lower pH values. Sorption kinetics showed that the sequestering of cobalt by this material was quite fast under ambient conditions. Desorption of cobalt from loaded MRA could be performed by dilute acids e.g. 0.1 N HCl in a very short period of time. The desorbed MRA could be recycled only after regeneration with alkali, for example, 0.5 N NaOH. A detailed mechanism of cobalt biosorption is also proposed.

Adams, M.D., Friedl, J. and Wagner, F.E. (1995), The mechanism of adsorption of aurocyanide on to activated carbon, 2. Thermal stability of the adsorbed species. *Hydrometallurgy*, **37** (1), 33-45.

Full Text: [H\Hydrometallurgy37, 33.pdf](H/Hydrometallurgy37,%2033.pdf)

Abstract: Aurocyanide adsorbed on to activated carbon from neutral and alkaline solutions is found to remain relatively stable at temperatures up to about 240°C, as concluded from the results of elemental analyses, scanning electron microscopy, X-ray diffractometry and Mössbauer spectroscopic measurements. At higher temperatures the aurocyanide is reduced to the metal, with evolution of gaseous HCN. Aurocyanide loaded under acidic conditions decomposes at lower temperatures. The formation of AuCN-type species, presumably short Au*x*(CN)*x* + 1− oligomers, has been observed on samples loaded from neutral solutions and then heated to 240°C or higher.

Mishra, S.P. and Chaudhury, G.R. (1996), Kinetics of Zn2+ adsorption by *Penicillium* Sp. *Hydrometallurgy*, **40** (1-2), 11-23.

Full Text: [H\Hydrometallurgy40, 11.pdf](H/Hydrometallurgy40,%2011.pdf)

Abstract: Zn2+ ion adsorption studies were carried out using a biomass of *Penicillium* sp. The percentage adsorption increased with increasing pH and the amount of biomass and showed a reverse trend with temperature and initial Zn2+ concentration. The adsorption kinetics were initially fast then slow. The initial faster rate corresponds to around 70% of the total adsorption. The activation energy was found to be 8.4 kJ/mol, which corresponds to a diffusion-controlled mechanism.

Ubaldini, S., Piga, L., Fornari, P. and Massidda, R. (1996), Removal of iron from quartz sands: A study by column leaching using a complete factorial design. *Hydrometallurgy*, **40** (3), 369-379.

Full Text: [H\Hydrometallurgy40, 369.pdf](H/Hydrometallurgy40,%20369.pdf)

Abstract: The aim of the work was to decrease the iron content of ferrous quartz sands by fixed-bed column leaching with recycling of the leaching solutions in order to attain a product suitable for industrial use. Dissolution of iron was achieved by treating the sands in an acid medium with a reducing agent (oxalic acid) to convert Fe-III into Fe-II. The factors assumed to affect dissolution of iron, Such as temperature, oxalic acid concentration, pH and flow-rate, were studied with a 2(4) full factorial design in order to assess the main effects and the interactions among the factors. Removal of 46.1% iron gives a product containing 0.0163% Fe2O3 which is fit for industrial applications.

Keywords: Acids, Column, Factorial Design, Fixed Bed, Fixed Bed Column, Fixed-Bed, Fixed-Bed Column, Flow Rate, Magnetite, Oxides, Reductive Dissolution

Gudorf, M., Lazarova, Z. and Schügerl, K. (1996), Removal of tin from metal-containing industrial dusts. *Hydrometallurgy*, **42** (1), 125-130.

Full Text: [H\Hydrometallurgy42, 125.pdf](H/Hydrometallurgy42,%20125.pdf)

Abstract: The separation of tin and other base metals from low-grade metal-containing industrial dusts was investigated using hydrometallurgical operations. Selective leaching of tin could be obtained with oxalic acid solution. Recovery of Sn, Zn, Cu, Pb and Fe from the leach liquor was investigated by solvent extraction with several commercial reagents. (C) 1996 Elsevier Science B.V. All rights reserved.

Alguacil, F.J. and López, F.A. (1996), The extraction of mineral acids by the phosphine oxide cyanex-923. *Hydrometallurgy*, **42** (2), 245-255.

Full Text: [H\Hydrometallurgy42, 245.pdf](H/Hydrometallurgy42,%20245.pdf)

Abstract: The distribution equilibria of mineral acids: H2SO4, H3PO4, HCl, HClO4 and HNO3 between aqueous solutions and organic solutions of the phosphine oxide Cyanex 923 in toluene or decane are described. Partition studies have shown that the organic diluent only slightly influences the acid extraction. The extraction mechanism can be related to the solvation of the acid and formation of the L. Hm+Xm-(m = 1, 2, or 3) species in the organic phase, where L is the extractant: only in the case of initial high HNO3 concentrations is the formation of the L. (HNO3)2 species apparent in this phase. The effect of temperature on the acid extraction is also evaluated.

Altundoğan, H.S. and Tümen, F. (1997), Metal recovery from copper converter slag by roasting with ferric sulphate. *Hydrometallurgy*, **44** (1-2), 261-267.

Full Text: [H\Hydrometallurgy44, 261.pdf](H/Hydrometallurgy44,%20261.pdf)

Abstract: A study of the recovery of copper, cobalt, nickel and zinc from copper converter slag by roasting with ferric sulphate is reported. Roasting of converter slag with ferric sulphate, followed by leaching with water, was carried out in order to bring the metal values into solution. For 500°C roasting temperature, 120 min roasting time and Fe2(SO4)3 . xH2O/slag = 1 ratio, recoveries of copper, cobalt, nickel and zinc were about 93%; 38%; 13% and 59%, respectively. Higher extraction yields could be achieved with a higher ratio of Fe2(SO4)3 . xH2O/slag for copper and zinc, whereas cobalt and nickel could not be extracted in acceptable yields. Using H2SO4 in the leaching process markedly improves the metal recoveries.

Keywords: Smelter Slags, Sulfuric-Acid, Values, Cobalt, Nickel

Vegliò, F. and Beolchini, F. (1997), Removal of metals by biosorption: A review. *Hydrometallurgy*, **44** (3), 301-316.

Full Text: [H\Hydrometallurgy44, 301.pdf](H/Hydrometallurgy44,%20301.pdf)

Abstract: Biosorption is considered a potential instrument for the removal of metals from waste solutions and for precious metals recovery, an alternative to the conventional processes, such as those based on ion exchange, or adsorption on activated carbon. In this work the state of the art of biosorption investigation is presented and results found in literature are compared. (C) 1997 Elsevier Science B.V. All rights reserved.

Vegliò, F., Beolchini, F., Gasbarro, A., Lora, S., Corain, B. and Toro, L. (1997), Polyhydroxoethylmethacrylate (polyHEMA)-trimethylolpropanetrimethacrylate (TMPTM) as a support for metal biosorption with *Arthrobacter* sp. *Hydrometallurgy*, **44** (3), 317-320.

Full Text: [H\Hydrometallurgy44, 317.pdf](H/Hydrometallurgy44,%20317.pdf)

Abstract: Hydroxoethylmethacrylate-based macroporous resins are found to be promising new supports for *Arthrobacter* sp., a metal biosorbing bacterium. The relevant support-biomass complex biosorbs Cu(II) from aqueous solutions and appears to be suitable for partial regeneration. (C) 1997 Elsevier Science B.V. All rights reserved.

Chmielewski, A.G., Urbański, T.S. and Migdał, W. (1997), Separation technologies for metals recovery from industrial wastes. *Hydrometallurgy*, **45** (3), 333-344.

Full Text: [H\Hydrometallurgy45, 333.pdf](H/Hydrometallurgy45,%20333.pdf)

Abstract: Three hydrometallurgical processes for industrial wastes treatment are presented. The main separation techniques are: solvent extraction, leaching-precipitation, electro-oxidation, and ion exchange. Recovery of gold from solid wastes generated in the electronic and jewellery industries consists of thermal degradation, two-stage leaching with nitric acid solution to remove silver and other metals and then with aqua regia to dissolve gold, selective solvent extraction of gold with diethyl malonate, and reduction of gold from the organic phase.

Vanadium recovery from residue ashes after burning heavy oil fractions consists of alkaline leaching of vanadium, filtration, neutralization of sodium vanadate solution, precipitation of ammonium metavanadate, drying of the precipitate, and adsorption of the remaining vanadium from the filtrate on an anionite. From the remaining ashes nickel is recovered using acidic leaching, filtration, precipitation of ammonium-nickelous sulphate, filtration, and drying.

The third process concerns processing of electroplating sludges and waste waters containing chromium and copper. The waste waters are electro-oxidized to transform Cr(III) into chromate. Then metal cations are separated on a cationite. The purified electroplating baths are recycled directly to electroplating; other solutions are first concentrated using anionite, followed by sodium chromate eluate conversion into concentrated chromic acid solution. The sludges accumulated from waste water processing by hydroxide precipitation are re-dissolved in chromic acid solution generated progressively by circulation between the dissolving and electro-oxidation steps. The concentrated chromic acid solution obtained is purified on the cationite and recycled.

Deorkar, N.V. and Tavlarides, L.L. (1997), A chemically bonded adsorbent for separation of antimony, copper and lead. *Hydrometallurgy*, **46** (1-2), 121-135.

Full Text: [H\Hydrometallurgy46, 121.pdf](H/Hydrometallurgy46,%20121.pdf)

Abstract: The new chemically bonded adsorbent designated as ICAA-PPG was synthesized by covalent attachment of pyrogallol to a silica gel ceramic support. The feasibility of this absorbent to separate antimony(III), copper and lead from aqueous solutions has been examined. Results of absorbent syntheses, absorbent characterization, breakthrough curve, regeneration and metal ion separation studies are presented here. The silica surface was functionalized with aromatic amine groups, which were further diazotized to attach the pyrogallol moiety. A pyrogallol surface coverage density of 0.255 mmol/g of functionalized support was achieved. ICAA-PPG showed high antimony(III) removal efficiency over a pH range of 1–10. ICAA-PPG was regenerated by desorbing antimony(III) with 4 M hydrochloric acid and 0.05 M potassium hydrogen tartrate. Stripping solutions with low acidity and high chloride concentration showed high regeneration efficiency. The desorbed antimony can easily be recovered from stripping solutions by precipitation as antimony hydroxide and the stripping solution can be recycled. Concentration factors of 25–30 were achieved. The initial capacity of 21.6 mg/g was achieved at breakthrough volume and the capacity of 19.6 mg/g after 10 adsorption /stripping cycles shows that ICAA-PPG is stable. Antimony(III), copper and lead were separated by selective stripping from the bed saturated with these metal ions. These results indicate that ICAA-PPG has the potential for removal and separation of antimony from dilute aqueous solutions. An ICAA-PPG adsorption process can be employed for the removal of antimony impurity from copper and zinc electrolytes.

Kononova, O.N., Kholmogorov, A.G. and Mikhlina, E.V. (1998), Palladium sorption on vinylpyridine ion exchangers from chloride solutions obtained from spent catalysts. *Hydrometallurgy*, **48** (1), 65-72.

Full Text: [H\Hydrometallurgy48, 65.pdf](H/Hydrometallurgy48,%2065.pdf)

Abstract: The recovery of palladium from spent catalysts has been investigated. Palladium dissolution was effected using acidic sodium chloride. The initial concentrations in these solutions were (mol/l): Pd, 0.0005–0.05; NaCl, 2.0–2.3 and HCl, 0.5–2.0 (or 0.02–0.05). The palladium sorption from these solutions was studied under batch experiment conditions on vinylpyridine ion exchangers AN-251M, ANKF-5 and VP-14K. (C) 1998 Elsevier Science B.V. All rights reserved.

Jääskeläinen, E., Paatero, E. and Nyman, B. (1998), Adsorption of hydroxyoxime-based extractants on silica and mica particles in copper extraction processes. *Hydrometallurgy*, **49** (1-2), 151-166.

Full Text: [H\Hydrometallurgy49, 151.pdf](H/Hydrometallurgy49%20,151.pdf)

Abstract: Adsorption of the commercial copper extraction reagent LIX860 was studied using silica and phlogopite mica as model adsorbents and isooctane and isooctane/toluene mixture as model diluents to investigate the reasons which may contribute to the accumulation of solid fine particles at the interface between the aqueous and organic phases in metal extraction processes. The adsorption of pure 5-dodecylsalicylaldoxime (the active compound in LIX 860) from isooctane follows Langmuir type adsorption behaviour on silica giving a surface area of 0.61 nm2/molecule for the monolayer which compares favourably with the value estimated from molecular models when the aromatic ring is assumed parallel to the surface. On phlogopite, the observed adsorption density continuously increases with reagent concentration. At highest, the adsorption density on mica is about 3–4 times higher than on silica. This is explained by a perpendicular orientation of the aromatic ring on mica. Adsorption of the oxime as a copper complex is weaker than that of the free oxime. Increase in diluent aromacity and the addition of an aqueous phase were observed to decrease adsorption of the reagent on silica. (C) 1998 Elsevier Science B.V. All rights reserved.

Alam, M.S., Inoue, K. and Yoshizuka, K. (1998), Ion exchange/adsorption of rhodium(III) from chloride media on some anion exchangers. *Hydrometallurgy*, **49** (3), 213-227.

Full Text: [H\Hydrometallurgy49, 213.pdf](H/Hydrometallurgy49,%20213.pdf)

Abstract: Ion exchange/adsorption of rhodium(III) from chloride media was investigated with some commercial anion exchange resins like Sumichelate MC-10 resin, and Diaion WA10, WA21, SA20A and SA21A resins as well as crosslinked Cu(II)-templated chitosan and compared with Fe(III)-templated oxine type of chemically modified chitosan (Fe-oxine-chitosan) studied in previous work. A significant amount of rhodium is adsorbed from low acidic solution and better distribution ratios of rhodium adsorption on these commercial resins were found in all cases when tin is present in the solution. However, some amount of Rh(III) is also adsorbed in all cases except for Diaion WA10 even in the absence of tin. Rhodium is hardly adsorbed on crosslinked Cu(II)-templated chitosan (Cu-chitosan) when tin is absent in the feed solution. However, in the presence of tin, an appreciable amount of rhodium is adsorbed at low acidity while the distribution ratio decreases with the increase in hydrochloric acid concentration. When tin is present in the solution, the order of adsorption ability of the resins was found to be: WA21>SA21A>MC-10>Fe-oxine-chitosan>WA10>SA20A ≈ Cu-chitosan at low acidity (about 3 mol/dm3 HCl), and MC-10>WA21>SA21A>SA20A>Fe-oxine-chitosan>WA10>Cu-chitosan at high acidity (about 9 mol/dm3 HCl). On the other hand, when tin is absent, the order of adsorption ability was found to be: MC-10>WA21>SA20A>SA21A>WA10>Fe-oxine-chitosan>Cu-chitosan. It is obvious that MC-10 resin possesses the highest adsorption ability where 66.0% rhodium was adsorbed at 3 mol/dm3 HCl even when tin is absent in the feed solution. The maximum rhodium adsorption capacity of Diaion WA21 was evaluated to be 0.59 and 0.9 mol/kg dry adsorbent when tin is absent and present in the solution, respectively, while the maximum rhodium adsorption capacity of MC-10 resin was evaluated to be 1.4 mol/kg dry adsorbent in both cases whether tin is absent or present in the solution. The adsorption mechanism, in which resin is first protonated on contact with hydrochloric acid and subsequently adsorbs rhodium as an ion-pair complex is proposed. Stripping of rhodium from loaded adsorbents was carried out using some mineral acids accompanied by some oxidizing agents like H2O2, HNO3, NaClO3 and NaClO. A significant amount of rhodium was stripped by a single contact with these stripping agents. However, the best stripping was accomplished with hydrochloric acid containing sodium chlorate. (C) 1998 Elsevier Science B.V. All rights reserved.

Keywords: Anion Exchangers, Rhodium(III), Chloride Media

Sağ, Y., Kaya, A. and Kutsal, T. (1998), The simultaneous biosorption of Cu(II) and Zn on *Rhizopus arrhizus*: Application of the adsorption models. *Hydrometallurgy*, **50** (3), 297-314.

Full Text: [H\Hydrometallurgy50, 297.pdf](H/Hydrometallurgy50,%20297.pdf)

Abstract: The biosorption of two divalent metal ions-copper(II) and zinc-in single component and binary systems has been studied using *Rhizopus arrhizus*. The monocomponent equilibrium data have been analysed using the Langmuir, the Freundlich and the three parameter Redlich-Peterson isotherms. The non-competitive Freundlich isotherms have been found to have the highest regression correlation coefficients and the minimum average percentage errors between the predicted and the experimental values. The effects of the presence of Cu(II) and Zn ions together on the biosorption of Cu(II) and Zn ions have been investigated in terms of initial rates of biosorption and equilibrium isotherms. The competitive Freundlich model has also been demonstrated to provide the best correlation for the biosorption of the two metal ions on *R. arrhizus*. (C) 1998 Published by Elsevier Science B.V. All rights reserved.

Keywords: Dilute Aqueous-Solutions, *Chlorella-Vulgaris*, Metals, Removal, Cadmium, Equilibrium, Sorption, Biomass, Zinc, Ions, Biosorption, Freundlich Model, Langmuir

Puranik, P.R., Modak, J.M. and Paknikar, K.M. (1999), A comparative study of the mass transfer kinetics of metal biosorption by microbial biomass. *Hydrometallurgy*, **52** (2), 189-197.

Full Text: [H\Hydrometallurgy52, 189.pdf](H/Hydrometallurgy52,%20189.pdf)

Abstract: A comparative study of the kinetics of lead and zinc biosorption was carried out using the biomass of *Streptoverticillium cinnamoneum*, *Penicillium Chrysogenum* and *Citrobacter* sp. The uptake of metals in all cases was found to be rapid in the first 10 min, reaching an equilibrium within 30 min of contact. The rate of metal uptake was independent of initial metal concentration. The metal concentration profiles could be well predicted using a batch kinetic model. (C) 1999 Elsevier Science B.V. All rights reserved.

Keywords: Mass Transfer Kinetics, Metal Biosorption, Microbial Biomass

Sağ, Y., Ataçoğlu, I. and Kutsal, T. (2000), Equilibrium parameters for the single- and multicomponent biosorption of Cr(VI) and Fe(III) ions on *R. arrhizus* in a packed column. *Hydrometallurgy*, **55** (2), 165-179.

Full Text: [H\Hydrometallurgy55, 165.pdf](H/Hydrometallurgy55,%20165.pdf)

Abstract: In this study, simultaneous biosorption of Cr(VI) and Fe(III) on free *Rhizopus arrhizus* in a packed column operated in a continuous mode was investigated and compared to the single metal ion situation. The breakthrough curves were measured as a function of feed flow rate and different combinations of metal ion concentrations in the feed solutions. Column competitive biosorption data were evaluated in terms of the maximum (equilibrium) capacity of the column, the amount of metal loading on the *R. arrhizus* surface, the adsorption yield, and the total adsorption yield. Since the maximum column capacity and the adsorption yield decreased with increasing concentrations of the other metal ion, the combined action of Cr(VI) and Fe(III) on R, arrhizus was generally found to be antagonistic. In the single-ion situation, the adsorption isotherms were developed for optimum conditions and it was seen that the adsorption equilibrium data fit the non-competitive Freundlich model. For the multicomponent adsorption equilibrium, the competitive adsorption isotherms were also developed. The empirical Freundlich model for binary metal mixtures represented satisfactorily most of the column adsorption equilibrium data of Cr(VI) and Fe(III) on *R. arrhizus*.

Keywords: Dilute Aqueous-Solutions, Heavy-Metals, Adsorption-Isotherms, Simultaneous Multielement, *Saccharomyces-Cerevisiae*, *Chlorella-Vulgaris*, Algal Biomass, Ca-Alginate, *Z-Ramigera*, Removal, Waste Water, Heavy Metal, Free Microorganism, Simultaneous Biosorption, Packed Column, Freundlich Model

Feng, D., Aldrich, C. and Tan, H. (2000), Removal of heavy metal ions by carrier magnetic separation of adsorptive particulates. *Hydrometallurgy*, **56** (3), 359-368.

Full Text: [H\Hydrometallurgy56, 359.pdf](H/Hydrometallurgy56,%20359.pdf)

Abstract: The removal of Pb, Cu, and Cd ions from diluted solutions by sorption onto clinoptilolite, together with magnetite–Fe(OH)3 coprecipitation and magnetic filtration, was studied at laboratory scale. Low concentrations of clinoptilolite fines were used as heavy metal ion sorbent, while low dosages of magnetite fines were used as magnetic carrier materials. In addition, hydrolyzed Fe3+ was used as coagulant. The magnetic clinoptilolite–magnetite–Fe(OH)3 aggregates were removed by magnetic filtration. Experimental results showed that the process was very rapid and effective and yielded clear solutions with low residual concentrations of heavy metals. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Clinoptilolite, Ion Exchange, Heavy Metal Ions, Magnetite, Flocculation, Carrier Magnetic Separation

Sağ, Y., Yalcuk, A. and Kutsal, T. (2001), Use of a mathematical model for prediction of the performance of the simultaneous biosorption of Cr(VI) and Fe(III) on *Rhizopus arrhizus* in a semi-batch reactor. *Hydrometallurgy*, **59** (1), 77-87.

Full Text: [H\Hydrometallurgy59, 77.pdf](H/Hydrometallurgy59,%2077.pdf)

Abstract: The simultaneous biosorption of Cr(VI) and Fe(III) ions in single component and binary systems has been studied using *Rhizopus arrhizus*, a filamentous fungus, in a semi-batch reactor. The mono-component equilibrium data have been analysed using the Langmuir model. For the prediction of the performance of the reactor for mono-and bicomponent biosorption of Cr(VI) and Fe(III) ions, a mathematical model based on mass balances for liquid and solid phases has been used. The forward and backward rate constants, K1 and K2, have been calculated in the case of single metal biosorption and then used for modelling of the multi-component biosorption in the semi-batch reactor. The proposed model was shown to correlate well with single and bicomponent adsorption data. The capacity of Cr(VI) in the binary systems is greater than that of Fe(III), in agreement with the single component data. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Waste-Water, Biosorption, Cr(VI)-Fe(III), *Rhizopus arrhizus*, Multi-Component, Semi-Batch Reactor, Dilute Aqueous-Solutions, Alga *Chlorella-Vulgaris*, Heavy-Metals, Liquid-Chromatography, *Zoogloea-Ramigera*, Removal, Cadmium, Recovery, Biomass, Uranium

Barba, D., Beolchini, F. and Vegliò, F. (2001), A simulation study on biosorption of heavy metals by confined biomass in UF/MF membrane reactors. *Hydrometallurgy*, **59** (1), 89-99.

Full Text: [H\Hydrometallurgy59, 89.pdf](H/Hydrometallurgy59,%2089.pdf)

Abstract: A study on the biosorption of heavy metals is reported in this work. A biosorption process realised by confining the biomass in a membrane reactor has been considered. A kinetic model for the process has been developed by combining equilibrium data and material balances. Simulations have been performed to determine the effect of main operating conditions on the process. In particular, the metal profiles in the outlet stream and the cumulative metal removal have been determined both in a single-stage reactor and in a series of two-membrane modules. Furthermore, a range of variation for the metal concentration in the permeate has been determined, in order to predict experimental data with 95% probability. A first validation of the model has been obtained for a single-stage ultrafiltration/microfiltration (UF/MF) system, in the case of copper biosorption by *Arthrobacter* sp., under the following operating conditions: inlet copper concentration, 10 mg/L; inlet flow rate, 3.5 mL/min; biomass concentration, 1 g/L; reaction volume, 500 mL. The simulation showed the technical feasibility of this biosorption process where biomass is confined inside the reactor by an appropriate membrane. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Biosorption, Confined Biomass, Membrane Reactor

Lukey, G.C., Van Deventer, J.S.J. and Shallcross, D.C. (2001), Equilibrium model for the sorption of gold cyanide and copper cyanide on trimethylamine ion exchange resin in saline solutions. *Hydrometallurgy*, **59** (1), 101-113.

Full Text: [H\Hydrometallurgy59, 101.pdf](H/Hydrometallurgy59,%20101.pdf)

Abstract: The majority of models proposed previously for the prediction of ion exchange sorption equilibria are suitable for well-defined and ideal systems. These models commonly use the isotherm equations proposed by Langmuir, Freundlich or Fritz and Schluender. However, these equations have very little theoretical justification and the behaviour of these models in non-ideal systems, such as those commonly encountered in the hydrometallurgical industry, is uncertain. The present study formulates a mathematical model based on the principles of statistical thermodynamics as well as the use of the Metropolis Monte Carlo (MMC) numerical method. The model is able to successfully describe the multi-component equilibrium sorption of gold cyanide and copper cyanide onto an ion exchange resin containing trimethylammonium functional groups in non-saline, as well as saline solutions, such as those found in Western Australia. An important aspect of this modelling approach is that it does not use any solely empirical parameters. All the parameters have some physical meaning and describe only a single characteristic of the sorption system. It is therefore possible to include fundamental information of the system in order to facilitate easier parameter estimation. The model explicitly describes, in a mathematical form, classical non-ideal sorption phenomena such as selectivity, irreversibility, and interaction between sorbed species, which previously have been understood only from a chemical viewpoint. Consequently, by varying the surface properties and comparing the model predictions with experimental data, further insight has been gained into the sorption properties of ion exchange resins for gold cyanide and copper cyanide in non-saline as well as highly saline solutions. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Gold Cyanide, Ion Exchange, Modelling

Kononova, O.N., Kholmogorov, A.G., Kononov, Y.S., Pashkov, G.L., Kachin, S.V. and Zotova, S.V. (2001), Sorption recovery of gold from thiosulphate solutions after leaching of products of chemical preparation of hard concentrates. *Hydrometallurgy*, **59** (1), 115-123.

Full Text: [H\Hydrometallurgy59, 115.pdf](H/Hydrometallurgy59,%20115.pdf)

Abstract: Gold recovery from arsenopyrite coaly hard concentrates obtained by ore flotation concentration has been studied. The thiosulphate leaching of the products obtained after the chemical preparation of the concentrates was carried out in the system Na2S2O3–NH3–H2O at 20–22°C. The gold recovery on ion exchangers and carbon adsorbents from the thiosulphate solutions was investigated. It was found that the use of strong basic or polyfunctional anion exchangers of macroporous or porous structure is the most applicable for hydrometallurgical technology. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Gold, Arsenopyrite Coaly Hard Concentrates, Thiosulphate Leaching, Sorption Recovery

Volesky, B. (2001), Detoxification of metal-bearing effluents: Biosorption for the next century. *Hydrometallurgy*, **59** (2-3), 203-216.

Full Text: [H\Hydrometallurgy59, 203.pdf](H/Hydrometallurgy59,%20203.pdf)

Abstract: Metals can be removed and concentrated from solutions by using biomass material. Conservative estimates give new biosorbents the potential share amounting to US$27 million/year of the currently existing environmental market in North America alone. Very high cost-effectiveness of biosorption technology would tend to open new opportunities currently untapped. Biosorbents can be regenerated for multiple reuse, offering the metal recovery possibility from concentrated wash solutions. Relatively simple metal biosorption processes can meet the progressively stricter environmental discharge criteria. As with any up-stare technology, the continuing R&D is crucial. The interdisciplinary nature on both sides, application as well as R&D, poses quite a challenge. While there are numerous potential industrial clients, a successful biosorption enterprise will have to have courage, multidisciplinary skills and adequate financing. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Metal, Effluent, Biosorption, Heavy-Metals, Artificial Cells, Calcium Alginate, Ion-Exchange, Waste-Water, Biosorbent, Biomass, Cu, Biotechnology, Cadmium

Tsezos, M. (2001), Biosorption of metals. The experience accumulated and the outlook for technology development. *Hydrometallurgy*, **59** (2-3), 241-243.

Full Text: [H\Hydrometallurgy59, 241.pdf](H/Hydrometallurgy59,%20241.pdf)

Keywords: Biosorption, Metals, Technology, Uranium

Hatzikioseyian, A., Tsezos, M. and Mavituna, F. (2001), Application of simplified rapid equilibrium models in simulating experimental breakthrough curves from fixed bed biosorption reactors. *Hydrometallurgy*, **59** (2-3), 395-406.

Full Text: [H\Hydrometallurgy59, 395.pdf](H/Hydrometallurgy59,%20395.pdf)

Abstract: A modelling approach for a fixed bed biosorption column is presented. The Advection–Dispersion–Reaction (ADR) equation has been applied as the basic modelling equation for the special case of Local Equilibrium (LE). The model implements the minimum parameters for describing a fixed bed biosorption column, employing the geometrical dimensions of the bed, the packing arrangement, the operating conditions of the system, and the sorptive characteristics of the biosorbent material. An apparent axial dispersion coefficient has been used as a key parameter of the model. The authors compare model predictions to selected examples of experimental biosorption breakthrough curves reported from pilot scale work. Although the main assumption of the model is that biosorption equilibrium is rapid, the use of an apparent overall dispersion coefficient makes the model applicable for the cases where mass transfer resistances are present in the liquid and solid phases. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Modelling, Biosorption, Fixed Bed, Breakthrough Curves

de Carvalho, R.P., Guedes, K.J., Pinheiro, M.V.B. and Krambrock, K. (2001), Biosorption of copper by dried plant leaves studied by electron paramagnetic resonance and infrared spectroscopy. *Hydrometallurgy*, **59** (2-3), 407-412.

Full Text: [H\Hydrometallurgy59, 407.pdf](H/Hydrometallurgy59,%20407.pdf)

Abstract: We report on the biosorption of copper ions by dried leaves from the Brazilian flora. By Electron Paramagnetic Resonance (EPR), it is shown that the copper ions are incorporated in the leaves in a strongly axial site. Washing with a basic solution does not remove the copper from the leaves, however, it modifies the axial site symmetry. Infrared absorption seems to be compatible with a site that is located near to a simple or a double carbon–oxygen bond. Dried leaves are a good and commercially interesting alternative for sorption of metal ions compared to other biomasses. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Biosorption, Plant Biomass, EPR, FTIR, AAS, Cu

Dreher, T.M., Nelson, A., Demopoulos, G.P. and Filippou, D. (2001), The kinetics of cobalt removal by cementation from an industrial zinc electrolyte in the presence of Cu, Cd, Pb, Sb and Sn additives. *Hydrometallurgy*, **60** (2), 105-116.

Full Text: [H\Hydrometallurgy60, 105.pdf](H/Hydrometallurgy60,%20105.pdf)

Abstract: The effect of the addition of various additives on the kinetics of cobalt removal and zinc-dust dissolution in an industrial zinc electrolyte solution during cementation was investigated. Optimum cobalt removal with minimal zinc-dust dissolution occurs at 85°C with the addition of 15 mg/L copper, 10 mg/L cadmium and 2 mg/L antimony, using 3.5 g/L zinc dust. It was determined that tin could substitute antimony, but a substantially greater concentration of tin is required for adequate cobalt removal. At temperatures 85–90°C, the amount of dissolved zinc dust was always less than 10% of the initially-added zinc dust, but increased up to 80% at 95°C. For different additive combinations, there was no effect on zinc-dust dissolution.

The initial rate of cobalt removal was satisfactorily fitted to a first-order rate equation. The apparent rate constant was determined to be 1.6±0.2×10−3 s−1 at 85°C and initial conditions of [Cu]=[Cd]=30 mg/L, [Sb]=2 mg/L, [Co]=8–30 mg/L and Zn dust=3.5 g/L. Under similar initial conditions, it was found that the initial rate constant was dependent on the surface area of zinc dust available, up to approximately 6 m2/L (3.5 g/L zinc dust), after which a plateau was observed. The apparent activation energy for the process was estimated equal to 51 kJ/mol. This high value suggests that the cobalt removal process is controlled by a surface chemical reaction. (C) 2001 Elsevier Science B.V. All rights reserved.

Esposito, A., Pagnanelli, F., Lodi, A., Solisio, C. and Vegliò, F. (2001), Biosorption of heavy metals by *Sphaerotilus natans*: An equilibrium study at different pH and biomass concentrations. *Hydrometallurgy*, **60** (2), 129-141.

Full Text: [H\Hydrometallurgy60, 129.pdf](H/Hydrometallurgy60,%20129.pdf)

Abstract: Ln the present work a lyophilised cell suspension of *Spherotilus natans* was studied as biosorbent material for cadmium and copper removal from aqueous solutions. The biomass was firstly characterised by potentiometric titration and evaluation of the major ionic content. The experimental data highlight that the biomass cell wall contains two main acidic groups with a total amount of 5 meq/g. Equilibrium biosorption trials of cadmium and copper were carried out to investigate the effects of two important experimental factors, pH and biomass concentration. As expected, both cadmium and copper biosorption extent was repressed by pH decrease. The effect of the biomass concentration changes both with the equilibrium pH value and the kind of metal adsorbed. In the case of copper biosorption at pH > 5, the increase of biomass concentration causes a diminution of the maximum specific metal uptake due probably to cell aggregation phenomena; whereas at acidic pH values the previous trend is inverted perhaps because of the effect of partial hydrolysis of the bacterial cell wall constituents. A different behaviour was observed for cadmium biosorption in relation to the microbial cell concentration: the effect of biomass concentration is less evident and opposite with respect to copper at pH 6 and 3 and no definitive explanation was found for this case. Equilibrium modelling was performed for both metals by using the most used equations reported in the literature. A comparison of the biosorption characteristic of S, natans has been also performed with respect to some results reported by other researchers. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Biosorption, Heavy Metals, *Sphaerotilus Natans*, Waste-Water, Adsorption-Isotherms, *Zoogloea-Ramigera*, Arthrobacter sp, Removal, Cadmium, Copper, Ions, Sorption, Models

Leão, V.A., Lukey, G.C., van Deventer, J.S.J. and Ciminelli, V.S.T. (2001), The dependence of sorbed copper and nickel cyanide speciation on ion exchange resin type. *Hydrometallurgy*, **61** (2), 105-119.

Full Text: [H\Hydrometallurgy61, 105.pdf](H/Hydrometallurgy61,%20105.pdf)

Abstract: The present study investigates the influence of functional group structure and resin matrix on the speciation of copper and nickel cyanides sorbed onto two commercially available ion exchange resins. Batch experiments were performed using synthetic copper and nickel solutions containing 50 and 200 mg/L free cyanide, respectively. Despite the presence of Cu(CN)32− and Cu(CN)43− in solution, it has been found using Raman spectroscopy that the Imac HP555s resin, which has a polystyrene–divinylbenzene matrix, loads predominantly the Cu(CN)32− complex. In contrast, the polyacrylic resin, Amberlite IRA958, sorbed significant amounts of both Cu(CN)32− and Cu(CN)43−. It has been found that the speciation of nickel cyanide sorbed onto each resin was the same. A recently developed mathematical model based on statistical thermodynamic principles has been used as a tool to understand further the equilibrium sorption of copper and nickel cyanide complexes onto each resin studied. A higher sorption energy for nickel compared to copper has been observed for the sorption onto Imac HP555s. In contrast, the sorption energy for copper was found to be higher than for nickel for the polyacrylic resin, Amberlite IRA958. The values of the model parameters obtained were correlated with the chemical features of each complex in solution as well as sorbed onto the resins. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Copper Cyanide Complexes, Speciation, Raman Spectroscopy, Ion Exchange

Schmitz, P.A., Duyvesteyn, S., Johnson, W.P., Enloe, L. and McMullen, J. (2001), Adsorption of aurocyanide complexes onto carbonaceous matter from preg-robbing Goldstrike ore. *Hydrometallurgy*, **61** (2), 121-135.

Full Text: [H\Hydrometallurgy61, 121.pdf](H/Hydrometallurgy61,%20121.pdf)

Abstract: Aurocyanide complex adsorption by naturally occurring carbon in Goldstrike ore has been implicated in a form of gold refractoriness known as “preg-robbing”. The aim of this work was to establish a relationship between the aurocyanide uptake capacity of Goldstrike ore carbonaceous matter and the preg-robbing behavior of the parent ore. The effect of varying contact time between the aqueous gold–cyanide and the carbonaceous matter on the uptake of aurocyanide complexes was also investigated. In column adsorption experiments, the adsorbed gold concentration from 100 mL of a gold–cyanide solution depended on the flow rate of the solution. The concentration of adsorbed gold increased with solution flow rate, reaching a maximum concentration at a flow rate of approximately 0.05 mL/min. As solution flow rate increased to more than 0.05 mL/min, the concentration of gold adsorbed on the carbon decreased. Desorption of adsorbed gold into 75-mL sodium cyanide solution also depended on solution flow rate. Maximum desorption of gold occurred at a flow rate of approximately 0.14 mL/min. The gold adsorbed at the lowest and highest flow rates was more slowly desorbed than the additional gold adsorbed at the intermediate flow rates. The concentration of gold remaining on the carbon after desorption at 0.14 mL/min correlated to the amount of gold adsorbed at the highest and lowest flow rates in the adsorption experiments. This amount of slowly desorbed gold correlated to the preg-robbing behavior of the ore, whereas the amount of additional adsorbed gold (i.e., gold adsorbed at intermediate flow rates) was similar for all of the ores. For all of the carbonaceous matters studied, the concentration of gold sorbed in both batch and column experiments increased after autoclaving. (C) 2001 Elsevier Science B.V. All rights reserved.

Erosa, M.S.D., Medina, T.I.S., Mendoza, R.N., Rodriguez, M.A. and Guibal, E. (2001), Cadmium sorption on chitosan sorbents: Kinetic and equilibrium studies. *Hydrometallurgy*, **61** (3), 157-167.

Full Text: [H\Hydrometallurgy61, 157.pdf](H/Hydrometallurgy61,%20157.pdf)

Abstract: Chitosan is very efficient at removing cadmium through chelation mechanisms involving amine groups of chitosan. The optimum pH is 7, and in acidic solutions, the protonation of the biopolymer reduces the binding of cadmium on amine groups due to electrostatic repulsion. The influence of particle size, temperature and agitation speed on metal sorption is investigated using chitosan flakes and chitosan gel beads. Temperature and agitation speed hardly influence equilibria and kinetics in the selected experimental conditions corresponding to a large sorbent dosage. The major effect on sorption performance is due to sorbent particle size, especially for chitosan flakes. Though intraparticle diffusion represents an important step in the kinetic control, the contribution of external diffusion may not be neglected. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Adsorption, Agitation Speed, Beads, Cadmium, Chitin, Chitosan, Contribution, Cross-Linking, Derivatives, Diffusion, Elsevier, Equilibrium, External Diffusion, Glutaraldehyde Crosslinking, Groups, Intraparticle Diffusion, Isotherms, Kinetic, Kinetics, Mechanisms, Metal, Metal-Ions, Particle Size, pH, Physicochemical Parameters, Removal, Science, Solutions, Sorption, Temperature, Uranyl Ions

Hubicka, H. and Kołodyńska, D. (2001), Studies on application of polyacrylate anion-exchangers in sorption and separation of iminodiacetate rare earth element(III) complexes. *Hydrometallurgy*, **62** (2), 107-113.

Full Text: [H\Hydrometallurgy62, 107.pdf](H/Hydrometallurgy62,%20107.pdf)

Abstract: Polyacrylate anion-exchanger resins are considered economically useful for selective isolation, concentration and recovery of nickel, iron, copper and cobalt cyanide complexes. They also find wide application in food processing, pharmaceutical industry, sugar refining, etc. This kind of polyacrylate anion-exchangers has been applied by us to separate rare earth element complexes with IMDA. Strongly basic gel and macroporous polyacrylate anion-exchangers Amberlite IRA 458 and Amberlite IRA 958 were used. The following pairs of iminodiacetate rare earth element complexes were selected for separation: Sm(III)–Ho(III), La(III)–Nd(III), La(III)–Pr(III) based on the affinity of these elements for strongly basic anion-exchangers.

The results obtained indicate the possibility of application of anion-exchangers of this type for separation of individual lanthanide pairs in macro–micro systems. High yield of the obtained preparations is the evidence for the practical application of this method. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Polyacrylate Anion-Exchangers, Rare Earth Complexes, Iminodiacetic Acid

Sahoo, R.N., Das, S.C., Reddy, B.R., Rath, P.C. and Das, R.P. (2001), Adsorption of copper on manganese nodule residue obtained from NH3–SO2 leaching. *Hydrometallurgy*, **62** (3), 185-192.

Full Text: [H\Hydrometallurgy62, 185.pdf](H/Hydrometallurgy62,%20185.pdf)

Abstract: Manganese nodules occurring in beds of many of the world’s oceans contain valuable metals such as Cu, Co, Ni, Mn, Zn, etc. in the form of oxides/oxy-hydroxides. Many processes have been developed worldwide to extract metal values from manganese nodules. A process based on NH3–SO2 leaching has been developed at RRL, Bhubaneswar to recover Cu, Ni, Co and Zn. The process generates a large amount of residue. Studies were undertaken to examine the possibility of adsorption of heavy metal ions on this residue. Adsorption of copper on polymetallic nodule (PMN) leach residue was examined using synthetic copper sulfate solution. Adsorption was pH dependent and was maximum at pH between 4.0 and 5.0. The material was found to be a good adsorbent and its loading capacity was higher than activated charcoal. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Manganese Nodule, Leach Residue, Adsorption of Copper Ions, Activated Charcoal

Yalçınkaya, Y., Soysal, L., Denizli, A., Arıca, M.Y., Bektaş, S. and Genç, Ö. (2002), Biosorption of cadmium from aquatic systems by carboxymethylcellulose and immobilized *Trametes versicolor*. *Hydrometallurgy*, **63** (1), 31-40.

Full Text: [H\Hydrometallurgy63, 31.pdf](H/Hydrometallurgy63,%2031.pdf)

Abstract: *Trametes versicolor* basidio spores immobilized onto carboxymethylcellulose were used for the removal of cadmium ions from aqueous solutions. The biosorption of Cd(II) ions on carboxymethylcellulose and both immobilized live and heat-killed fungal mycelia of *T. versicolor* was studied from aqueous solutions in the concentration range of 30–700 mg/L. The biosorption of Cd(II) ions by the carboxymethylcellulose and both immobilized live and heat-inactivated immobilized preparations increased as the initial concentration of cadmium ions increased in the medium. Maximum biosorption capacity for immobilized live and heat-inactivated fungal mycelia of *T. versicolor* was found as 124 and 153 mg Cd(II)/g, respectively whereas the amount of Cd(II) ions adsorbed on the plain carboxymethylcellulose beads was 43 mg/g. Biosorption equilibria were established in about 1 h and the correlation regression coefficients show that the adsorption process can be well defined by Langmuir equation. The temperature change between 15 and 45 °C did not affect the biosorption capacity. The effect of pH was also investigated and the maximum adsorption of Cd(II) ions on the carboxymethylcellulose and both live and heat-inactivated immobilized fungal mycelia were observed at pH 6.0. The carboxymethylcellulose-fungus beads could be regenerated using 10 mM HCl, with up to 98% recovery. The biosorbents were used in five biosorption–desorption cycles and no notable loss in the biosorption capacity was observed. 84% and 68% of cadmium ions were removed from synthetic waste water samples for 100 and 200 mg/L initial concentrations, respectively. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Cd(II), Carboxymethylcellulose, Biosorption, Trametes Versicolor

Abisheva, Z.S. and Zagorodnyaya, A.N. (2002), Hydrometallurgy in rare metal production technology in Kazakhstan. *Hydrometallurgy*, **63** (1), 55-63.

Full Text: [H\Hydrometallurgy63, 55.pdf](H/Hydrometallurgy63,%2055.pdf)

Abstract: This paper is an overview of the application of hydrometallurgy in the processing of minerals in Kazakhstan. Hydrometallurgical processes are generally used for the recovery of rare metals.

Keywords: Hydrometallurgy, Rare metals, Extraction, Sorption

Vegliò, F., Esposito, A. and Reverberi, A.P. (2002), Copper adsorption on calcium alginate beads: Equilibrium pH-related models. *Hydrometallurgy*, **65** (1), 43-57.

Full Text: [H\Hydrometallurgy65, 43.pdf](H/Hydrometallurgy65,%2043.pdf)

Abstract: In the present work, a study of adsorption of copper(II) ions onto calcium alginate beads has been carried out. In spite of many works reported in the literature on this subject (here reviewed), this work was mainly aimed at developing a methodological approach to study adsorption and biosorption of heavy metals considering a mathematical modelling including pH. Generally, in the adsorption isotherms, this parameter must be maintained constant to use the usual equilibrium models, such as Langmuir, Frendlich and Redlich-Peterson equations.

pH-edge tests are been proposed and carried out to study the equilibrium and several empirical and semiempirical models are proposed to describe and to fit all the experimental data, including pH as independent variable. pH and equilibrium concentration can be considered at the same time in the mathematical modelling of biosorption equilibrium. A statistical and physical discrimination among rival models has also been performed to select the best model.

The results show that pH-edge tests can be used to describe the equilibrium data and that the proposed models are able to fit the experimental results using a mathematical model with just three adjustable parameters. The behaviour of calcium alginate with respect to copper biosorption is characterised over a wide range of pH conditions and this approach can be extended to other biosorbent materials using other heavy metals.

Keywords: Copper Adsorption, Calcium Alginate, Equilibrium, Mathematical Modelling

Navarro, P. and Alguacil, F.J. (2002), Adsorption of antimony and arsenic from a copper electrorefining solution onto activated carbon. *Hydrometallurgy*, **66** (1-3), 101-105.

Full Text: [H\Hydrometallurgy66, 101.pdf](H/Hydrometallurgy66,%20101.pdf)

Abstract: Removal of arsenic, antimony and bismuth impurities from copper electrolytes is a primary target in copper electrorefineries. The present work investigates the possibilities of carbon adsorption technology in the removal of arsenic and antimony from a real Chilean electrolyte. Various variables which affect the metal adsorption/desorption operations are studied.

Keywords: Copper Electrolytes, Antimony, Arsenic, Purification, Activated Carbon

Vegliò, F., Di Biase, A., Beolchini, F. and Pagnanelli, F. (2002), Heavy metal biosorption in binary systems: simulation in single- and two-stage UF/MF membrane reactors. *Hydrometallurgy*, **66** (1-3), 107-115.

Full Text: [H\Hydrometallurgy66, 107.pdf](H/Hydrometallurgy66,%20107.pdf)

Abstract: in this paper, the continuous biosorption of binary metal systems onto Sphaerotilus natans cells confined in a membrane reactor was studied. The simulation of the dynamic response of the system to step perturbations was performed developing a model based on the metal mass balances and the Langmuir competitive isotherm. Simulation profiles predict the effect of the different affinity of the metals determined in previous batch tests: in particular considering binary systems and assuming a reversible adsorption phenomenon the metal with the lower affinity constant is replaced by the other (overshoot). A dimensionless formulation of the dynamic model was developed to describe the effect of operative (feed composition) and equilibrium parameters (maximal adsorbent capacity and relative metal affinity). Single- and two-stage reactor configurations were compared outlining the possibility of concentrating the metals in different stages according to their affinity for the adsorbent sites. (C) 2002 Published by Elsevier Science B.V.

Keywords: Biosorption, Heavy Metals, Membrane Reactor, Dynamic Simulation, Multimetal System, Copper(II)

Meunier, N., Blais, J.F. and Tyagi, R.D. (2002), Selection of a natural sorbent to remove toxic metals from acidic leachate produced during soil decontamination. *Hydrometallurgy*, **67** (1-3), 19-30.

Full Text: [H\Hydrometallurgy67, 19.pdf](H/Hydrometallurgy67,%2019.pdf)

Abstract: The purpose of this study was to examine the efficiency with which some natural adsorbents remove heavy metals, especially lead, from very acidic leachate produced during soil decontamination by a chemical leaching process using hydrochloric acid. Sorption assays were done in shaken flasks in the presence of cocoa shells, cedar bark, pine bark, spruce bark, vermiculite and volcanic rocks. Cocoa shells were the most efficient sorbent with a maximal capacity of fixation (qmax) Of 2.60 mg Pb/g measured during assays conducted with an acidic soil leachate (initial pH = 1.59 and [Pb](i) = 45.4 mg/L). Cedar bark can also be used for metal removal in very acidic solutions but are less efficient than cocoa shells. This study also demonstrated that the presence of various metals and cations in the acidic leachate of soil induced a slight reduction in lead uptake by cocoa shells and cedar bark. Thus, a q(max) value of 3.35 mg Pb/g was measured during assays conducted with a synthetic lead solution (initial pH = 1.73 and [Pb](i) = 42.3 mg/L). Kinetic measurements of lead removal by cocoa shells have revealed that sorption equilibrium was obtained after approximately 4 h of contact. Sorption experiments done with various granulometric fractions of cocoa shells have shown that this material does not need to be crushed to be efficient. Further research is necessary in order to develop a suitable method for soil decontamination by acidic leaching and metal recovery by sorption on cocoa shells. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Acid, Adsorbents, Adsorption, Adsorption, Bark, Biosorption, Cedar Bark, Cocoa Shells, Contaminated Soil, Decontamination, Extraction, Heavy Metals, Heavy-Metals, Industrial-Wastes, Leaching, Lead, Low-Cost Adsorbents, Metal, Metals, Modified Barks, Recovery, Removal, Soil, Sorption, Synthetic Solutions

Palmieri, M.C., Volesky, B. and Garcia, Jr., O. (2002), Biosorption of lanthanum using *Sargassum fluitans* in batch system. *Hydrometallurgy*, **67** (1-3), 31-36.

Full Text: [H\Hydrometallurgy67, 31.pdf](H/Hydrometallurgy67,%2031.pdf)

Abstract: Separation and purification of lanthanum from other rare-earth (RE) elements are highly complex processes comprising several steps of extraction using organic solvents or ion-exchange resins at high costs. In order to study the biosorption process as an alternative for conventional lanthanum recovery, this work investigated some basic aspects of lanthanum–*Sargassum* biomass interactions in batch equilibrium contact. The dynamics of biosorption, influence of pH, and the desorption of this RE were investigated. Maximum biosorption coefficient (*q*max) increased from 0.05 at pH 2 to 0.53 mmol g-1 at pH 5 for lanthanum sulfate. When lanthanum chloride was used, a higher *q*max at pH 5 (0.73 mmol g-1) was observed as compared to the sulfate salt (*q*max = 0.53 mmol g-1) at the same pH. Adsorption and desorption curves pointed out a complete recovery of metal adsorbed in the *Sargassum fluitans* biomass, showing a reversibility of this process and indicating the potential of biosorption for lanthanum removal and recovery.

Keywords: Biosorption, *Sargassum Fluitans*, Bioaccumulation, Rare-Earths, Lanthanum

Genç, Ö., Arpa, Ç., Bayramoğlu, G., Arıca, M.Y. and Bektaş, S. (2002), Selective recovery of mercury by Procion Brown MX 5BR immobilized poly(hydroxyethylmethacrylate/chitosan) composite membranes. *Hydrometallurgy*, **67** (1-3), 53-62.

Full Text: [H\Hydrometallurgy67, 53.pdf](H/Hydrometallurgy67,%2053.pdf)

Abstract: Metal chelating membranes have advantages as adsorbents in comparison to conventional microspheres or beads because they are not compressible and they considerably eliminate internal diffusion limitations. The aim of this communication was to explore in detail the performance of Procion Brown MX 5BR immobilized poly(hydroxyethylmethacrylate/chitosan) composite membranes, (also called interpenetrating network, IPN, membranes) for removal of three toxic heavy metal ions, namely, Cd(II), Pb(II) and Hg(II) from aquatic systems. The composite membranes were characterized by elemental analysis, scanning electron microscopy and Fourier Transform Infrared (FTIR) spectroscopy. The incorporated amount of the Procion Brown MX 5BR was calculated as 0.036 μmol/cm2 from the nitrogen and sulphur stoichiometry. The adsorption capacity for selected heavy metal ions from aqueous media containing different amounts of these ions (30–400 mg/L) and at different pH values (2.0–6.0) was investigated. Adsorption capacity of the membranes increased with time during the first 45 min and then levelled off toward the equilibrium adsorption. The maximum amounts of heavy metal ions adsorbed were found as 18.5, 22.7 and 68.8 mg/g for Cd(II), Pb(II) and Hg(II), respectively. Competitive adsorption of the metal ions was also studied. When the metal ions competed, the adsorbed amounts were found as 1.8 mg Cd(II)/g, 2.2 mg Pb(II)/g and 52.6 mg Hg(II)/g. Under competitive conditions, the system showed a very high selectivity for Hg(II) ions. The membrane can be regenerated by washing with a solution of nitric acid (0.01 M). The desorption ratio achieved was as high as 95%. These membranes are suitable for repeated use for more than five adsorption/desorption cycles without any considerable loss in adsorption capacity.

Keywords: p(HEMA/chitosan) Composite Membranes, Procion Brown MX 5BR, Heavy Metal Removal, Pb(II), Cd(II), Hg(II)

Hammaini, A., Ballester, A., Blázquez, M.L., González, F. and Muñoz, J. (2002), Effect of the presence of lead on the biosorption of copper, cadmium and zinc by activated sludge. *Hydrometallurgy*, **67** (1-3), 109-116.

Full Text: [H\Hydrometallurgy67, 109.pdf](H/Hydrometallurgy67,%20109.pdf)

Abstract: The effect of the presence of Pb on the biosorption efficiency of Cu, Cd and Zn by activated sludge was investigated. To evaluate the two-metal sorption system efficiency, simple isotherm curves had to be replaced by three-dimensional sorption isotherm surfaces. In order to describe the isotherm surfaces mathematically, three Langmuir-type models were evaluated. The isotherms indicated a competitive uptake of the different metals with Pb that was preferentially adsorbed. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Biosorption, Activated Sludge, Lead, Copper, Cadmium, Zinc, Wastewater Treatment, Biomass, *Rhizopus-arrhizus* Biomass, Metal, Equilibria, Removal, Adsorption, Peat

Beolchini, F., Pagnanelli, F., Toro, L. and Vegliò, F. (2003), Biosorption of copper by *Sphaerotilus natans* immobilised in polysulfone matrix: Equilibrium and kinetic analysis. *Hydrometallurgy*, **70** (1-3), 101-112.

Full Text: [H\Hydrometallurgy70, 101.pdf](H/Hydrometallurgy70,%20101.pdf)

Abstract: Copper biosorption by *Sphaerotilus natans* immobilised in polysulfone matrices has been studied. Firstly, a rough characterisation of biosorbent beads has been performed, and operating conditions for beads preparation aimed at biosorption have been optimised. Then, the equilibrium of the process was studied in order to determine the effect of pH and biomass concentration inside beads; experimental data were successfully fitted by the Langmuir equation, and the highest value for loading was 5.4 mg/g estimated at pH 5.5 and 0.18 g of lyophilised biomass per gram of beads. Biosorption kinetics has also been studied, and an original kinetic model was developed which is able to correlate experimental data. This model was developed from the Shrinking Core Model, considering a variable copper diffusion coefficient dependent on the process conversion. The estimated values for copper diffusion coefficient were obviously lower than copper diffusivity in water, and they depend on biomass concentration inside beads. Beads regeneration was studied using EDTA, HCl and CaCl2. Satisfactory biosorption performances were observed also after 10 sorption/desorption cycles, with CaCl2 as regeneration solution. All the results confirmed the technical feasibility of the biosorption process by a polysulfone-entrapped biomass even though biosorption efficiency should be improved.

Keywords: Copper, Biosorption, *Sphaerotilus*, Polysulfone, Kinetic Modeling, Immobilised Biomass

Volesky, B. (2003), Biosorption process simulation tools. *Hydrometallurgy*, **71** (1-2), 179-190.

Full Text: [H\Hydrometallurgy71, 179.pdf](H/Hydrometallurgy71,%20179.pdf)

Abstract: Recent research on metal biosorption has been elucidating its mechanisms and principles. For effective metal removal/recovery the process design has to be optimized for every type of application. That is most effectively done based on computer simulations utilizing mathematical models of the process. The methodology is summarized here involving both the equilibrium and dynamic aspects of the sorption process. Often used sorption equilibrium isotherm relationships are listed for modeling one-metal and multimetal systems. Performance modeling of dynamic sorption column systems requires simultaneous consideration of sorption equilibria, sorbate solution chemistry, biosorption mechanism, mass transfer and fluid-flow which all determine the overall sorption performance and the shape of the column breakthrough curve. Computer simulation of a model continuous-flow uranium biosorption process serves as a brief illustration of a more sophisticated approach to describing and predicting performance of dynamic sorption systems.

Keywords: Biosorption, Mathematical Modeling, Process Simulation, Sorption Dynamics, Sorption Performance, Biosorption Review

Arrascue, M.L., Garcia, H.M., Horna, O. and Guibal, E. (2003), Gold sorption on chitosan derivatives. *Hydrometallurgy*, **71** (1-2), 191-200.

Full Text: [H\Hydrometallurgy71, 191.pdf](H/Hydrometallurgy71,%20191.pdf)

Abstract: Four derivatives of chitosan have been prepared by cross-linking and by grafting of sulfur compounds. Sorption isotherms were performed at different pHs in order to optimize the pH conditions at fixed chloride concentration. Sorption isotherms were correlated with gold speciation in solution. Sulfur grafting decreases the influence of the pH on sorption isotherms. Introducing sulfur chelating moieties gives a dual structure to the polymer: chelating and ion exchange capability. Sorption kinetics was influenced by the sorbent dosage and the type of sorbent used.

Keywords: Gold, Chitosan, Sulfur Derivatives, Sorption, Isotherms

Pagnanelli, F., Beolchini, F., Esposito, A., Toro, L. and Vegliò, F. (2003), Mechanistic modeling of heavy metal biosorption in batch and membrane reactor systems. *Hydrometallurgy*, **71** (1-2), 201-208.

Full Text: [H\Hydrometallurgy71, 201.pdf](H/Hydrometallurgy71,%20201.pdf)

Abstract: In this study, a microbial culture of *Arthrobacter* sp. was characterized and tested as heavy metal biosorbent in different experimental conditions (pH and biomass concentrations) and operative configurations (free cell in batch system and membrane reactor).

Biosorption batch trials with free cells were carried out using an original procedure defined as “subsequent additions method” (SAM), consisting of successive additions of heavy metal concentrated solution to a cellular suspension at constant pH.

Mechanistic models for copper and cadmium biosorption have been developed taking into account the acidic properties of the cell wall constituents derived from biomass characterization. These models reveal the complexity of the metal biosorption phenomenon and the need to consider different chemico-physical mechanisms operating simultaneously.

A membrane reactor system is proposed as a means for confining biomass cells, thus permitting a semicontinuous operation and avoiding immobilization procedures. A mathematical model based on metal mass balance considering the effect of pH on equilibrium adsorption fitted well the experimental data at low pH values and biomass concentrations. In contrast, a mathematical model, considering partial cell disruption during the biosorption trial, was necessary to understand and analyze the system behavior at high biomass concentrations.

Keywords: Heavy Metal, Biosorption, Membrane

Niu, H. and Volesky, B. (2003), Characteristics of anionic metal species biosorption with waste crab shells. *Hydrometallurgy*, **71** (1-2), 209-215.

Full Text: [H\Hydrometallurgy71, 209.pdf](H/Hydrometallurgy71,%20209.pdf)

Abstract: Anionic metal complexes are very effectively bound by biomass types containing an abundance of amine groups. Readily available chitinous materials such as acid-washed *Ucides* shells (AWUS) sorbed well anionic gold-cyanide (Au(CN)2-), selenate (SeO42-), chromate (CrO42-) and vanadate (VO43-) at low pH. Equilibrium biosorption uptakes by AWUS were up to 0.17 mmol Au/g AWUS (pH 3.4), 0.15 mmol Se/g (pH 3.0), 0.54 mmol Cr/g (pH 2.0) and 0.79 mmol V/g (pH 2.5). An increased ionic strength (IS) suppressed the primary anion uptake as chloride ions competed for biosorbent protonated sites and higher IS reduced the activity of ions in solution. The biosorption mechanism was suspected to involve electrostatic attraction.

Keywords: Biosorption, Anionic Metal Complexes, Crab Shells, Chitin-Containing Materials, Chemical Speciation

de Carvalho, R.P., Freitas, J.R., de Sousa, A.M.G., Moreira, R.L., Pinheiro, M.V.B. and Krambrock, K. (2003), Biosorption of copper ions by dried leaves: Chemical bonds and site symmetry. *Hydrometallurgy*, **71** (1-2), 277-283.

Full Text: [H\Hydrometallurgy71, 277.pdf](H/Hydrometallurgy71,%20277.pdf)

Abstract: The biosorption of copper by dried leaves was studied by Fourier transform infrared spectroscopy (FTIR) and electron paramagnetic resonance (EPR). From FTIR measurements, we conclude that the presence of copper ions in the biomass affects the bands corresponding to C=C vibrations of carbon rings of the biomass. In the EPR spectra, the Cu2+ ion is seen to be incorporated into the biomass in a site with an axial symmetry. We propose a model for the sorption site where the copper ions are located between two adjacent carbon rings in an interstitial site in the fibers of the biomass.

Keywords: Biosorption, Sorption, Copper, Dried Leaves, FTIR, EPR

Jeon, C. and Höll, W.H. (2003), Application of the surface complexation model to heavy metal sorption equilibria onto aminated chitosan. *Hydrometallurgy*, **71** (3-4), 421-428.

Full Text: [H\Hydrometallurgy71, 421.pdf](H/Hydrometallurgy71,%20421.pdf)

Abstract: The surface complexation model as previously applied to the sorption of ions onto charge-bearing surfaces has been applied to the simultaneous sorption of heavy metal salts and strong acids onto sorbents prepared from aminated chitosan. From the uptake of metals and acids in simple systems generalized separation factors can be calculated from describing the sorption of anions and cations. Plotting these separation factors vs. the dimensionless loadings of the solid phase with metal salts and with strong acid yields two sets of equilibrium constants describing the sorption. The important feature of the theoretical approach is that these constants remain unchanged in multicomponent systems. Therefore, the prediction of multicomponent equilibria is possible. The method has been demonstrated for systems with copper, nickel, and nitric acid as an example. Evaluation of results reveals a satisfactory agreement between experimental data and predicted equilibria of the ternary system.

Keywords: Chitosan, Surface Complexation, Heavy Metal, Biosorption, Sorption Equilibrium

Beolchini, F., Pagnanelli, F., Toro, L. and Vegliò, F. (2003), Copper biosorption by *Sphaerotilus natans* confined in UF membrane module: Experimental study and kinetic modeling. *Hydrometallurgy*, **72** (1-2), 21-30.

Full Text: [H\Hydrometallurgy72, 21.pdf](H/Hydrometallurgy72,%2021.pdf)

Abstract: Copper biosorption by *Sphaerotilus natans* is presented in this work. The process was realized in an ultrafiltration membrane reactor in order to confine cells. Experimental tests were performed under different conditions of pH, cell concentration and copper concentration in the stream to be treated. Copper concentration in the permeate was monitored during time in order to determine the process performance. Experimental data evidenced the very high sorption abilities of the employed microorganism. Kinetic modeling of the process was also performed and a mathematical model was developed, which takes into account a variation vs. time of copper retention coefficient coupled with biomass concentration. The model was able to successfully match experimental data.

Keywords: *Sphaerotilus Natans*, Membrane Process, Biosorption, Copper, Kinetic Modeling

Zhang, H.G., Ritchie, I.M. and La Brooy, S.R. (2004), The adsorption of gold thiourea complex onto activated carbon. *Hydrometallurgy*, **72** (3-4), 291-301.

Full Text: [H\Hydrometallurgy72, 291.pdf](H/Hydrometallurgy72,%20291.pdf)

Abstract: The equilibrium and kinetics for the adsorption of gold onto activated carbon from acidic thiourea solutions have been studied. The equilibrium gold loading decreases with increasing thiourea concentration, pH and temperature. The gold loading is not affected by small amounts of Fe2+ or Fe3+, but is greatly lowered by Cu2+ presumably through competitive adsorption. The rate of gold adsorption at the initial stage, in terms of the decrease of gold concentration in solution, can well be described with first-order kinetics. The rate increases with increased initial gold concentration, agitation and temperature, but is not greatly affected by thiourea concentration or the presence of Fe2+. Ag+ and Cu2+ ions significantly reduce the rate since they strongly compete for the surface sites. A high concentration of Fe3+ (5 g/L) also substantially reduces the rate, probably due to a change in solution chemistry. Gold is normally adsorbed on activated carbon as the gold thiourea complex. However, partial decomposition of the complex to metallic gold has been observed under certain conditions. The surface of the activated carbon loaded with gold has been studied using SEM, EDS and XPS techniques.

Keywords: Gold, Thiourea, Activated Carbon, Adsorption

Feng, D. and Aldrich, C. (2004), Recovery of chromite fines from wastewater streams by column flotation. *Hydrometallurgy*, **72** (3-4), 319-325.

Full Text: [H\Hydrometallurgy72, 319.pdf](H/Hydrometallurgy72,%20319.pdf)

Abstract: In the Western Chrome Mine in South Africa, the process water stream contains approximately 3% chromite fines (<100 μm), which report to the tailings dam. This results in resource loss and water contamination. Consequently, in this paper, the effects of pH, as well as the influence of anionic and cationic collectors on the floatability of chromite fines in columns, were investigated. Electrokinetic studies were used to elucidate the mechanism of collector adsorption and the findings were correlated with the optimal flotation conditions. The presence of the aqueous metal species Al3+, Cr3+, Fe2+ and Mg2+ resulting from the dissolution of chromite appeared to have a significant influence on the flotation of chromite fines. These species were found to adsorb on chromite surfaces and shift the point of zero charge (PZC) of the chromite. The optimal recovery of chromite fines was observed at a pH of approximately 4 for anionic flotation and 11 for cationic flotation. In column flotation tests for the fresh wastewater stream containing 3% chromite fines, a recovery and grade of approximately 40% and 43.5%, respectively were obtained with sodium dodecyl sulphate (SDS) flotation. A recovery and grade of approximately 32% and 45%, respectively were obtained with cetyl trimethyl ammonium bromide (CTMAB) flotation. Both cationic and anionic flotation deteriorated with an increase in aging of the chromite.

Keywords: Chromite fines, Wastewater streams, Column flotation

Ibáñez, J.P. and Umetsu, Y. (2004), Uptake of trivalent chromium from aqueous solutions using protonated dry alginate beads. *Hydrometallurgy*, **72** (3-4), 327-334.

Full Text: [H\Hydrometallurgy72, 327.pdf](H/Hydrometallurgy72,%20327.pdf)

Abstract: The uptake of trivalent chromium by protonated dry alginate beads from aqueous solutions was investigated at 25 °C in batch-type experiments. The differences between the mechanisms associated with formation of alginate beads and with metal uptake were demonstrated. Uptake was coupled with a release of protons; this ion exchange was found to be the mechanism of the uptake.

The uptake was strongly dependent on the Cr-bearing solution pH up to a value of around 4.5. Uptake reaches a value as high as 112 mg of chromium per g of alginate beads (dry wt.) at pH 4.5; this uptake is higher than that reported for several biosorbents. The experimental data fitted the Langmuir adsorption model; however, the maximum uptake computed from it was 32% lower than the value measured. SEM analysis of the cross section of beads after uptake experiments showed no evidence of precipitation of chromium within the alginate beads at the pH ranges tested.

A residual concentration around 0.3 mg/L of chromium, which allows safe discharge of solutions having Cr(III), was reached when alginate beads were challenged with a solution initially having as low as 10 mg/L of the metal.

EPMA-EDX analysis of Cr-loaded beads showed a uniform distribution of chromic species throughout the structure of alginate beads, regardless of the solution pH.

Keywords: Trivalent Chromium, Aqueous Solutions, Protonated Dry Alginate Beads

Feng, D. and Aldrich, C. (2004), Adsorption of heavy metals by biomaterials derived from the marine alga *Ecklonia maxima*. *Hydrometallurgy*, **73** (1-2), 1-10.

Full Text: [H\Hydrometallurgy73, 1.pdf](H/Hydrometallurgy73,%201.pdf)

Abstract: The adsorption of heavy metals onto biomaterial derived from the marine alga *Ecklonia maxima* was investigated via batch experiments. The adsorption equilibria of Cu, Pb and Cd could be represented by Langmuir isotherms and the capacity of fresh alga for Cu, Pb and Cd was approximately 85–94, 227–243 and 83.5 mg/g dry alga, respectively. The rate of adsorption onto the marine alga was high. The alga particle size played an important role in the adsorption behaviour. The coarse alga particles had a higher adsorption capacity and slower adsorption kinetics and could be regenerated without significant loss of capacity. In contrast, the fine alga particles had a lower adsorption capacity and faster adsorption kinetics and could not be regenerated without significant loss of capacity. Comparison with a commercial resin indicated that the activated biomass derived from *E. maxima* could be used as an efficient biosorbent for the treatment of waste waters containing heavy metals.

Keywords: Biosorption, *Ecklonia Maxima*, Heavy Metal, Removal, Particle Size, Regeneration

Ho, Y.S., Chiu, W.T., Hsu, C.S. and Huang, C.T. (2004), Sorption of lead ions from aqueous solution using tree fern as a sorbent. *Hydrometallurgy*, **73** (1-2), 55-61.

Full Text: [H\Hydrometallurgy73, 55.pdf](H/Hydrometallurgy73,%2055.pdf) [H\Hydrometallurgy-Ho.pdf](H/Hydrometallurgy-Ho.pdf)

Abstract: This study is on sorption of lead ions on an agricultural by-product, tree fern. Equilibrium isotherms have been measured and modeled. The equilibrium sorption capacity of lead(II) was determined from the Langmuir isotherm and found to be 40.0 mg/g. Based on the assumption of the pseudo-second order mechanism, a batch sorption model was developed to predict the rate constant of sorption, the equilibrium sorption capacity and the initial sorption rate with the effect of initial lead(II) concentration and temperature. The sorption rate was found to increase with temperature, and an activation energy of approximately 87 kJ/mol was determined from the pseudo-second order rate constants. The findings of this investigation suggest that chemical sorption plays a role in controlling the sorption rate. (C) 2004 Elsevier B.V. All rights reserved.

Keywords: Isotherm, Kinetics, Pseudo-Second Order Mechanism, Lead, Tree Fern, Sphagnum Moss Peat, Adsorption, Cadmium

Näsi, J. (2004), Statistical analysis of cobalt removal from zinc electrolyte using the arsenic-activated process. *Hydrometallurgy*, **73** (1-2), 123-132.

Full Text: [H\Hydrometallurgy73, 123.pdf](H/Hydrometallurgy73,%20123.pdf)

Abstract: This paper presents the results from a statistical study of a continuous solution purification procedure. The purpose of the work was to study the role of various reagents acting simultaneously and their correlations with the calculated deposition efficiencies of impurities.

Cobalt cementation is the second part of the electrolyte purification section at Outokumpu Kokkola Zinc, Finland. At Kokkola, zinc is produced by an aqueous electrowinning process. The zinc sulphate solution is processed in a three-part electrolyte purification process where impurities more noble than zinc are removed. In the second part of the purification, arsenic solution and zinc powder are added to create conditions where aqueous impurities are reduced to solid metals/arsenides. The deposition process is, in principle, simple, but purification results show that there are large variations in the calculated deposition efficiencies. The deposition efficiencies depend on several accelerating and decelerating components, of which copper is the best known and documented.

The data is collected from a pilot scale continuous purification process. The significance of the composition of the incoming solution, the deposition components, together with zinc and arsenic feeds are evaluated by using a feed solution consisting of variable amounts of the impurities under study. Process data is evaluated by calculating correlations to the impurity deposition efficiencies. Results reveal that the success of purification is a combination of several components and that all of these components have a fairly low correlation to deposition efficiencies by themselves. In the purification process, deposition efficiencies tend to decline more slowly than components affecting them in the feed solution. Positively affecting components are a high copper content in the feed solution, combined with a high zinc powder feed and low arsenic feed. Weaker positive effects are formed by high aluminium with low calcium and silicon contents in the feed solution.

Keywords: Statistical Analysis, Solution Purification, Cobalt Removal, Deposition Efficiency

Chojnacka, K., Chojnacki, A. and Górecka, H. (2004), Trace element removal by *Spirulina* sp. from copper smelter and refinery effluents. *Hydrometallurgy*, **73** (1-2), 147-153.

Full Text: [H\Hydrometallurgy73, 147.pdf](H/Hydrometallurgy73,%20147.pdf)

Abstract: The paper presents the studies carried out on the applicability of microalga *Spirulina* sp. for trace elements removal from the conditioned (large volume, low contaminants concentration) industrial effluent, from copper smelter and refinery, containing a variety of trace elements, particularly mercury, cadmium, ammonia–nitrogen in concentrations exceeding Polish permissible limits for effluents discharged into water and soil. Trace elements removal is the problem still unresolved due to very low concentration of contaminants (on the level of μg/kg). In the current work, low-cost treatment of this effluent with the use of bioaccumulation method with mixotrophic cyanobacteria *Spirulina* sp. is proposed, in which the real effluent is contacted with cells lyophilizate (in proportions 0.25 g cells/1 L effluent). Neither additional nutrients nor lighting were provided.

Keywords: Industrial Wastewater Treatment, Heavy Metals, Bioaccumulation, *Spirulina* sp.

Meunier, N., Blais, J.F. and Tyagi, R.D. (2004), Removal of heavy metals from acid soil leachate using cocoa shells in a batch counter-current sorption process. *Hydrometallurgy*, **73** (3-4), 225-235.

Full Text: [H\Hydrometallurgy73, 225.pdf](H/Hydrometallurgy73,%20225.pdf)

Abstract: Soil washing is a widely used approach for metal-polluted sites decontamination. Metals solubilized during soil washing have to be extracted from the resulting soil leachates. Cocoa shells (CS) have been identified as a very efficient natural sorbent to remove Pb and other metals from acid soil leachates (ASL). A counter-current sorption process (CCSP) has been defined to reduce the CS requirement for ASL treatment. The aim of this study was to evaluate the batch process efficiency at laboratory scale. The ASL (pHi=2.0) used in this study was initially contaminated by Pb (27.1±2.9 mg/L), Cu (2.93±0.27 mg/L) and Zn (17.1±0.9 mg/L). Three to five short time sorption steps (contact TIME=1 h) using 10 g CS per liter of ASL allowed a reduction of the cocoa shells quantity required for the ASL treatment by a factor of 2 to 4, in comparison to a conventional single adsorption step process. In addition, the results show that the CCSP increases the Pb measured concentration sorbed from 1060 mg/kg for a one-step process to an average value of 2730±220 mg/kg for a five-step process. This CCSP can probably be efficiently used with other natural sorbents for the treatment of different types of metal-contaminated effluents.

Keywords: Sorption, Cocoa shells, Heavy metal, Lead, Soil, Acidic, Effluent, Removal

Selatnia, A., Bakhti, M.Z., Madani, A., Kertous, L. and Mansouri, Y. (2004), Biosorption of Cd2+ from aqueous solution by a NaOH-treated bacterial dead *Streptomyces rimosus* biomass. *Hydrometallurgy*, **75** (1-4), 11-24.

Full Text: [H\Hydrometallurgy75, 11.pdf](H/Hydrometallurgy75,%2011.pdf)

Abstract: The cadmium biosorption capacity of a *Streptomyces rimosus* biomass treated with NaOH (0.1 M) was studied in the batch mode. After pretreatment of biomass at the ambient temperature, optimum conditions of biosorption were found to be: a biomass particle size between 50 and 160 μm, an average saturation contact time of 1 h, a biomass concentration and a stirring speed in the range of 2.5–3 g L−1 and 200–250 rpm, respectively. The external mass transfer was found to be the controlling step in the overall sorption process. The equilibrium data could be fitted by Langmuir isotherm equation. Under these optimal conditions, a biosorption capacity of 63.3 mg Cd2+/g biomass was obtained.

Keywords: Cadmium, *Streptomyces Rimosus*, Biosorption, Waste-Water Treatment, Batch Processing

Senanayake, G. (2004), Analysis of reaction kinetics, speciation and mechanism of gold leaching and thiosulfate oxidation by ammoniacal copper(II) solutions. *Hydrometallurgy*, **75** (1-4), 55-75.

Full Text: [H\Hydrometallurgy75, 55.pdf](H/Hydrometallurgy75,%2055.pdf)

Abstract: Previous researchers have rationalized the thiosulfate oxidation by ammoniacal copper(II) on the basis of the rate equation −d[Cu(II)]/d*t* = *k*[Cu(II)][S2O32−]/[NH3] for the decomposition of the reaction intermediate Cu(NH3)3(S2O3)0, but no such detailed analysis has been made in the case of gold. This work revisits literature data to show that the oxidation of thiosulfate takes place via mixed complexes Cu(NH3)2(S2O3)*n*−(2*n*−2) (*n* = 1 or 2). The oxidation can be considered as a first-order decomposition of these complexes, with a rate constant *k*Cu(1) = 4×10−4 s−1, to produce S2O3− which undergoes dimerization to S4O62−. It can also be treated as a second-order decomposition of Cu(NH3)3(S2O3)0 or Cu(NH3)2(S2O3)0 with rate constants *k*Cu(2) = 0.2 and 0.1 L mol−1 s−1, respectively, which produce S4O62− in one step.

The literature data reported for gold dissolution in the copper(II)–ammonia–thiosulfate system show first-order dependence with respect to copper(II) and thiosulfate concentration, but it is relatively less affected by ammonia and hydroxide concentrations. At higher concentrations of copper(II) and thiosulfate, the rate becomes zero order with respect to these reagents. The leaching data obey a shrinking core model for both gold powder and carbonaceous or roasted ore with an apparent rate constant *k*sc≈10−5 s−1, but the *k*sc also shows a first-order dependence with respect to the measured copper(II) concentration in solution. The copper(II) sepeciation analysis shows Cu(NH3)2(S2O3)22−, Cu(NH3)2(S2O3)0 and Cu(NH3)3(S2O3)0 as the predominant species in ammoniacal copper(II)–thiosulfate solutions. Thus, gold oxidation can be represented by a sequence of equations representing adsorption and redox reactions.

Keywords: Gold Leaching, Ammoniacal Copper(II), Thiosulfate, Kinetic Models, Reaction Mechanism

Beolchini, F., Pagnanelli, F., Toro, L. and Vegliò, F. (2004), Continuous biosorption of copper and lead in single and binary systems using *Sphaerotilus natans* cells confined by a membrane: Experimental validation of dynamic models. *Hydrometallurgy*, **76** (1-2), 73-85.

Full Text: [H\Hydrometallurgy76, 73.pdf](H/Hydrometallurgy76,%2073.pdf)

Abstract: Biosorption of heavy metals using membrane reactors as confining devise for free cells is an alternative process to remove these metallic pollutants from aqueous solution. In this paper, experimental data and modelling of heavy metal biosorption onto *Sphaerotilus natans* cells confined by a ultrafiltration/microfiltration (UF/MF) membrane reactor are reported. Biosorption tests using single and binary metallic solutions (Cu, Pb and Cu–Pb) denoted the biomass affinity (Pb>Cu), the competition among metals simultaneously present in the system, the filtrate flux decline and the change of metal retention coefficient on the membrane for pore plugging by cell fragments. Dynamic modelling is developed considering the unsteady mass balances of the metal in the system and the equilibrium parameters obtained by biosorption batch tests using Langmuir models. Experimental validation of the dynamic models denoted the importance of partial degradation of cells, which is specifically considered in modelling by introducing a time-depending profile for the biomass concentration.

Keywords: Heavy Metals, Biosorption, Membrane Reactor, Multimetal System, Dynamic Modelling

? Cox, M., Pichugin, A.A., El-Shafey, E.I. and Appleton, Q. (2005), Sorption of precious metals onto chemically prepared carbon from flax shive. *Hydrometallurgy*, **78** (1-2), 137-144.

Full Text: [2005\Hydrometallurgy78, 137.pdf](2005/Hydrometallurgy78,%20137.pdf)

Abstract: The sorption of gold, silver, palladium and platinum chlorides onto a carbonaceous sorbent prepared from flax shive by treatment with hot sulfuric acid is described. The results showed that the rate of sorption followed a first-order relationship with the initial rate described largely by pore diffusion. The sorption of the metal ions followed the Langmuir equation with the calculated monolayer capacities following the order: Au(III) > Pd(II) > Ag(I) > Pt(II) approximate to Pt(IV). The sorption process was shown to occur by ion exchange reactions with functional groups on the sorbent. Once the metal ions had been loaded onto the sorbent, they were, except for platinum(IV), reduced by the sorbent to the metal with oxidation of the sorbent generating further ion exchange sites for sorption of the metal ions. This allowed the possibility of recycling the sorbent until significant amounts of the precious metal had been accumulated, thus simplifying the recovery of the metal by combustion of the residual sorbent. (c) 2005 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Carbonaceous Sorbent, Precious Metals, Flax, Kinetics, Redox, Activated Carbon, Adsorption, Reduction, Chloride, Removal, Gold, Adsorbent, Property, Kinetics, Fiber

? Laatikainen, M. and Paatero, E. (2005), Gold recovery from chloride solutions with XAD-7: Competitive adsorption of Fe(III) and Te(IV). *Hydrometallurgy*, **79** (3-4), 154-171.

Full Text: [2005\Hydrometallurgy79, 154.pdf](2005/Hydrometallurgy79,%20154.pdf)

Abstract: In this study, competitive adsorption of metal chloro complexes on the polymer adsorbent XAD-7 has been investigated. Au(III), Fe(III) and Te(IV) dissolved in HCl and alkali metal chloride solutions were used as the model compounds. Adsorption equilibria were measured for individual elements as well as for binary pairs and the data were correlated in terms of activities of the adsorbable complexes. Finally, the equilibrium model together with the experimentally determined apparent diffusion coefficients was utilized in simulation of break-through curves of multicomponent mixtures.

Adsorption of gold and iron can be explained satisfactorily by taking into account the formation equilibria of the tetrachloro complexes and the difference in their acid strengths. The uptake of the weakly acidic HAuCl4 depends only slightly on the HCl concentration and adsorption was substantially stronger in NaCl solutions. The opposite trends observed for iron were due to the lower stability and higher degree of dissociation of HFeCl4. The adsorbable complex of Te(IV), HTe(OH)Cl4, has lower affinity for the adsorbent, but at high concentrations it can reduce substantially the adsorption capacity for Au(III) and Fe(III). This effect was confirmed with the adsorption column runs, and the change in the break-through behavior of Au(III) and Fe(III) can be explained quantitatively by the simulation model.

Keywords: Adsorption, Gold, Iron, Tellurium, Chloride complex

? Dhakal, R.P., Ghimire, K.N. and Inoue, K. (2005), Adsorptive separation of heavy metals from an aquatic environment using orange waste. *Hydrometallurgy*, **79** (3-4), 182-190.

Full Text: [2005\Hydrometallurgy79, 182.pdf](2005/Hydrometallurgy79,%20182.pdf)

Abstract: Preparation of adsorption gel for metal ions from orange wastes by simple chemical modification was investigated. Two types of adsorption gels, Ca2+-form and H+-form gels, were prepared by saponifying orange juice residues with calcium hydroxide and its subsequent acid treatment, respectively. Both gels were adequately stable against dissolution in aquatic environment. The Ca2+-form gel was effective for the complete and selective removal of Pb(II), Cu(II) and Fe(III) compared with other divalent metal ions. The selectivity order for metal ion uptake by the gel is Pb(II) > Fe(III) > Cu(II) > Cd(II) ≈ Zn(II) > Mn(II). Among these metal ions, the maximum loading capacities for divalent metal ions such as Pb(II), Cd(II) and Zn(II) were evaluated as 1.1 mol/kg-dry gel while that for Fe(III) was 1.55 mol/kg-dry gel. The H+-form gel showed a different adsorption profile for Fe(III) compared to the Ca2+-form gel. The experimental results clearly suggest that both gels are quite effective for removing heavy metal ions in acidic pH ranges.

Keywords: Adsorption Gel, Orange Waste, Heavy Metals, Cation Exchange, Environmentally Benign Separation

? Laatikainen, M. and Paatero, E. (2005), Studies on the interaction of mercury(II) and uranyl(II) with modified chitosan resins. *Hydrometallurgy*, **80** (1-2), 13-22.

Full Text: [2005\Hydrometallurgy80, 13.pdf](2005/Hydrometallurgy80,%2013.pdf)

Abstract: Chitosan polymer was cross-linked using glutardialdehyde. The resin obtained was chemically modified through the reaction with ethylenediamine and (3-amino-1,2,4-triazole-5-thiol) to produce chitosan/amine and chitosan/azole resins, respectively. The resins obtained were tested for the uptake of Hg2+ and UO22+ from their aqueous solutions. The chitosan/amine resin showed higher uptake towards Hg2+ and UO22+ compared to chitosan/azole. This was attributed to the fact that the azole moiety does not furnish efficient attachment to the metal ions compared to the amine active sites which are more compact. Selective separation of Hg2+ from UO22+ was achieved at pH < 2. This was explained by the ability of Hg2+ to adsorb on chitosan resin through ion-exchange in the acidic media while UO22+ would not. Uptake values up to 2.0 and 1.7 mmol/g were reported for Hg2+ and UO22+, respectively, on chitosan/amine. Application of the Langmuir model to the adsorption data indicated a higher binding of Hg2+ to the resin compared to UO22+. The adsorbed Hg2+ or UO22+ on the studied resins was eluted using H2SO4 and HCl, respectively.

Keywords: Chitosan, Mercury,Uranium, Resin, Chelating

? Atia, A.A. (2005), Adsorption of silver(I) and gold(III) on resins derived from bisthiourea and application to retrieval of silver ions from processed photo films. *Hydrometallurgy*, **80** (1-2), 98-106.

Full Text: [2005\Hydrometallurgy80, 98.pdf](2005/Hydrometallurgy80,%2098.pdf)

Abstract: Various resins were synthesized through polymerization of bisthiourea (BS) with formaldehyde at different molar ratios. The uptake behaviour of the resins towards Ag(I) and Au(III) from their aqueous solutions was studied. The results showed that the total uptake of both Ag(I) and Au(III) increases as the content of bisthiourea in the matrix increases. The resin synthesized from a 2:1 mixture of bisthiourea and formaldehyde showed maximum uptake capacity of 8.25 and 3.63 mmol/g for Ag(I) and Au(III), respectively. The adsorption data were interpreted based on the metal ion species formed at different pHs and from the data on surface charge of the resin obtained from zeta potential measurements. The adsorption of Ag(I) and Au(III) on the resin followed the Langmuir model and the adsorption parameters were calculated. The resin showed noticeably higher efficiency compared with commercial resins towards the recovery of silver from processed photo films.

Keywords: Silver, Gold, Resin, Bisthiourea, Recovery, Photo Films

? Pagnanelli, F., Mainelli, S. and Toro, L. (2005), Optimisation and validation of mechanistic models for heavy metal bio-sorption onto a natural biomass. *Hydrometallurgy*, **80** (1-2), 107-125.

Full Text: [2005\Hydrometallurgy80, 107.pdf](2005/Hydrometallurgy80,%20107.pdf)

Abstract: A methodological approach for validation, optimization and lumping of mechanistic models for heavy metal sorption onto composite natural matrices is proposed. It follows a previously developed mechanistic model for biosorption onto olive pomace, based on potentiometric titrations and Cu, Pb and Cd sorption tests at different pH. This model assumes two main kinds of active sites (carboxylic and phenolic groups) and three surface complexation reactions among these sites and metallic species in solution. It is able to represent the biosorption of Cu, Cd and Pb according to a general-validity reaction scheme in both acid and basic pH ranges. The identification of the most significant contributions of surface complexes by model simulations, along with sensitivity analysis oriented towards a lumped model, assumes one kind of active site (carboxylic) and two complexation reactions occurring in the pH 3-5 range. Simultaneous regression of titration data, first derivative plot of titration, and sorption data according to this lumped model, allow an improvement of experimental data representation by using a reduced number of parameters (i.e. model discrimination by statistical analysis). Contributions of surface complexes and sensitivity analysis show that all the assumed reactions of this lumped model are significant and necessary to represent biosorption of Cu, Cd and Pb in pH range 3-5. (c) 2005 Elsevier B.V. All rights reserved.

Keywords: Biosorption, Heavy Metals, Copper, Cadmium, Lead, Mechanistic Models, Olive Pomace, Ion-Binding, Adsorption Models, Olive Pomace, Competitive Adsorption, Heterogeneous Surfaces, Sphaerotilus-Natans, Aqueous-Solutions, Humic Substances, Organic-Matter, Solid Residues

? Hammy, F., Mercier, G. and Blais, J.F. (2005), Removal of lead in APCR leachates from municipal solid waste incinerator using peat moss in a batch counter-current sorption process. *Hydrometallurgy*, **80** (4), 232-240.

Full Text: [2005\Hydrometallurgy80, 232.pdf](2005/Hydrometallurgy80,%20232.pdf)

Abstract: Air pollution control residues (APCR) resulting from municipal solid wastes (MSW) are most often classified as hazardous waste. A treatment process employing aqueous and alkaline leaching was developed to extract Pb, the principal contaminant found in these residues. This treatment process generates highly alkaline (pH between 11.3 and 12.5) and Pb-loaded effluent. The objective of this study was to evaluate the potential of a counter-current sorption process (CCSP) for Pb using peat moss (PM) in order to treat leachates emanating from diverse types of APCR (used lime, electrofilter ash and boiler ash). Results have shown that the CCSP process diminishes the quantity of PM required to treat these effluents by a factor of 4. Thus, a concentration of 4 g PM/L is sufficient to lower the initial Pb concentration in used lime leachate from approximately 150 mg/L to less than 0.5 mg/L. By reusing treated effluent for additional leaching and sorption cycles, our research has also shown that the quantity of water consumed during the treatment process can be reduced by 50%. Lastly, considering both the low cost of acquiring PM and managing saturated adsorbents, in addition to the efficient recuperation of Pb, the CCSP process has great potential for full-scale use.

Keywords: Sorption, Peat Moss, Heavy Metals, Lead, Ash, APCR, Effluent, Remo

? Rane, M.V., Sadanandam, R., Bhattacharya, K., Tangri, S.K. and Suri, A.K. (2006), Use of mixed-metals isotherm and log–log McCabe Thiele’s diagram in solvent extraction—A case study. *Hydrometallurgy*, **81** (1), 1-8.

Full Text: [2006\Hydrometallurgy80, 1.pdf](2006/Hydrometallurgy80,%201.pdf)

Abstract: Nickel and cobalt are invariably associated with other transition element impurities like copper, zinc, iron, etc. It is essential to remove these impurities in order to attain the high standards of purity required for specific applications. Solvent extraction is a well-tested route for this purpose. The present paper describes the application of two novel concepts, viz. mixed-metals isotherm and log–log McCabe Thiele’s (MT) diagram in solvent extraction. Mixed-metals isotherms can be applied to a system in which two metal ions compete for a single extractant. If these two metal ions are required to be extracted as a group, mixed-metals isotherms can precisely predict their behavior. Log–log MT diagrams are useful in determining the requirement of the number of stages in counter current extraction, especially when the feed and raffinate concentrations differ by several orders of magnitude. The two concepts have been successfully applied to develop a process for the separation of high purity cobalt and nickel from ocean nodules leach liquor.

Keywords: Mixed-Metals Isotherm, Log–Log McCabe Thiele’s Diagram, Ocean Nodules, Copper, Zinc, Cobalt, Nickel, DEHPA, PC-88A, Solvent Extraction

? Ubaldini, S., Massidda, R., Vegliò, F. and Beolchini, F. (2006), Gold stripping by hydro-alcoholic solutions from activated carbon: Experimental results and data analysis by a semi-empirical model. *Hydrometallurgy*, **81** (1), 40-44.

Full Text: [2006\Hydrometallurgy80, 40.pdf](2006/Hydrometallurgy80,%2040.pdf)

Abstract: The aim of this work was to study gold stripping from activated carbon using a range of different alcohols (isopropanol, ethanol and ethylene glycol). The experimental work was carried out on a laboratory scale, using activated coconut carbon, at 40 to 80°C and up to 8 h extraction time. Isopropanol was the most rapid eluent with > 98% Au eluted after 1 h at 80°C, ethylene glycol had a similar extraction after 2 h, ethanol was the least effective with 5 h required for > 95% extraction. Interestingly, 77% Au extraction was obtained at 40°C using ethylene glycol.

A second order semi-empirical model was used to successfully describe the stripping. The activation energies were > 57kJ/mol, indicating that desorption was rate determining. The following order of the estimated kinetic constants has been observed at any investigated temperature: K-isopropanol > K-ethylene (glycol) > K-ethanol indicating that isopropanol was the best organic compound for the gold stripping process among the selected compounds investigated in this work. From a practical viewpoint, the non-flammability of ethylene glycol makes it the most attractive. (c) 2005 Elsevier B.V. All rights reserved.

Keywords: Gold, Extraction, Activated Carbon, Hydro-Alcoholic Solutions, Isopropanol, Ethanol, Ethylene Glycol, Mathematical Model, Stripping Kinetics, Aurocyanide Ion-Pairs, Adsorption, Elution, Extraction, Oxygen

? Mouflih, M., Aklil, A., Jahroud, N., Gourai, M. and Sebti, S. (2006), Removal of lead from aqueous solutions by natural phosphate. *Hydrometallurgy*, **81** (3-4), 219-225.

Full Text: [2006\Hydrometallurgy80, 219.pdf](2006/Hydrometallurgy80,%20219.pdf)

Abstract: The removal of lead ions from aqueous solution was studied in batch experiments using natural phosphate (NP). The effects of initial concentration of lead and initial pH of solution were investigated and the mechanism for removal of lead has been suggested. The data obtained from sorption isotherms at different temperatures conformed to the linear form of the Langmuir adsorption equation. The influence of NO3− and Cl− anions has been evaluated. The effect of varying levels of Cl− has significant influence on the sorption capacity of Pb2+, while NO3− did not. The abundance of natural phosphate, its low price and non-aggressive nature towards the environment are advantages for its utilization in point of view of wastewater and wastes clean up.

Keywords: Natural Phosphate, Lead Removal, Sorption Isotherms

? Luna, A.S., da Costa, A.C.A., Henriques, C.A. and Herbst, M.H. (2007), Electron paramagnetic resonance and atomic absorption spectrometry as tools for the investigation of Cu(II) biosorption by *Sargassum filipendula*. *Hydrometallurgy*, **86** (1-2), 105-113.

Full Text: [2007\Hydrometallurgy86, 105.pdf](2007/Hydrometallurgy86,%20105.pdf)

Abstract: A basic investigation into the removal of copper ions from aqueous solutions by *Sargassum filipendula* was conducted in batch conditions. The influence of different experimental parameters such as initial pH, sorption time, equilibrium conditions, and initial concentrations of copper ions on copper uptake was evaluated. Results indicated that copper uptake capacity increased from pH 2.0 to 3.0, being constant at pH values 4.0 and 5.0. Electron Paramagnetic Resonance proved to be a useful tool for studying the mechanism involved in copper biosorption by S. filipendula. For initial copper concentrations smaller than 250 mu g mL-1 axial type spectra were obtained, typical of isolated immobilized copper ions, and a hyperfine structure was observed (A(parallel to) = 150(2)G, g(parallel to) =2.31 (1)). For initial copper concentrations greater than 250 mu g mL-1, (q(e)= 53.3 mg g-1), a distorted line, typical of aggregates, was observed, due to dipole-dipole magnetic interactions. The Langmuir model better represented the sorption process, as compared to the model of Freundlich. The process followed a second-order kinetics, and equilibrium was reached after 10 min of contact between the biomass and the metal solution. Due to its outstanding copper uptake capacity (1.30 mmol g-1 biomass), S. filipendula proved to be an excellent biomaterial for accumulating and recovering copper from industrial solutions. The results show that the biomass has sorption capacities comparable to other biomasses and conventional ion-exchange materials. (C) 2006 Elsevier B.V. All rights reserved.

Keywords: Absorption, Adsorption, Aggregates, Aqueous-Solutions, Biomass, Biosorption, Cadmium(II), Capacity, Concentrations, Copper, Copper Biosorption, Electron Paramagnetic Resonance, Equilibrium, Equilibrium, Freundlich, Industrial, Interactions, Ion Exchange, Ions, Kinetics, Langmuir, Magnetic, Materials, Mechanism, Metal, Model, Parameters, pH, pH Values, Pretreated Biomass, Removal, *Rhizopus-Arrhizus*, Sargassum, *Sargassum filipendula*, Second-Order Kinetics, Sorption, Spectrometry, Structure, Temperature, Tools, Uptake

? Parajuli, D., Kawakita, H., Inoue, K., Ohto, K. and Kajiyama, K. (2007), Persimmon peel gel for the selective recovery of gold. *Hydrometallurgy*, **87** (3-4), 133-139.

Full Text: [2007\Hydrometallurgy87, 133.pdf](2007/Hydrometallurgy87,%20133.pdf)

Abstract: The use of persimmon peel gel for the recovery of Au(III) from aqueous chloride medium was investigated. By comparing with the adsorption of some other metal ions, the gel was found to be selective only for Au(III). The XRD analysis and the digital micrograph of the get taken after adsorption supported the formation of gold particles during adsorption process. High selectivity and capacity of the gel for Au(III) is associated with the reduction of Au(III) to elemental form. Comparative study of reduction of Au(III) by typical tannin rich materials, green tea and oolong tea, and by various organic acids clarified the involvement of polyphenolic groups in the reduction of Au(III) during adsorption. Innovative use of this novel adsorption gel can fulfill the need of cost effective and environment friendly mean for the recovery of valuable metals. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: PP Gel; Polyphenolics; Gold(III), Tannin Gel; Hexavalent Chromium; Condensed-Tannin; Adsorption; Mechanism

? Donia, A.M., Atia, A.A. and Elwakeel, K.Z. (2007), Recovery of gold(III) and silver(I) on a chemically modified chitosan with magnetic properties. *Hydrometallurgy*, **87** (3-4), 197-206.

Full Text: [2007\Hydrometallurgy87, 197.pdf](2007/Hydrometallurgy87,%20197.pdf)

Abstract: Chemically modified chitosan resin with magnetic properties has been prepared and investigated. The modification process took place through the reaction between chitosan and polymeric Schiff’s base of thiourea/glutaraldehyde in the presence of magnetite. The resin obtained was tested for the recovery of Au(III) and Ag(I) from their aqueous solutions using batch and column methods. Uptake values of 3.6 and 2.1 mmol/g were reported for Au(III) and Ag(I), respectively. Both kinetics and thermodynamic parameters of the adsorption process were obtained. The data indicated that adsorption process is exothermic spontaneous reaction and kinetically proceeds according to pseudo second order model. The interaction mechanism between metal ion and active sites has been interpreted as ion pair for gold(III) and chelation for silver(I). Breakthrough time, critical bed height and durability of resin were estimated from column studies. These parameters indicated that the resin has a good efficiency towards Au(III) and Ag(I). (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Chitosan, Magnetic Resins, Gold, Silver, Chelating Resins, Recovery, Alkaline Cyanide Solution, Ion-Exchange-Resins, Piperazine Functionality, Chelating Resins, Gold, Adsorption, Extraction, Particles, Behavior

? Souza, A.D., Pina, P.S., Leão, V.A., Silva. C.A. and Siqueira, P.F. (2007), The leaching kinetics of a zinc sulphide concentrate in acid ferric sulphate. *Hydrometallurgy*, **89** (1-2), 72-81.

Full Text: [2007\Hydrometallurgy89, 72.pdf](2007/Hydrometallurgy89,%2072.pdf)

Abstract: This work examines the dissolution kinetics of an iron-rich zinc sulphide concentrate in acid ferric sulphate medium. The effects of temperature, ferric ion and sulphuric acid concentrations, agitation speed and particle size on the leaching kinetics were investigated. The leaching process could be separated into two stages. Initially, the dissolution kinetics was controlled by the chemical reaction at the surface of the zinc sulphide particles followed by a second step where the reaction was controlled by diffusion of the reagents or products through the elemental sulphur (ash) layer. The activation energy of the chemical controlled step was 27.5 kJ/mol and the value determined for the diffusion controlled step was 19.6 kJ/mol. The reaction order with respect to ferric ion and sulphuric acid concentrations were approximately 0.50 and 1.00, respectively. Analysis of the unreacted and reacted sulphide particles by SEM-EDS showed a progressive increase of the thickness of the elemental sulphur layer on the solid surface. The development of this sulphur layer is further evidence of the change on the rate-control ling step as the reaction progress. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Sphalerite, Chemical Leaching, Ferric Sulphate, Kinetics, Mechanism, Chloride Media, Sphalerite, Dissolution, Iron, Mechanisms, Minerals

? Shao, W.J., Li, X.M., Cao, Q.L., Luo, F., Li, J.M. and Du, Y.Y. (2008), Adsorption of arsenate and arsenite anions from aqueous medium by using metal(III)-loaded amberlite resins. *Hydrometallurgy*, **91** (1-4), 138-143.

Full Text: [2008\Hydrometallurgy91, 138.pdf](2008/Hydrometallurgy91,%20138.pdf)

Abstract: In this paper, we studied the feasibility of using La(III)-, Ce(III)-, Y(III)-, Fe(III)- and AI(III)-loaded 200CT resin as adsorbents for the removal of As(III and V) from aqueous solution. The effects of the contact time, pH of solution and initial concentration of solution on the removal of As(III and V) were investigated in a batch system in order to explain the adsorption mechanism. The removal of As(III and V) by using metal(III)-loaded 200CT resins are strictly pH-dependent. The reaction mechanism was discussed and followed an ion exchange adsorption mechanism. The kinetics of As(III) adsorption with Y(III)-200CT and As(V) adsorption with Fe(III)-200CT can be described well by the pseudo-first-order and second-order models. The equilibrium adsorption data were fitted by four isotherm models. The fitting results suggested that the Y(III)- and Ce(III)-200CT resins are better adsorbents for the As(III) adsorption and the maximum uptakes are 0.4835 and 0.4592 mol/kg, respectively. and Fe(III)-200CT resin is the best of PO43- adsorbent for the removal of As(V) with the maximum capacity of 1.450 mol/kg. The coexisting ion influence PO43- was bigger than SO42- on the removal of As(III and V). 0 2008 Elsevier B.V. All fights reserved.

Keywords: Acid Chelating Resin, Adsorbent, Adsorbents, Adsorption, Amberlite 200ct, Aqueous Solution, Arsenic, Arsenic(III), As(V) Adsorption, Biosorption, Capacity, Equilibrium, Fe(III), Ion Exchange, Ion-Exchange, Ions, Isotherm, Kinetics, Mechanism, Models, Oxide, pH, pH-Dependent, Removal, Resins, Solution, Trivalent Metal Ions Loaded Resins, Water

? Parodi, A., Vincent, T., Pilsniak, M., Trochimczuk, A.W. and Guibal, E. (2008), Palladium and platinum binding on an imidazol containing resin. *Hydrometallurgy*, **92** (1-2), 1-10.

Full Text: [2008\Hydrometallurgy92, 1.pdf](2008/Hydrometallurgy92,%201.pdf)

Abstract: Platinum and palladium were efficiently recovered from HCl solutions (at concentrations as high as 1-2 M) using a vinylbenzyl chloride-divinylbenzene resin reacted with the sodium salt of diethylmalonate followed by reaction with 3-aminopropyl imidazol. Both palladium and platinum exhibit sorption capacities as high as 1 mmol metal g-1 in, 2 M HCl solutions (1.4-1.5 mmol metal g-1 in 1 M HCl and 1.6-1.7 mmol metal g-1 in 0.1 M HCl). The sorbent has a greater affinity for Pd at low HCl concentration, while Pt is preferred at higher HCl concentration, as shown by sorption performances in binary solutions. The sorption capacity is influenced by chloride concentration, while the presence of competitor ions (such as base metals) has little influence on binding performances: zinc shows the highest inhibiting effect (compared to copper and nickel). The sorption kinetics show that the agitation speed has a limited impact on sorption rate, while the kinetic rate decreases linearly with increasing metal concentration. Metals loaded on the resin can be recovered using 0.1 M thiourea solution as the eluent, with desorption efficiency exceeding 95% under selected experimental conditions. The recycling of the resin was effective for at least five sorption/desorption cycles. (c) 2008 Elsevier B.V. All rights reserved.

Keywords: Imidazol Resin, Palladium, Platinum, Sorption Isotherms, Uptake Kinetics, Selectivity, pH Effect, Chloride Effect, Desorption, Hydrochloric-Acid Solutions, Solvent-Impregnated Resins, Liquid-Liquid-Extraction, Cross-Linked Chitosan, Chelating Resins, Guanidyl Groups, Ion-Exchange, Metal-Ions, Dicyanoaurate Anions, Selective Adsorption

? Unuabonah, E.I., Adebowale, K.O., Olu-Owolabi, B.I., Yang, L.Z. and Kong, L.X. (2008), Adsorption of Pb(II) and Cd(II) from aqueous solutions onto sodium tetraborate-modified Kaolinite clay: Equilibrium and thermodynamic studies. *Hydrometallurgy*, **93** (1-2), 1-9.

Full Text: [2008\Hydrometallurgy93, 1.pdf](2008/Hydrometallurgy93,%201.pdf)

Abstract: Kaolinite clay sample obtained from Ubulu-Ukwu in Delta State of Nigeria was modified with sodium tetraborate to obtain NTB-modified kaolinite clay. XRD measurements of NTB-modified kaolinite adsorbent showed no observable change in the d-spacing of its crystal lattice. Also, the data of XRD confirmed that this kaolinite clay sample is a mixture of kaolinite and Illite clay minerals. The SEM of modified and unmodified samples showed irregular crystal structures. FTIR results proved the surface modification of the kaolinite at -Al-O and -Si-O centers. The NTB-modified adsorbent presented with broader peaks of inner -OH. Modification of kaolinite clay sample with sodium tetraborate decreased its PZC from pH 4.40 to 3.70 while its Specific Surface Area (SSA) was increased from 10.56 m2 g-1 to 15.84 m2 g-1.

Modification with sodium tetraborate reagent increased the adsorption capacity of kaolinite clay from 16.16 mg/g to 42.92 mg/g for Pb(II) and 10.75 mg/g to 44.05 mg/g for Cd(II) at 298 K. Increasing temperature was found to increase the adsorption of both metals onto both adsorbents suggesting an endothermic adsorption reaction. The simultaneous presence of electrolyte in aqueous solution with Pb and Cd(II) was found to decrease the adsorption capacity of NTB-modified adsorbent for Pb and Cd(II). Using the Pearson’s Hard and Soft Lewis Acid and Base (HSAB) theory the higher selectivity of unmodified kaolinite clay adsorbent for Ph and NTB-modifled kaolinite clay for Cd(II) was justified.

The thermodynamic calculations for the modified kaolinite clay sample indicated an endothermic nature of adsorption (AH(mean) +435 kJ mol-1 for Pb(II) and +3.79 kJ mol-1 for Cd(II)) and an increase in entropy as a result of adsorption of Pb(II)and Cd(II)(Delta S-mean-21.73J mol-1 K for Pb(II) and -18.30J mol-1 K for Cd (II)). The small positive values of free energy change (ΔG(mean)) indicated that the adsorption of Pb(II) and Cd(II) onto the modified adsorbent may require some small amount of energy to make it more feasible.

Modeling equilibrium adsorption data obtained suggested that NTB-modified adsorbent sample has homogeneous adsorption sites and fit very well with Langmuir adsorption model.

Regeneration studies suggest that approximate to 85% of the metals were desorbed from both adsorbents. On reuse of the adsorbents only approximate to 80% of metals were adsorbed. NTB-modified kaolinite clay sample show some very good potentials as a low-cost adsorbent for the adsorption. of Pb(II) and Cd (II) from aqueous solutions. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Desorption, Thermodynamics, Kaolinite-Illite, Selectivity, Wastewater Treatment, Palm Kernel Fiber, Ordered Kaolinite, Cadmium Ions, Soft Acids, Sorption, Lead, Water, Kinetics, Removal, Nickel

? Elwakeel, K.Z., Atia, A.A. and Donia, A.M. (2009), Removal of Mo(VI) as oxoanions from aqueous solutions using chemically modified magnetic chitosan resins. *Hydrometallurgy*, **97** (1-2), 21-28.

Full Text: [2009\Hydrometallurgy97, 21.pdf](2009/Hydrometallurgy97,%2021.pdf)

Abstract: Chitosan was cross-linked using glutaraldehyde in the presence of magnetite. The resin obtained was chemically modified through the reaction with tetraethylenepentamine followed by glycidyl trimethylammonium chloride to produce chitosan bearing amine (R1) and chitosan bearing both amine and quaternary ammonium chloride moieties (R2), respectively. The removal of Mo(VI) as molybdate anions from aqueous solution was studied using batch and column methods. RI works efficiently towards the removal of molybdate in acidic medium. Whilst R2 works efficiently in all pH ranges (acidic/neutral/basic). The nature of interaction of the resins obtained with molybdate was clarified. The resins showed a higher affinity towards the uptake of Mo(VI). Kinetics and thermodynamic parameters of the uptake process were obtained. Breakthrough and regeneration curves for the removal of Mo(VI) were also studied. The adsorbed molybdate anions were found to be effectively eluted from the investigated resins. Published by Elsevier B.V.

Keywords: Chelating Resins, Chitosan, Competitive Adsorption, Copper(II), Ions, Kinetics, Magnetic, Model, Molybdate, Molybdate Oxoanions, Quaternary Amine, Selenate, Sulfate, Uptake Behavior, Waste-Water

? Teutli-Sequeira, A., Solache-Ríos, M. and Olguín, M.T. (2009), Influence of Na+, Ca2+, Mg2+ and NH4+ on the sorption behavior of Cd2+ from aqueous solutions by a Mexican zeolitic material. *Hydrometallurgy*, **97** (1-2), 46-52.

Full Text: [2009\Hydrometallurgy97, 46.pdf](2009/Hydrometallurgy97,%2046.pdf)

Abstract: The present study involves an investigation of a Mexican zeolitic material. for the removal of cadmium from aqueous solutions. The effects of pH and contact time on the adsorption process were examined, The adsorption was similar in the pH range from 4 to 6. Sorption equilibrium was reached in about 48 h and the rate of cadmium sorption by the zeolite was rapid in the first 5 h of the reaction time. Kinetic experiments were best described by the pseudo-second order model. batch adsorption experiments conducted at room temperature (25 C) showed that the adsorption pattern followed the Langmuir-Freundlich isotherm model, these results indicated chemisorption of cadmium on a heterogeneous material. Sodium, calcium, magnesium and ammonium interfere in the sorption of cadmium by the zeolitic material but calcium interferes most in this process. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption, Ammonium, Cadmium, Cadmium, Calcium, Clinoptilolite, Clinoptilolite, Cu2+, Heavy-Metals, Ion-Exchange Equilibria, Kinetics, Lead, Magnesium, Natural Zeolites, Removal, Sodium, Sorption

? Van Nguyen, N., Lee, J.C., Jha, M.K., Yoo, K. and Jeong, J. (2009), Copper recovery from low concentration waste solution using Dowex G-26 resin. *Hydrometallurgy*, **97** (3-4), 237-242.

Full Text: [2009\Hydrometallurgy97, 237.pdf](2009/Hydrometallurgy97,%20237.pdf)

Abstract: Huge amounts of effluent of low copper content are generated in electrical and electronic parts manufacturing industries. Here we report an adsorption process using strongly acidic exchanger Dowex G-26 for copper recovery from dilute sulfate solution containing 0.5-0.7 g/L copper, which is similar to the chemical and mechanical polishing (CMP) waste generated in electronic industries. The structures of activated and copper-loaded resins were compared by FT-IR spectroscopic characterization to confirm the adsorption phenomena. Various process parameters viz. contact time, solution pH, resin dose were investigated for copper recovery from the waste effluent. Copper adsorption from the solution was complete within a contact time of 14 min for an aqueous/resin (A/R) ratio of 100 mL/g and equilibrium pH of 2.5. The mechanism for copper adsorption by Dowex G-26 resin was found to follow a Langmuir isotherm and second-order reaction rate. 99.7% of the copper was eluted effectively from the loaded resin by 10% sulfuric acid at an A/R ratio of 25 in a contact time of 20 min to produce a copper-enriched solution. After copper recovery, the raffinate generated could be disposed safely without affecting the environment. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorptive Removal, Aqueous-Solution, Characterization, Chemical, Concentration, Copper, Copper Adsorption, Cu(II), Dowex G-26, Electronic Polishing Waste Effluent, Environment, Equilibrium, FT-IR, FTIR, Ion Exchange, Ion-Exchange-Resins, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Loaded Resin, Manufacturing, Mechanism, pH, Polishing, Recovery, Resin, Resins, Rights, Second Order, Second-Order, Solution, Sulfate, Waste, Zn(II)

? Wołowicz, A. and Hubicki, Z. (2009), Palladium(II) complexes adsorption from the chloride solutions with macrocomponent addition using strongly basic anion exchange resins, type 1. *Hydrometallurgy*, **98** (3-4), 206-212.

Full Text: [2009\Hydrometallurgy98, 206.pdf](2009/Hydrometallurgy98,%20206.pdf)

Abstract: The use of the strongly basic anion exchange resins. type 1 such as Lewatit MP-500 and Lewatit MP-500A for palladium(II) complexes adsorption has been investigated. The adsorption process was carried out from the chloride solutions with macrocomponent (sodium chloride) addition (x M HCl-1.0 M NaCl: x M HCl-2.0 M NaCl) where the concentration of hydrochloric acid was constant and equal to x = 0: 0.1: 0.5; 1.0; and 2.0 M. respectively. The breakthrough curves of Pd(II) were determined and the sorption parameters (weight and bed distribution coefficients, working anion exchange capacity) were calculated. The pseudo-second kinetic order was applied in kinetic studies as well as to calculate the kinetic parameters. The values of the working anion exchange capacities (0.029 g/cm3; 0.028 g/cm3) for Lewatit MP-500 and Lewatit MP-500A (0.028 g/cm3; 0.027 g/cm3) in the 1.0 M NaCl and 0.1 M HCl-1.0 M NaCl solutions, respectively are really close and in other solutions under discussion Lewatit MP-500 possess slightly higher values of capacities, and therefore is insignificantly more efficient in the adsorption process of palladium(II) ions than Lewatit MP-500A. The equilibrium adsorption capacities changed in the range 8.84-9.99 and 8.40-9.38 mg/g for Lewatit MP-500 as well as 8.12-9.57 and 7.26-8.85 mg/g for Lewatit MP-500A in the chloride x M HCl-1.0 M NaCl and x M HCl-2.0 M NaCl solutions. respectively. The adsorption process proceeds according to the pseudo-second kinetic order. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Capacities, Breakthrough, Breakthrough Curves, Capacity, Chloride, Chloride Solutions, Concentration, Distribution, Equilibrium, Intermediate, Ion-Exchange, Ions, Kinetic, Kinetic Parameters, Kinetic Studies, Kinetics, Kinetics, Models, NaCl, Palladium(II), Pd(II), Platinum-Group Metals, Preconcentration, Recovery, Resins, Rights, Selective Separation, Sodium, Sodium Chloride, Solutions, Sorption, Spectrophotometric Determination, Strongly Basic Anion Exchange Resin

? Navarro, R., Gallardo, V., Saucedo, I. and Guibal, E. (2009), Extraction of Fe(III) from hydrochloric acid solutions using Amberlite XAD-7 resin impregnated with trioctylphosphine oxide (Cyanex 921). *Hydrometallurgy*, **98** (3-4), 257-266.

Full Text: [2009\Hydrometallurgy98, 257.pdf](2009/Hydrometallurgy98,%20257.pdf)

Abstract: Ferric ions were efficiently removed from HCl solutions using Amberlite XAD-7 resin impregnated with trioctylphosphine oxide (Cyanex 921). Iron was removed under the form HFeCl4 through direct binding on the resin or by extraction with Cyanex 921 involving a solvation mechanism. High concentrations of HCl and intermediary extractant loadings were required for maximum sorption efficiency and rationale use of the extractant. At intermediary extractant loading (in the range 300-450 mg Cyanex 921 g-1) the maximum sorption capacity increased with extractant loading. Maximum sorption capacity slightly increased with temperature, the reaction is endothermic and the enthalpy change was found close to -30.8 kJ mol-2. Sorption isotherms were fitted with the Langmuir equation and maximum sorption capacity reached values as high as 20-22 mg Fe g-1 in 3 M HCl solutions. Despite the good fit of experimental data with the pseudo second-order rate equation, sorption kinetics was controlled by the resistance to intraparticle diffusion. The intraparticle diffusion coefficient (D-e) varying in the range 1.2×10-11-4.7×10-10 m2 min-1 was found to increase with metal concentration and with temperature, while varying the extractant loading it reached a maximum at a loading close to 453 mg Cyanex 921 g-1. The desorption of Fe(III) can be achieved using 0.1 M solutions of nitric acid, sulfuric acid, sodium sulfate and even water, maintaining high efficiencies for sorption and desorption for at least 5 cycles. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Aqueous Chloride Solutions, Binding, Cadmium, Capacity, Concentration, Cyanex 921, Data, Desorption, Diffusion, Diffusion Coefficient, Efficiency, Endothermic, Enthalpy, Experimental, Extractant Impregnated Resin, Extraction, Fe(III), Intraparticle Diffusion, Ions, Iron, Isotherms, Kinetics, Langmuir, Langmuir Equation, Liquid-Liquid-Extraction, Loading, Loadings, Mechanism, Metal, Metal-Ions, Octyl Phosphine Oxide, Oxide, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Recovery, Resin, Resistance, Rights, Salvation Mechanism, Second Order, Second-Order, Separation, Sodium, Solutions, Solvent-Extraction, Sorption, Sorption Capacity, Sorption Isotherms, Sorption Kinetics, Sulfate, Temperature, The Good, Trioctylphosphine Oxide, Water, Zinc(II) Extraction

? Qu, R.J., Sun, C.M., Wang, M.H., Ji, C.N., Xu, Q., Zhang, Y., Wang, C.H., Chen, H. and Yin, P. (2009), Adsorption of Au(III) from aqueous solution using cotton fiber/chitosan composite adsorbents. *Hydrometallurgy*, **100** (1-2), 65-71.

Full Text: [2009\Hydrometallurgy100, 65.pdf](2009/Hydrometallurgy100,%2065.pdf)

Abstract: Two kinds of cotton fiber/chitosan composite adsorbents (SCCH and RCCH) were employed to adsorb Au(III) ions from aqueous solution. The adsorption kinetics and adsorption isotherms of the two fibers for Au(III) were investigated. The experimental results revealed that the adsorption kinetics of SCCH and RCCH fibers for Au(III) was described by the pseudo second-order reaction model. The adsorption isotherm data of Au(III) on the surface of SCCH and RCCH fibers were fitted by linear and non-linear methods of the Freundlich, Langmuir and Redlich-Peterson isotherms. The results confirmed that both linear and non-linear forms of the above-mentioned three models can be used to describe adsorption of Au(III) on the surface of the two fibers and to predict the isotherm parameters. The linear Langmuir and non-linear Langmuir and Redlich-Peterson models are best-fit isotherms for the experimental data. Redlich-Peterson is a special case of Langmuir when the Redlich-Peterson isotherm constant g is set equal to unity. The investigation of adsorption selectivity showed that the SCCH and RCCH fibers displayed strong affinity for gold in the solution and both exhibited 100% selectivity for the gold in the presence of Ni(II), Cd(II), Zn(II), Co(II), and Mn(II). (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorbents, Adsorption, Adsorption Isotherm, Adsorption Isotherms, Adsorption Kinetics, Adsorption Selectivity, Aqueous Solution, Au(III), Cd(II), Co(II), Composite, Cotton Fiber, Chitosan Adsorbent, Cross-Linked Chitosan, Data, Equilibrium, Experimental, Fibers, Forms, Freundlich, Gold, Gold Recovery, Gold(III) Ions, Investigation, Ions, Isotherm, Isotherm Parameters, Isotherms, Kinetics, Langmuir, Metal-Ions, Methods, Model, Models, Ni(II), Nonporous Glass-Beads, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Redlich-Peterson, Removal, Rights, Second Order, Second-Order, Selectivity, Solution, Solvent-Extraction, Surface, Tree Fern, Waste-Water, Zn(II)

? Das, N. (2010), Recovery of precious metals through biosorption - A review. *Hydrometallurgy*, **103** (1-4), 180-189.

Full Text: [2010\Hydrometallurgy103, 180.pdf](2010/Hydrometallurgy103,%20180.pdf)

Abstract: Recovery of precious metals like gold, silver, palladium platinum etc. is interesting due to its high market prices along with various industrial applications. Conventional technologies viz, ion exchange, chemical binding, surface precipitation etc. which been have been developed for the recovery of such metals are not economically attractive. Biosorption represents a biotechnological innovation as well as a cost effective excellent tool for recovery of precious metals from aqueous solutions. A variety of biomaterials are known to bind the precious metals including algae, fungi, bacteria actinomycetes, yeast etc. along with some biopolymers and biowaste materials. The metal binding mechanism, as well as the parameters influencing the uptake of precious metals and isotherm modeling are presented. This article provides an overview of past achievements and present scenario of biosorption studies carried out on the use of some promising biosorbents which could serve as an economical means for recovering precious metals. The present review also highlights the use of biosorbents in real situations and hopes to provide insights into this research frontier. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Alfalfa Biomass, Alkaline Cyanide Solution, Aqueous-Solution, Aspergillus-Niger, Biosorbent, Biosorption, Chlorella-Vulgaris, Cladosporium-Cladosporioides, Gold, Gold Recovery, Heavy-Metals, Isotherm, Linked Chitosan Resin, Mechanism, Palladium, Platinum, Precious Metal, Recovery, Research, Saccharomyces-Cerevisiae, Silver

? Liu, Y.H., Cao, X.H., Hua, R., Wang, Y.Q., Liu, Y.T., Pang, C. and Wang, Y. (2010), Selective adsorption of uranyl ion on ion-imprinted chitosan/PVA cross-linked hydrogel. *Hydrometallurgy*, **104** (2), 150-155.

Full Text: [2010\Hydrometallurgy104, 150.pdf](2010/Hydrometallurgy104,%20150.pdf)

Abstract: An interpenetration network (IPN) ion-imprinting hydrogel (IIH) was synthesized using uranyl ions as template for adsorption and removal of uranyl ions from aqueous solutions. The IIH was obtained via cross-linking of blended chitosan/polyvinyl alcohol (PVA) using ethylene glycol diglycidyl ether (EGDE). The ability of the IIH to adsorb and remove uranyl ions from aqueous solutions was assessed using a batch adsorption technique. The maximum adsorption capacity was observed in the pH range of 5.0-6.0. The adsorption process could be well described by both the Langmuir and Freundlich isotherms and the maximum adsorption capacity calculated from Langmuir equation was 156 mg/g. Equilibrium was achieved within 2 h. The kinetic data, obtained at optimum pH 5.0 could be fitted with to a pseudo-second order equation. The selectivity coefficient of uranyl ion and other metal cations on IIH indicated an overall preference for uranyl ions which was much higher compared with the non-imprinted hydrogel. This suggests that the IIH is a promising sorbent material for the selective removal of uranyl ions from aqueous solutions. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherms, Alcohol, Aqueous Solutions, Aqueous-Solutions, Batch, Batch Adsorption, Biosorption, Capacity, Chitosan, Chitosan, PVA, Cross-Linked, Crosslinking, Data, Equilibrium, Ether, Ethylene Glycol, Freundlich, Heavy-Metals, Hydrogel, Ion-Imprinted Hydrogel, Ions, Ipn, Isotherms, Kinetic, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Equation, Metal, Network, pH, Polymer Material, Preconcentration, Preference, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Rights, Selective Adsorption, Selective Removal, Selectivity, Separation, Solid-Phase Extraction, Solutions, Sorbent, Sorption, Template, Uranium VI, Uranyl Ions

? El-Khaiary, M.I. and Malash, G.F. (2011), Common data analysis errors in batch adsorption studies. *Hydrometallurgy*, **105** (3-4), 314-320.

Full Text: [2011\Hydrometallurgy105, 314.pdf](2011/Hydrometallurgy105,%20314.pdf)

Abstract: Many models exist for describing the experimental results of batch adsorption which are used in research to study equilibrium, kinetics, and mechanisms of adsorption. In the process of statistically analyzing the experimental data, the adsorption literature contains errors that render the results unreliable. These errors include incorrect application of theoretical models and also incorrect application of statistical analysis. Some errors are so abundant in the adsorption literature that they have actually gained credibility and mistakenly taken for granted that these are sound scientific practices. This article highlights some common errors in adsorption data analysis that are frequently found in the literature and provides suggestions for more sound practices. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Analysis, Application, Aqueous-Solution, Basic-Dyes, Batch, Batch Adsorption, Brasiliensis Leaf Powder, Credibility, Data, Data Analysis, Equilibrium, Equilibrium Data, Errors, Exchange-Resins, Experimental, Intraparticle-Diffusion, Isotherm, Isotherm Models, Kinetics, Linearization, Literature, Mechanism, Mechanisms, Methylene-Blue, Models, Practices, Regression, Regression-Analysis, Research, Rights, Statistical Analysis, Theoretical Models

# Title: Hyperfine Interactions

Full Journal Title: [Hyperfine Interactions](http://www.springerlink.com/(2nmrnq45kvy1zcuxgv3epdze)/app/home/contribution.asp?referrer=parent&backto=issue,14,67;journal,28,51;linkingpublicationresults,1:101746,1)

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? Menzel, M., Mehner, H., Monnich, I. and Berndt, H. (2000), Investigation of PdSn-catalysts for nitrate removal in drinking water processing. *Hyperfine Interactions*, **126** (1-4), 89-93.

Full Text: [2000\Hyp Int126, 89.pdf](2000/Hyp%20Int126,%2089.pdf)

Abstract: PdSn catalysts prepared by various methods and used for nitrate reduction were investigated by means of in situ Sn-119m Mossbauer spectroscopy. Characterization by Sn-119m Moss-bauer spectroscopy revealed significant differences concerning the modification of the palladium particles supported on alumina. The controlled surface reaction preparation method (CSR) leads to formation of PdSn alloys with different tin contents besides small amounts of Sn(II) species and unalloyed metallic Sn. On the other hand the impregnation method leads to a small amount of PdSn alloys and higher contents of Sn(II) species. Sn(IV) species were found in both kinds of catalysts. The CSR prepared PdSn catalysts showed an improved activity and selectivity compared to the catalysts obtained by the impregnation method.

Keywords: Drinking Water, Nitrate Removal

# Title: Hypertension

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Peripheral Vascular Disease: Impact Factor 6.331, 5/51 (2005)

Chen, C.J., Hsueh, Y.M., Lai, M.S., Shyu, M.P., Chen, S.Y., Wu, M.M., Kuo, T.L. and Tai, T.Y. (1995), Increased prevalence of hypertension and long-term arsenic exposure. *Hypertension*, **25** (1), 53-60.

Full Text: [H\Hypertension25, 53.pdf](H/Hypertension25,%2053.pdf)

Abstract: To examine the association between long-term exposure to inorganic arsenic and the prevalence of hypertension, we studied a total of 382 men and 516 women residing in villages where arseniasis was hyperendemic. Hypertension was defined as a systolic blood pressure of 160 mm Hg or greater, a diastolic blood pressure of 95 mm Hg or greater, or a history of hypertension treated regularly with antihypertensive drugs. The long-term arsenic exposure was calculated from the history of artesian well water consumption obtained through standardized interviews based on a structured questionnaire and the measured arsenic concentration in well water. Residents in villages where long-term arseniasis was hyperendemic had a 1.5-fold increase in age-and sex-adjusted prevalence of hypertension compared with residents in nonendemic areas. Duration of artesian well water consumption, average arsenic concentration in drinking water, and cumulative arsenic exposure were all significantly associated with hypertension prevalence. The higher the cumulative arsenic exposure, the higher the prevalence of hypertension. This dose-response relation remained significant after adjustment for age, sex, diabetes mellitus, proteinuria, body mass index, and serum triglyceride level. The results suggest that long-term arsenic exposure may induce hypertension in humans.

? Chida, Y. and Steptoe, A. (2010), Greater cardiovascular responses to laboratory mental stress are associated with poor subsequent cardiovascular risk status a meta-analysis of prospective evidence. *Hypertension*, **55** (4), 1026-U368.

Abstract: An increasing number of studies has tested whether greater cardiovascular responses to acute mental stress predict future cardiovascular disease, but results have been variable. This review aimed quantitatively to evaluate the association between cardiovascular responses to laboratory mental stress and subsequent cardiovascular risk status in prospective cohort studies. We searched general bibliographic databases, PsycINFO, Web of Science, and PUBMED, up to December 2009. Two reviewers independently extracted data on study characteristics, quality, and estimates of associations. There were 169 associations (36 articles) of stress reactivity and 30 associations (5 articles) of poststress recovery in relation to future cardiovascular risk status, including elevated blood pressure, hypertension, left ventricular mass, subclinical atherosclerosis, and clinical cardiac events. The overall meta-analyses showed that greater reactivity to and poor recovery from stress were associated longitudinally with poor cardiovascular status (r = 0.091 [95% CI: 0.050 to 0.132], P<0.001, and r=0.096 [95% CI: 0.058 to 0.134], P<0.001, respectively). These findings were supported by more conservative analyses of aggregate effects and by subgroup analyses of the methodologically strong associations. Notably, incident hypertension and increased carotid intima-media thickness were more consistently predicted by greater stress reactivity and poor stress recovery, respectively, whereas both factors were associated with higher future systolic and diastolic blood pressures. In conclusion, the current meta-analysis suggests that greater responsivity to acute mental stress has an adverse effect on future cardiovascular risk status, supporting the use of methods of managing stress responsivity in the prevention and treatment of cardiovascular disease. (Hypertension. 2010;55:1026-1032.).

Keywords: 10-Year Follow-Up, Acute Stress Responsivity, Aged Finnish Men, Artery-Disease, Bibliographic, Bibliographic Databases, Blood, Blood Pressure, Cardiovascular, Cardiovascular Disease, Cardiovascular Risk, Cohort Studies, Coronary-Heart-Disease, Databases, Disease, Enhanced Carotid Atherosclerosis, Essential-Hypertension, Family Histories, Future Blood-Pressure, Hypertension, Left-Ventricular Mass, Meta-Analysis, Pressure, Prevention, Psychological Stress, Psychological Stress, Psychosomatic Medicine, Pubmed, Review, Risk, Science, Stress, Treatment, Web of Science

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Publisher:

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Subject Categories:

: Impact Factor

? Al-Meshragi, M., Ibrahim, H.G. and Okasha, A.Y. (2009), Removal of trivalent chromium from aquatic environment by cement kiln dust: Batch studies. *IAENG Transactions on Engineering Technologies*, *Vol II*, **1127**, 74-85.

Abstract: The adsorption of Chromium trivalent Cr(III) has been studied. Its equilibrium isotherm has been measured. The isotherm was determined by stirring 3 g of Cement Kiln Dust (CKD), with 250 ml of a chromium solution (from a tannery effluents wastewater) of initial concentrations 2336 and 4320 mg/l respectively. The stirring rate was used at constant rate of 1200 rpm and the temperature maintained at 25±2°C. A contact time of around 60 min was required to achieve equilibrium. The experimental isotherm results have been fitted using Langmuir, Freundlich, Temkin and Dubinin-Radushkevich equations. The monolayer adsorption capacity is 303 mg Cr(III) per g of Cement Kiln Dust. A comparison of kinetic models applied to the adsorption of Cr(III) ions on the adsorbent was evaluated for the pseudo first order, the pseudo second order, Elovich and intraparticle diffusion kinetic models, respectively. Kinetic parameters, rate constant, equilibrium sorption capacities and related correlation coefficients for each kinetic model were calculated and discussed. All the results show that the pseudo second order kinetic model was found to correlate the experimental data well and removal operation studied gave high removal efficiency. That’s indicate to the high capacity of CKD to sorption of Cr(III) from wastewater effluents.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption, Adsorption Capacity, Aqueous-Solution, Capacity, Cement Kiln Dust, Chromium, Comparison, Correlation, Cr(III), Cr(III) Ions, Cr(VI), Data, Diffusion, Efficiency, Effluents, Elovich, Equilibrium, Equilibrium Isotherm, Experimental, First, First Order, Freundlich, Intraparticle Diffusion, Ions, Isotherm, Kinetic, Kinetic Model, Kinetic Models, Kinetic Parameters, Kinetics, Kinetics, Langmuir, Leaves, Model, Models, Monolayer, Operation, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Rate Constant, Removal, Removal Efficiency, Second Order, Second-Order, Solution, Sorption, Temperature, Trivalent Chromium, Wastewater, Water

# Title: IARC Scientific Publications

Full Journal Title: IARC Scientific Publications

ISO Abbreviated Title: IARC Sci. Publ.

JCR Abbreviated Title: IARC Sci Publ

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tuomisto, J. and Vartiainen, T. (1990), Genotoxicity of drinking waters. *IARC Scientific Publications*, **104**, 307-313.

Abstract: Drinking waters in many countries have been shown to contain non-volatile polar mutagenic compounds as well as trihalomethanes. Their nature is uncertain, but one compound, a chlorinated furanone (3-chloro-4-(dichloro-methyl)-5-hydroxy-2 (5H)-furanone; MX) seems to be responsible for one third to over one half of the mutagenicity. Its concentration seems to correlate rather well also with the total bacterial mutagenicity. Animal toxicity studies are being used to evaluate the possible carcinogenicity risk of this compound as a first stage in complete risk assessment of the whole complex mixture. Epidemiological risk assessment is also possible, since mutagenicity values can be predicted on the basis of organic material in the raw water and the amount of chlorine used. This information has been collected in Finland retrospectively from waterworks, and will be correlated with the Finnish Cancer Registry data.

? McConnell, E.E. and Swenberg, J.A. (1993), Styrene and styrene oxide: Results of studies on carcinogenicity in experimental animals. *IARC Scientific Publications*, **127**, 323-333.

Abstract: Fourteen long-term toxicity studies were reviewed in an effort to evaluate the potential carcinogenic activity of styrene and styrene oxide in animals. Each study was reviewed and evaluated for detail and adequacy of design, adequacy of reported data and interpretation. The results of the review are: 1. There is no convincing evidence for a carcinogenic action of styrene in animals, even though it has been studied in several species and by several routes of exposure: inhalation, gavage, in the drinking-water and by intraperitoneal and subcutaneous injection. Most of the studies of styrene, however, have deficiencies in design and/or conduct. 2. Styrene oxide was carcinogenic to the forestomach of rats and mice of each sex after exposure by gavage at all doses tested, including one as low as 50 mg/kg per day. An increase in the incidence of liver neoplasms was observed in male mice in one study. No carcinogenic activity was observed in mice exposed by skin painting. The relevance to humans of the studies in which exposure was by gavage is limited because: (i) the route is less than ideal for extrapolating to human risk from exposure by inhalation or dermally; (ii) xenobiotics often cause neoplasms at this site when given at high concentrations; and (iii) neoplasms at sites distant from the site of exposure were found in only one sex of one species. 3. None of the studies of styrene or styrene oxide reported here is well suited for extrapolating to potential carcinogenic activity in humans, because all have deficiencies in design, conduct and/or interpretation. An up-to-date chronic inhalation study would have to be conducted in order to evaluate this aspect of hazard assessment.

# Title: IASLIC Bulletin

Full Journal Title: IASLIC Bulletin

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Tiew, W.S. (1998), Journal of Natural Rubber Research 1987-1996: A ten-year bibliometric study. *IASLIC Bulletin*, **43** (2), 49-57.

Full Text: [I\IASLIC Bul43, 49.pdf](I/IASLIC%20Bul43,%2049.pdf)

Abstract: The Journal of Natural Rubber Research, published by the Rubber Research Institute of Malaysia since 1929, has played a key role in the dissemination of natural rubber information all over the world. This paper analyses the authorship pattern, the range and frequency of references cited, the extent of acknowledgement and appendix or appendices being included in research articles of natural rubber, the types of collaborative research in natural rubber and the international collaboration scenario as portrayed in the Journal. Results indicated that the trend is towards multi-authorship and a high degree of collaboration between natural rubber researchers.

Keywords: Natural Rubber, Periodicals, Journal Productivity, Journal of Natural Rubber Research

Hazarika, T. and Goswami, K. and Das, P. (2003), Bibliometric analysis of Indian Forester: 1991-2000. *IASLIC Bulletin*, **48** (4), 213-223.

Full Text: [I\IASLIC Bul48, 213.pdf](I/IASLIC%20Bul48,%20213.pdf)

Abstract: Bibliometric analysis of Indian Forester is done for 1991-2000. Different parameters of the journal viz. Year wise distribution of papers, distribution of papers among different types of organization, Institute wise distribution among the ICFRE (Indian Council of Forestry Research & Education) institutes, state wise distribution of papers in Indian territory and the foreign contributions, authorship pattern, number of citation and the length of the articles are studied. Inferences and findings are shown with relevant data analysis.

Keywords: Bibliometric Analysis, Bibliometrics, Indian Forester, Analysis of Journal Characteristics, Year Wise Distribution of Papers, Distribution of Papers Among Different Types of Organization, Institute Wise Distribution Among the Icfre (Indian Council of Forestry Research & Education) Institutes, State Wise Distribution of Papers, Authorship Pattern, Number of Citation, Length of the Articles

# Title: Iberica

Full Journal Title: Iberica

ISO Abbreviated Title: Iberica

JCR Abbreviated Title: Iberica

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Koltay, T. (2010), Information literacy and abstracting: interdisciplinary issues for linguists and information professionals. *Iberica*, (19), 141-153.

Abstract: Information literacy is a complex phenomenon that requires a multifaceted interdisciplinary approach as it is related to verbal communication, literacy, functional literacy and academic literacy, including issues of plagiarism. It also includes text authoring in a full range of genres, among others abstracts. Abstracting is a well-known act of verbal communication, and abstracts are a genre of written communication. The essence of abstracting is summarizing information making use of critical reading. Abstracting thus can be regarded as one of the instances of exercising information literacy on a higher level. Both information literacy and abstracting are of prime professional interest for linguists (among others in the field of ESP) and information professionals.

Keywords: Abstracting, Academic Literacy, Critical Reading, Critical Writing, Information Literacy, Information Professionals, Libraries, Literacy, Plagiarism, Professional, Science

# Title: Ibid

Full Journal Title: Ibid

ISO Abbreviated Title: Ibid

JCR Abbreviated Title: Ibid

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Gray, J.E. (1868), Notice of a Badger from China (Meles chinensis) sent by Mr. Swinhoe, H. M. Consul at Amoy, and Dr. Hartland from Hong Kong. *Ibid*, 206-209.

Abstract: Dr. Gray has examined the badgers of the Palaearctic region, especially with regard to characters derived from the skull; he finds that they may be divided into two groups, the first of which would comprise M. taxus and M. anakuma.

? Frumkin, ?? and Slygin, ?? (1935), ??. *Ibid*, **8**, 791-??.

? Roginskii, S. and Zeldovich, Ya. (1934), ??. *Ibid*, **13**, 554-595.

? Frankenburg, W.G. (1944), ??. *Ibid*, **66**, 1838-??.

# Title: ICEM2007: Proceedings of the 11th International Conference on Environmental Remediation and Radioactive Waste Management, Pts A and B

Full Journal Title: ICEM2007: Proceedings of the 11th International Conference on Environmental Remediation and Radioactive Waste Management, Pts A and B

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lopes, C.B., Otero, M., Lin, Z., Pereira, E., Silva, C.M., Rocha, J. and Duarte, A.C. (2009), Removal of mercury from aqueous solutions by ETS-4 microporous titanosilicate: Effect of contact time, titanosilicate mass and initial metal concentration. *ICEM2007: Proceedings of the 11th International Conference on Environmental Remediation and Radioactive Waste Management, Pts A and B*, 1019-1023.

Abstract: Mercury is one of the most toxic heavy metals present in the environment and therefore is extremely important develop new, simple and reliable techniques for its removal from aqueous solutions. A recent line of research within this context is the application of microporous materials. The use of these materials for removing heavy metals from solutions may become a potential clean-up technology in the field of wastewater treatment. In this work it is reported the application of microporous titanosilicate ETS-4 as ion exchanger to remove Hg2+ from aqueous solution. Under batch conditions, we studied the effect of contact time, titanosilicate mass and initial Hg2+ concentration. Only 5 mg of ETS-4 are required to purify 2 litres of water with 50 mu g L-1 of metal. Under the experimental conditions, the initial Hg2+ concentration and ETS-4 mass have strong influence on the sorption process, and it is proved that 24 h are almost always sufficient to attain ion exchange equilibrium. Langmuir and Freundlich isotherms were used to fit equilibrium experimental results. The kinetics of mercury removal was reliably described by a pseudo second-order model. On the whole, ETS-4 shows considerable potential to remove Hg2+ from wastewaters.

Keywords: Adsorption, Application, Aqueous Solution, Aqueous Solutions, Batch, Concentration, Context, Environment, Equilibrium, Experimental, Field, Freundlich, Heavy Metals, Ion Exchange, Ion-Exchange, Ions, Isotherms, Kinetics, L1, Langmuir, Langmuir and Freundlich Isotherms, Mercury, Metal, Metals, Microporous Materials, Model, Potential, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Removal, Research, Second Order, Second-Order, Second-Order Model, Solution, Solutions, Sorption, Sorption Process, Techniques, Technology, Toxic, Treatment, Wastewater, Wastewater Treatment, Wastewaters, Water, Work

# Title: 2009 International Conference on Environmental Science and Information Application Technology, Proceedings

Full Journal Title: 2009 International Conference on Environmental Science and Information Application Technology, Proceedings

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lu, J.B., Sun, L.P., Zhao, X.H., Lu, B., Li, Y.L. and Zhang, L. (2009), Removal of phosphate from aqueous solution using iron-oxide-coated sand filter media: Batch studies. *2009 International Conference on Environmental Science and Information Application Technology, Proceedings*, **1**, 639-644.

Abstract: Iron-oxide-coated sand (IOCS) filter media was investigated to remove phosphate from aqueous solutions in batch experiments. Adsorbability of phosphate by IOCS-1 and IOCS-2 (prepared by different coating process) was compared in order to gain an available coating process to prepare modified sand filter media for effective removal of phosphate. Scanning electron microscopy (SEM) and X-ray diffraction (XRD) analysis were used to investigate the surface properties of the coated layer. An energy dispersive X-ray (EDAX) analysis was also used for characterizing phosphate adsorption on IOCS surface. Effects of initial pH, contact time and dose of IOCS on the removal of phosphate were studied. The results showed that the removal efficiency of phosphate by IOCS-1 was greater than IOCS-2, thus, further experiments was carried out using IOCS-1. The adsorption of phosphate by IOCS-1 can be well described by Langmuir, Freundlich and Temkin isotherm at various temperatures. For IOCS-1, the adsorption followed the pseudo-second-order reaction kinetics model. Moreover, the phosphate adsorbed IOCS-1 could be regenerated by alkali solution. Results of this study can provide an effective technology based on adsorption/filtration using IOCS filter media for phosphate removal from water and wastewater.

Keywords: Adsorption, Adsorption, Analysis, Aqueous Solutions, Batch, Batch Experiments, Coated, Coating, Copper(II), Drinking-Water, EDAX, Efficiency, Electron Microscopy, Energy, Engineered Sorbents, Experiments, Filter Media, Fly-Ash, Freundlich, Ions, Iron-Oxide-Coated Sand, Isotherm, Kinetics, Kinetics Model, Langmuir, Lead(II), Media, Model, Modified, pH, Phosphate, Phosphate Adsorption, Phosphate Removal, Phosphorus Removal, Pseudo Second Order, Pseudo-Second-Order, Reaction Kinetics, Regeneration, Removal, Removal Efficiency, Removal of Phosphate, Sand, SEM, Solution, Solutions, Sorption, Surface, Surface Properties, Technology, Temkin Isotherm, Wastewater, Water, X-Ray, X-Ray Diffraction, XRD

? Li, N., Xiong, X.L. and Li, R.B. (2009), Adsorption and desorption behaviors of 4-cresol on beta-cyclodextrin polymer. *2009 International Conference on Environmental Science and Information Application Technology, Proceedings*, **1**, 701-704.

Abstract: The adsorption and desorption properties of beta-cyclodextrin polymer (beta-CDP) for 4-cresol were investigated. Studies concerning the effects of pH, contact time and initial 4-cresol concentration were presented and discussed. Results of batch experiments showed that this adsorbent exhibited some sorption capacities toward 4-cresol. It was found that kinetics followed a Ho and McKay equation and isotherm fitted Freundlich model for the adsorption of 4-cresol on beta-CDP. The regeneration capacity of beta-CDP was so strong that it could be used as a kind of recyclable adsorbent.

Keywords: 4-Cresol, Adsorbent, Adsorption, Aqueous-Solutions, Batch, Batch Experiments, Beta-Cyclodextrin, Capacity, Concentration, Cyclodextrin Polymer, Desorption, Dyes, Equilibrium, Experiments, Freundlich, Freundlich Model, Isotherm, Kinetics, Model, pH, Phenols, Polymer, Regeneration, Removal, Sorbents, Sorption

# Title: 2004 IEEE International Engineering Management Conference

Full Journal Title: 2004 IEEE International Engineering Management Conference

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Pilkington, A. (2004), Defining technology management: a citation/co-citation study. *2004 IEEE International Engineering Management Conference (IEEE Cat. No. 04CH37574)*, 337-341.

Abstract: In this paper bibliometric techniques (citation and a factor analysis of co-citations) are used to investigate the intellectual pillars of the technology management literature. Similar techniques are also used to explore differences in the research agendas of UK, European, North American and rest of the World scholars, and it is argued that such differences may have exacerbated the delays experienced in developing technology management as a respected academic discipline.

Notes: UUniversity

? Matsuura, K. and Ebato, K. (2004), University-industry collaboration networks in the information security field in Japan: problems and a particular success. *2004 IEEE International Engineering Management Conference (IEEE Cat. No. 04CH37574)*, 839-844.

Abstract: Promotion of university-industry interaction has become a key topic at many levels in Japan to reform the social infrastructure. On the other hand, information security is the key to develop IT social network. In this context, what is the state of university-industry research collaboration in the information-security field in Japan? Our preliminary bibliometric analysis reported in IEMC2003 embarked on answering this question and gave a conclusion that inter-sector collaboration in the information-security field in Japan is underdeveloped. This article shows two more empirical supports for the conclusion; one uses a patent survey in this particular field in Japan, and the other is a research-network analysis confined to the major players found in the bibliometric analysis. We hope that these series of reports and methodologies used there will open the door to empirical analyses of collaboration “in a particular field in a particular country”.

? Kaban, A. and Xin, W. (2004), Context based identification of user communities from Internet chat. *2004 IEEE International Joint Conference on Neural Networks (IEEE Cat. No. 04CH37541)*, 3287-3292.

Abstract: We study the temporal connectivity structure of single-channel Internet-based chat participation streams. Somewhat similar to bibliometric analysis, and complementary to topic-analysis, we base our study solely on context information provided by the temporal order of participants’ contributions. Experimental results obtained by employing both network-analysis indicators and an aggregate Markov modelling approach indicate the existence of distinguishable communities in the about one day worth real-world chat dynamics analysed.

# Title: 2008 IEEE International Conference on Granular Computing

Full Journal Title: 2008 IEEE International Conference on Granular Computing

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Yao, J.T. (2008), Recent developments in granular computing: A bibliometrics study. *2008 IEEE International Conference on Granular Computing*, **1-2**, 74-79.

Abstract: This is a follow-up of the paper “A ten-year review of granular computing” published in 2007. We will continue to examine the most influential papers in granular computing. Based on the analysis of the impact papers, a list of key issues of granular computing research is given. We also summarize recent developments of research in granular computing.

Keywords: Analysis, Bibliometrics, Follow-Up, Fuzzy Information Granulation, Granular Computing, Impact, Ordinal Data, Papers, Research, Review, Rough Set Approach

# Title: 2008 IEEE International Conference on Management of Innovation and Technology

Full Journal Title: 2008 IEEE International Conference on Management of Innovation and Technology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? erdsri, N. and Daim, T.U. (2008), Generating Intelligence on the Research and Development Progress of Emerging Technologies Using Patent and Publication Information. *2008 IEEE International Conference on Management of Innovation and Technology*, **1-3**, 1-6.

Abstract: It is critical for technology-driven organizations to have access to intelligence on the progress of research and development (R&D) in public or private laboratories. Technology forecasting methods can be useful in these cases if there is a history of performance. However the traditional forecasting methods can not be used effectively for predicting the prospects of emerging technologies as historical information for any particular emerging technology is limited due to the short time of its appearance. The bibliometric and patent analysis approach presented in this paper allows researchers to generate intelligence on emerging technologies supported by the wealth of today’s public electronic information database. Furthermore, this paper also emphasizes the needs for technology managers to be aware of a time lag among different scientific indicators.

Keywords: Access, Analysis, Approach, Bibliometric, Bibliometric Analysis, Bibliometrics, Cases, Database, Database Tomography, Development, Emerging, Emerging Technologies, Forecasting, History, Impact, Indicators, Industry, Information, Innovation, Intelligence, Managers, Methods, Needs, Opportunities, Organizations, Patent, Patent Analysis, Performance, Progress, Public, Publication, R&D, R&D Management, Research, Research and Development, Science, Technological Intelligence, Technologies, Technology, Technology Forecasting, Time, US, Wealth

? Pretorius, L., Benade, S.J. and Kruger, S. (2008), Technology forecasting: The case of computational fluid dynamics (CFD). *2008 IEEE International Conference on Management of Innovation and Technology*, **1-3**, 7-11.

Abstract: Forecasting emerging technologies as well the rate of diffusion of resultant products are complex in the context of management of technology usually because of a lack of relevant data. Techniques such as bibliometric analysis and the Bass diffusion model are utilized in this paper to assess the growth rate and market penetration of Computational Fluid Dynamics (CFD) as a technology. The penetration and growth rate of user acceptance of two CFD codes (not identified) are simulated. Furthermore a technology forecasting model of research and innovation in the field of application of CFD in the assessment of greenhouses is presented.

Keywords: Acceptance, Analysis, Application, Assessment, Bass Diffusion Model, Bibliometric, Bibliometric Analysis, CFD, Codes, Context, Data, Diffusion, Diffusion Model, Dynamics, Emerging, Emerging Technologies, Field, Forecasting, Growth, Growth Rate, Innovation, Management, Management of Technology, Market, Model, Penetration, Research, Simulated, Technologies, Technology, Technology Forecasting

? Huang, L.C. (2008), Study on prospect of emerging technology commercialization based on bibliometrics analysis. *2008 IEEE International Conference on Management of Innovation and Technology*,**1-3**, 29-33.

Abstract: Due to the uncertainty of emerging technologies development and their commercial prospect, it has important significant for technology investment decision-making on how to judge the prospect of emerging technology commercialization. Through the introduction on the relationship of bibliometrics and industry development, at first, this paper illuminates that it is a good method to research the emerging technology commercial prospect by using bibliometrics analysis methodology; then, the degree of emerging technology approaching to commercialization is illustrated by judging the technology maturity, at last, the degree of emerging technology approaching to commercialization success is analysis by judging whether the environment has being ready based on bibliometrics analysis approach.

Keywords: Analysis, Approach, Bibliometrics, Bibliometrics Analysis, Commercial Environment Analysis, Commercial Prospect, Decision Making, Decision-Making, Development, Emerging, Emerging Technologies, Emerging Technology, Environment, First, Industry, Investment, Methodology, Relationship, Research, Success, Technologies, Technology, Technology Maturity, Uncertainty

# Title: IEEE Engineering in Medicine and Biology Magazine

Full Journal Title: IEEE Engineering in Medicine and Biology Magazine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Johnson, A.T. (2010), threshold for plagiarism. *IEEE Engineering in Medicine and Biology Magazine*, **29** (2), 6.

Keywords: Plagiarism

# Title: IEEE Intelligent Systems

Full Journal Title: IEEE Intelligent Systems

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? O’Leary, D.E. (2008), The most cited intelligent systems articles. *IEEE Intelligent Systems*, **23** (4), 10-13.

Full Text: [2008\IEE Int Sys23, 10.pdf](2008/IEE%20Int%20Sys23,%2010.pdf)

# Title: IEEE International Symposium on Technology and Society

Full Journal Title: IEEE International Symposium on Technology and Society

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Dalpé, R., Bouchard, L. and Ducharme, D. (2000), Scientific, medical and industrial issues in breast and ovarian cancer genes research. *IEEE International Symposium on Technology and Society*, 6-8 Sept., 91-99.

Full Text: [I\IEEE Int Sym Tec Soc, 91.pdf](I/IEEE%20Int%20Sym%20Tec%20Soc,%2091.pdf)

Abstract: This paper explores the strategies used by researchers in the study of breast and ovarian cancer genes. Researchers are confronted with a variety of important issues. First, they vie for financial support and recognition both inside and outside their scientific community. Second, they must deal with industry, whose interest lies in the development of potential tests and therapies. Third, they are challenged by important medical questions when fi nancial imperatives threaten to take precedence over health concerns. This study, based on in-depth interviews of three researchers, explores the organization and financing of research, the impact of this research on medicine, and interactions with industry.

# Title: IEEE Software

Full Journal Title: IEEE Software

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Gilbode, M. (2005), Originality versus self-plagiarism. *IEEE Software*, **22** (3), 8.

Full Text: [2005\IEE Sof22, 8.pdf](2005/IEE%20Sof22,%208.pdf)

Keywords: Self-Plagiarism

? Harrison, W. (2005), Originality versus self-plagiarism - Response. *IEEE Software*, **22** (3), 8-9.

Full Text: [2005\IEE Sof22, 8.pdf](2005/IEE%20Sof22,%208.pdf)

Keywords: Self-Plagiarism

? O’Leary, D.E. (2009), The most cited *IEEE Software* articles. *IEEE Software*, **26** (1), 12-14.

Full Text: [2009\IEE Sof26, 12.pdf](2009/IEE%20Sof26,%2012.pdf)

Keywords: Design, Framework, Model, Programs, Quality, Requirements, Reusability, Reuse, Self-Citation, Systems

# Title: IEEE Technology and Society Magazine

Full Journal Title: IEEE Technology and Society Magazine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Fiedler, R.L. and Kaner, C. (2010), Plagiarism-detection services: How well do they actually perform? *IEEE Technology and Society Magazine*, **29** (4), 37-43

Keywords: Law, Norms, Property

# Title: IEEE Transactions on Automatic Control

Full Journal Title: IEEE Transactions on Automatic Control

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Akaike, H. (1974), New look at statistical model identification. *IEEE Transactions on Automatic Control*, **6**, 716-723.

Full Text: [-1959\IEE Tra Aut Con6, 716.pdf](-1959/IEE%20Tra%20Aut%20Con6,%20716.pdf)

Abstract: The history of the development of statistical hypothesis testing in time series analysis is reviewed briefly and it is pointed out that the hypothesis testing procedure is not adequately defined as the procedure for statistical model identilication. The classical maximum likelihood estimation procedure is reviewed and a new estimate minimum information theoretical criterion (AIC) estimate (MAICE) which is designed for the purpose of statistical identification is introduced. When there are several competing models the MAICE is defined by the model and the maximum likelihood estimates of the parameters which give the minimum of AIC defined by

AIC = (-2)log(maximum likelihood) + 2(number of

independently adjusted parameters within the model).

MAICE provides a versatile procedure for statistical model identification which isf ree from the ambiguities inherienn tth e application of conventional hypothesis testing procedure. The practical utility of MAICE in time series analysis is demonstratwedit h some numerical examples.

# Title: IEEE Transactions on Education

Full Journal Title: IEEE Transactions on Education

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mccuen, R.H. (2008), The plagiarism decision process: The role of pressure and rationalization. *IEEE Transactions on Education*, **51** (2), 152-156.

Full Text: [2008\IEE Tra Edu51, 152.pdf](2008/IEE%20Tra%20Edu51,%20152.pdf)

Abstract: Plagiarism is more than just the failure to use quotation marks or to cite a paraphrased passage. Dual publishing, self-plagiarism, and ghost authorship are other forms of plagiarism. Plagiarism is generally viewed as an act when, in fact, it is a decision process. Five steps are used here to represent plagiarism as a decision process. Various forms of pressure act as stimuli to begin the process, and rationalization is used to justify the decision and to avoid feelings of regret. Education is necessary to decrease the likelihood that an individual will opt to plagiarize when faced with the opportunity. Considerations for education of graduate students and young faculty are discussed.

Keywords: Authorship, Decision Making, Dual Publishing, Education, Ethics, Faculty, Ghost Authorship, Plagiarism, Pressure, Rationalization, Self-Plagiarism

? Cosma, G. and Joy, M. (2008), Towards a definition of source-code plagiarism. *IEEE Transactions on Education*, **51** (2), 195-200.

Full Text: [2008\IEE Tra Edu51, 195.pdf](2008/IEE%20Tra%20Edu51,%20195.pdf)

Abstract: A survey using a scenario-based questionnaire format has provided insight into the perceptions of U.K academics who teach programming on computing courses. This survey across various higher education (HE) institutions investigates what academics feel constitutes source-code plagiarism in an undergraduate context. Academics’ responses on issues surrounding source-code reuse and acknowledgement are discussed. A general consensus exists among academics that a “zero tolerance” plagiarism policy is appropriate; however, some issues concerning source-code reuse and acknowledgement raised controversial responses. This paper discusses the most important findings from the survey and proposes a definition of what can constitute source-code plagiarism from the perspective of U.K. academics who teach programming on computing courses.

Keywords: Education, Plagiarism, Reuse, Self-Plagiarism, Source-Code Plagiarism Definition, Survey

? Joy, M., Cosma, G., Yau, J.Y.K. and Sinclair, J. (2011), Source code plagiarism-a student perspective. *IEEE Transactions on Education*, **54** (1), 125-132.

Full Text: 2011\IEE Tra Edu54, 125.pdf

Abstract: This paper considers the problem of source code plagiarism by students within the computing disciplines and reports the results of a survey of students in Computing departments in 18 institutions in the U. K. This survey was designed to investigate how well students understand the concept of source code plagiarism and to discover what, if any, specific aspects might cause particular confusion. An analysis of the results was carried out to assess understanding by topic and to discover whether various demographic factors may have an influence on that understanding. Within the survey sample, it appeared that the demographic factors tested did not generally affect students’ understanding of source code plagiarism. However, analysis of the data for specific topics revealed that there are several areas of activity where the boundary between acceptable and unacceptable behavior is not clearly understood. These findings have implications for plagiarism education programs.

Keywords: Computing Disciplines, Education, Plagiarism, Source Code, Student Survey, Students, Survey, University Education

# Title: IEEE Transactions on Engineering Management

Full Journal Title: IEEE Transactions on Engineering Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kostoff, R.N. and Scaller, R.R. (2001), Science and technology roadmaps. *IEEE Transactions on Engineering Management*, **48** (2), 132-143.

Full Text: [2001\IEEE Tra Eng Man48, 132.pdf](2001/IEEE%20Tra%20Eng%20Man48,%20132.pdf)

Abstract: Science and technology (S&T) roadmaps are used in industry, government, and academia to portray the structural relationships among science, technology and applications. Roadmaps are employed as decision aids to improve coordination of activities and resources in increasingly complex and uncertain environments. Specific uses of roadmaps include: S&T management including strategy, planning, executing, reviewing, and transitioning; S&T marketing; enhancing communications among researchers, technologists, product managers, suppliers, users, and other stakeholders; identifying gaps and opportunities in S&T programs; and identifying obstacles to rapid and low-cost product development. S&T managers also use roadmaps to help identify those S&T areas that have high potential promise, and to accelerate the transfer of the S&T to eventual products, However, there has been little attention paid to the practice of roadmapping in the published literature. This paper is a first attempt to bring some common definition to roadmapping practices and display the underlying unity of seemingly fragmented roadmap approaches. The paper begins with generic roadmap definitions, including a taxonomy of roadmaps that attempts to better classify and unify the broad spectrum of roadmap objectives and uses. Characteristics of retrospective and prospective roadmaps are then identified and analyzed, as well as summary characteristics of bibliometric-based S&T mapping techniques. The roadmap construction process, including fundamental principles for constructing high-quality roadmaps, is presented in detail.

Keywords: AIDS, Characteristics, Communications, Construction, Decision, Development, First, Literature, Management, Mapping, Marketing, Planning, Potential, Practice, Practices, Principles, Prospective, Roadmaps, Science, Stakeholders, Taxonomy, Techniques, Technology

# Title: IEEE Transactions on Fuzzy Systems

Full Journal Title: [IEEE Transactions on Fuzzy Systems](http://ieeexplore.ieee.org/xpl/periodicals.jsp)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Torra, V. and Narukawa, Y. (2008), The h-index and the number of citations: Two fuzzy integrals. *IEEE Transactions on Fuzzy Systems*, **16** (3), 795-797.

Full Text: [2008\IEEE Tra Fuz Sys16, 795.pdf](2008/IEEE%20Tra%20Fuz%20Sys16,%20795.pdf)

Abstract: In this paper, we review two of the most well-known citation indexes and establish their connections with the Choquet and Sugeno integrals. In particular, we show that the recently established h-index is a particular case of the Sugeno integral, and that the number of citations corresponds to the Choquet integral. In both cases, they use the same fuzzy measure. The results presented here permit one to envision new indexes defined in terms of fuzzy integrals using other types of fuzzy measures. A few considerations in this respect are also included in this paper. Indexes for taking into account recent research and the publisher credibility are outlined.

Keywords: Choquet Integral, Citation, Citation Indexes, Citations, Credibility, Fuzzy Integrals, H Index, H-Index, Research, Review, Sugeno Integral

# Title: IEEE Transactions on Information Technology in Biomedicine

Full Journal Title: [IEEE Transactions on Information Technology in Biomedicine](http://ieeexplore.ieee.org/Xplore/guesthome.jsp)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bansard, J.Y., Rebholz-Schuhmann, D., Cameron, G., Clark, D., van Mulligen, E., Beltrame, F., Barbolla, E.D., Martin-Sanchez, F., Milanesi, L., Tollis, I., van der Lei, J. and Coatrieux, J.L. (2007), Medical informatics and bioinformatics: A bibliometric study. *IEEE Transactions on Information Technology in Biomedicine*, **11** (3), 237-243.

Full Text: [2007\IEE Tra Inf Tec Bio11, 237.pdf](2007/IEE%20Tra%20Inf%20Tec%20Bio11,%20237.pdf)

Abstract: This paper reports on an analysis of the bioinformatics and medical informatics literature with the objective to identify upcoming trends that are shared among both research fields to derive benefits from potential collaborative initiatives for their future. Our results present the main characteristics of the two fields and show that these domains are still relatively separated.

Keywords: Analysis, Bibliometric, Bibliometric Study, Bibliometrics, Bioinformatics (BI), Biology, Characteristics, Correspondence Analysis, Informatics, Medical, Medical Informatics, Medicine, Paper, Publications, Research, Trends

# Title: IEEE Transactions on Information Theory

Full Journal Title: [IEEE Transactions on Information Theory](http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=18)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0018-9448

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Li, W.T. (1992), Random texts exhibit Zipf-law-like word-frequency distribution. *IEEE Transactions on Information Theory*, **38** (6), 1842-1845.

Full Text: [1992\IEE Tra Inf The38, 1842.pdf](1992/IEE%20Tra%20Inf%20The38,%201842.pdf)

Abstract: It is shown that the distribution of word frequencies for randomly generated texts is very similar to Zipf’s law observed in natural languages such as English. The facts that the frequency of occurrence of a word is almost an inverse power law function of its rank and the exponent of this inverse power law is very close to 1 are largely due to the transformation from the word’s length to its rank, which stretches an exponential function to a power law function.

Keywords: Statistical Linguistics, Zipf Law, Power-Law Distribution, Random Texts

# Title: IEEE Transactions on Knowledge and Data Engineering

Full Journal Title: IEEE Transactions on Knowledge and Data Engineering

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bi, H.H., Wang, J.R. and Lin, D.K.J. (2011), Comprehensive citation index for research networks. *IEEE Transactions on Knowledge and Data Engineering*, **23** (8), 1274-1278.

Full Text: [2011\IEE Tra Kno Dat Eng23, 1274.pdf](2011/IEE%20Tra%20Kno%20Dat%20Eng23,%201274.pdf)

Abstract: The existing Science Citation Index only counts direct citations, whereas PageRank disregards the number of direct citations. We propose a new Comprehensive Citation Index (CCI) that evaluates both direct and indirect intellectual influence of research papers, and show that CCI is more reliable in discovering research papers with far-reaching influence.

Keywords: Citation, Citation Analysis, Citation Networks, Citations, Comprehensive Citation Index, Impact, Information Systems, Pagerank, Papers, Research, Science, Science Citation Index

# Title: IEEE Transactions on Neural Systems and Rehabilitation Engineering

Full Journal Title: IEEE Transactions on Neural Systems and Rehabilitation Engineering

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ryan, C., Tewey, B., Newman, S., Turner, T. and Jaeger, R.J. (2004), Estimating research productivity and quality in assistive technology: A bibliometric analysis spanning four decades. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, **12** (4), 422-429.

Abstract: Objective: Conduct a quantitative assessment of the number of papers contained in MEDLINE related to selected types of assistive technology (AT), and to identify journals publishing significant numbers of papers related to AT, and evaluate them with quantitative productivity and quality measures. Design: Consecutive sample of all papers in MEDLINE identified by standard medical subject headings for selected types of AT from 1963-2003. Main Outcome Measures: Number of journals carrying AT papers, papers per journal (both total number and those specific to AT), journal impact factor, circulation, and number of AT citations per year over time for each area of AT. Results: We present search terms, estimates of the numbers of AT citations in MEDLINE, the journals most likely to contain articles related to AT, journal impact factors, and journal circulations (when available). We also present the number of citations in various areas of AT over time from 1963-2003. Suggestions are presented for possible future modifications of the MEDLINE controlled vocabulary, based on terminology used in existing AT classifications schemes, such as ISO 9999. Conclusion: Research papers in the areas of AT examined showed publication across a wide variety of journals. There are a number of journals publishing articles in AT that have impact factors above the median. Some areas of AT have shown an increase in publications per year over time, while others have shown a more constant level of productivity.

Keywords: Bias, Bibliometric, Bibliometric Analysis, Citation, Citations, Databases, Impact, Impact Factor, Impact Factors, Indicators, Journal, Journal Impact, Journals, Libraries, Publication, Publications, Research, Research Productivity, Terminology

# Title: IEEE Transactions on Nuclear Science

Full Journal Title: [IEEE Transactions on Nuclear Science](http://ieeexplore.ieee.org/Xplore/dynhome.jsp)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Galloway, K.F. (2003), High-impact papers presented at the IEEE Nuclear and Space Radiation Effects Conference: The view in 2003. *IEEE Transactions on Nuclear Science*, **50** (3), 457-465.

Full Text: [2003\IEEE Tra Nuc Sci50, 457.pdf](2003/IEEE%20Tra%20Nuc%20Sci50,%20457.pdf)

Abstract: This paper identifies a selection of papers presented at the NSREC and published in the IEEE TRANSACTIONS ON NUCLEAR SCIENCE that have had measurable impact on radiation effects research and the radiation effects community. Criteria include papers selected for the Outstanding Paper Award at the NSREC or papers from the NSREC that have been highly cited by authors of other journal publications. Additionally, several papers are identified that, even though they are not selected by the above criteria, have impacted the technical areas served by the NSREC. Some observations are made on the methodology used here for selecting high-impact papers.

Keywords: Authors, Journal, NSREC, Outstanding Paper Award, Oxide-Semiconductor Transistors, Radiation Effects, Research, Science

# Title: IEEE Transactions on Professional Communication

Full Journal Title: IEEE Transactions on Professional Communication

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Garfield, E. (1973), What scientific journals can tell us about scientific journals. *IEEE Transactions on Professional Communication*, **PC16** (4), 200-203.

? Subramanyam, K. (1979), Lotka’s law and the literature of computer-science. *IEEE Transactions on Professional Communication*, **22** (4), 187-189.

? Lowry, P.B., Humpherys, S.L., Malwitz, J. and Nix, J. (2007), A scientometric study of the perceived quality of business and technical communication journals. *IEEE Transactions on Professional Communication*, **50** (4), 352-378.

Full Text: [2007\IEE Tra Pro Com50, 352.pdf](2007/IEE%20Tra%20Pro%20Com50,%20352.pdf)

Abstract: In this paper we present, from an academic perspective, the perceived quality ratings of business and technical communication journals. Through a survey of academic experts, we asked respondents to rate the top overall journals, business communication journals, technical communication journals, and the top journals from a technology perspective. In addition, we asked respondents to list the journals that they read most frequently. We analyzed the results by breaking down the rankings into world regions and academic departments. The top-three overall journals for all regions are Journal of Business and Technical Communication, Journal of Business Communication, and IEEE TRANSACTIONS ON PROFESSIONAL COMMUNICATION. Importantly, differences by world region and academic department type were found in all these rankings. These results can support researchers worldwide by helping them tartlet their publishing efforts to journals that have the best fit with their business and technical communication discipline, world region, and academic home.

Keywords: Articles, Authors, Business Communication, Citation Analysis, Field, Global Perceptions, Impact Factors, Journal Influence, Journal Quality, Journal Rankings, Journal Survey, Perspective, Professional Communication, Quality, Rankings, Science, Scientometrics, Technical Communication, Technology-Based Communication

? Smith, E.O. (2010), Documentation: A history and critique of attribution, commentary, glosses, marginalia, notes, bibliographies, works-cited lists, and citation indexing and analysis. *IEEE Transactions on Professional Communication*, **53** (3), 317-319.

Full Text: [2010\IEE Tra Pro Com53, 317.pdf](2010/IEE%20Tra%20Pro%20Com53,%20317.pdf)

Keywords: Attribution, Bibliographies, Citation, Citations, Commentary, Documentation, Endnotes, Glosses, History, Marginalia

# Title: IEEE Transactions on Power Delivery

Title: IEEE Transactions on Power Delivery: A Publication of the Power Engineering Society

Full Journal Title: IEEE Transactions on Power Delivery

ISO Abbreviated Title: IEEE Trans. Power Deliv.

JCR Abbreviated Title: IEEE T Power Deliver

ISSN: 0885-8977

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: IEEE-Inst Electrical Electronics Engineers Inc

Publisher Address: 345 E 47th St, New York, NY 10017-2394

Subject Categories:

Engineering, Electrical & Electronic: Impact Factor

Chen, J.Y. and Chang, R.J. (1996), Field experience with overhead distribution equipment under severe contamination. *IEEE Transactions on Power Delivery*, **11**, 1640-1645.

Abstract: A unique type of solid contamination on overhead distribution equipment was found in some regions of the Taiwan Power Company. The contamination was caused by the direct deposit of coastal sand dust during the winter season, An account of the field condition is given and the contaminants are characterized to provide better understanding of the pollution phenomenon. The sand contains high level of clay and salt that make it adhere to the overhead equipment and renders it highly conductive under moist conditions. High salt content not only caused accelerated metal corrosion but also high leakage current that led to pole fires. The burning of crossarms, due to high leakage current, is a failure mode that has not been adequately addressed in the literature. Most prior papers on pollution focused on contamination flashover. The leakage current measurements were carried out for overhead equipment using an artificial contamination test to quantify the effect of these unique phenomenon, Some effective counter measures are described.

# Title: (IE (I) Journal-EN)

Deo, N. and Ali, M. (1996), Dye removal from aqueous solutions by adsorption on a low cost material. *IE (I) Journal-EN*, **76**, 48-53.

# Title: IFLA Council and General Conference

Full Journal Title: [IFLA Council and General Conference](http://www.ifla.org/IV/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

von Ungern-Sternberg, S. (1995), Applications in teaching bibliometrics. *61st IFLA General Conference - Conference Proceedings*, Istanbul, Turkey, 20-25 August.

Full Text: [I\IFLA Gen Con-von Ungern-Sternberg.pdf](I/IFLA%20Gen%20Con-von%20Ungern-Sternberg.pdf)

Abstract: In recent discussions of library and information science (LIS) educators, reducing heterophily, the lack of similarity between two groups or individuals, among LIS researchers and practitioners has b een emphasized. Two researchers with different backgrounds, one in bibliometrics and the other in case study, have observed and discussed applications of bibliometrics and case study as used in teach ing research methods. The main thrust is in providing tools for teaching these research methods so that the gap between research and practical application could be narrowed. Dr. Leena Siitonen discusses in her paper applications in teaching case study research methods. Bibliometric methods are seldom used by librarians in practical work. Still these methods grow more important when planning information provision in research libraries. New subject fields develop and the number of interdisciplinary publications have during the last decades grown exponentially. It is, though, difficult to organise information in new fields, when the classification systems, used f or instance by journal services, have a discipline based structure. The need to organize this information and help the user to identify relevant documents grows more important, and at the same time t he huge amount of available documents give great possibilities to apply bibliometrics easily and in the frame of practical work. Bibliometrics provide a tool for getting the core for developing a loc al collection in a new field. Teaching bibliometric methods could be developed by 1. seminars, where the students learn the methods and also learn to interprete their results by comparing with other studies, and 2. by use of online systems which give good bases for different bibliometric methods.

Keywords: Bibliometrics, Information Science, Library Science, Research Methods, Social Science Research

Ríos, D.R. (2000), The bibliometrics: Penetration level in the university teaching of library science and its application in the librarian field in the countries of Mercosur. *IFLA Council and General Conference*.

Full Text: [I\IFLA Gen Con-Rios.pdf](I/IFLA%20Gen%20Con-Rios.pdf)

Abstract: The incipient presence of the bibliometics in the university teaching field in the careers of library science of the Mercosur (constituent countries: Argentine, Brazil, Paraguay and Uruguay- invited countries Bolivia and Chile) is here mentioned as well as the almost null participation as specific subject in the careers above mentioned. It is important to denote that the circulation of specific bibliography of local authors mentioned in the catalogues of universities and libraries is relatively new and with a reduced number of authors. Taking into account the available documentation it is shown that the scientific research that applies the methodology and techniques of the bibliometrics is found in the field of biomedical libraries and it is scarce in the humanity libraries. In our country, if the tendency of these last years continues, as the use of computers and of processing word and calculation programs, the constant training and the network among libraries, the quantitative treatment of the information and documentation will be easier and the bibliometrics will be a basic instrument - but not the only one - to improve the efficiency in taking decisions for the acquisition of collections, identifications of users, analysis of human resources and valorization of financial resources, among other aspects. It is here concluded that besides of the teaching and application of the bibliometrics, it is important to develop wide and comprehensive database, normalized and indexed in Spanish and of easy access through the new telematic technology. Otherwise, it is observed that the bibliometric investigations appear vitiated from their origin. Texto completo. http://www.ifla.org/IV/ifla66/papers/162-127e.htm

Keywords: Bibliometría, Latinoamérica, Documentación, Formación professional, Enseñanza

# Title: IFLA Journal

Full Journal Title: [IFLA Journal](http://ifl.sagepub.com/content/by/year)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mukherjee, B. (2009), Journal of the American Society for Information Science and Technology (2000-2007): A bibliometric study. *IFLA Journal*, **35** (4), 341-358.

Full Text: [2009\IFLA J35, 341.pdf](2009/IFLA%20J35,%20341.pdf)

Abstract: The Journal of the American Society for Information Science and Technology (JASIST) has been playing a vital role in the dissemination of scholarly articles in library and information science since 1950. This paper presents the results of a bibliometric study of articles published in the JASIST from 2000 to 2007. It examines the distribution of papers under various headings, including authorship pattern and nature of collaboration, geographic distribution of articles, nature of cited and citing references, prolifi c authors and highly cited authors. Data were collected using the Web of Science and analyzed using Microsoft Excel. Results indicate that during the sample period the rate of publication was uneven and the most prominent form of publication was articles. The trend of authorship pattern of articles is towards collaboration and authors from 47 countries contributed articles. The country-wise distribution reveals that the highest number of contributions was made by US authors followed by the UK. The number of references cited per article increased from 2000–2007 whereas articles received citations in decreasing numbers during the same period. The results suggest that articles need to have been published for more than 2 years before they receive adequate numbers of citations.

Keywords: Bibliometrics, Journal of the American Society for Information Science and Technology, JASIST

# Title: Iheringia Serie Zoologia

Full Journal Title: Iheringia Serie Zoologia

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Nabout, J.C., Bini, L.M. and Diniz, J.A.F. (2010), Global literature of fiddler crabs, genus UCA (Decapoda, Ocypodidae): Trends and future directions. *Iheringia Serie Zoologia*, **100** (4), 463-468.

Full Text: 2010\Ihe Ser Zoo100, 463.pdf

Abstract: Crabs of the genus Uca Leach, 1814 are characterized by having strong sexual dimorphism and a global distribution. Currently, 97 species have been described and analyzed under several aspects, including population ecology, physiology and ethology. However, there is no general summary of the information from the various literatures. The aim of this study is to perform a scientometric analysis of fiddler crab studies. For this we searched papers available in the Thomson ISI database that contained the words “Uca” OR “fiddler\* crab\*” between the years 1991 and 2007. For each paper, we researched and recorded the following characteristics: publication year; journal of publication; the first author’s nationality; the country where the study was conducted; study type; species studied; and the work area. Our results indicated that there was no increase in the number of articles through the years considered. The Journal of Experimental Marine Biology and Ecology published most of the articles on Uca, indicating the importance of this group as a model for testing ecological hypotheses using experimental approaches. Our results also showed that United States had the highest number of authors and published studies on Uca, following the overall trend in dominance on scientific research. Furthermore, using models with three variables (per capita income, number of species of Uca and extent of coastal countries) we observed that, according to the Akaike Information Criterion, the per capita income was the most important correlate for the number of articles per country (both the author’s country and country of study). Additionally, our results show that the species U. pugilator (distributed on the East Coast of the North American continent) was the species most singularly referenced in the papers considered. Moreover, our results indicate that most studies on Uca use a descriptive and local scale. The majority of papers in our literature search reflect studies in population biology, followed by behavioral and physiological characteristics.

Keywords: Aic, Authors, Biology, Conservation, Ecology, Impact, Information, Journal, Journals, Limnology, Literature, Papers, Per Capita Income, Population Biology, Publication, Pugilator, Research, Residues, Scientific Research, Scientometric Analysis, Scientometrics, Systematics, Taxonomy, Trend, UCA Pugilator

# Title: Image-the Journal of Nursing Scholarship

Full Journal Title: Image-the Journal of Nursing Scholarship

ISO Abbreviated Title: Image. J. Nurs. Sch.

JCR Abbreviated Title:

ISSN: 0743-5150

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schulmeister, L. (1998), Quotation and reference accuracy of three nursing journals. *Image-the Journal of Nursing Scholarship*, **30** (2), 143-146.

# Title: Immunology

Full Journal Title: Immunology

ISO Abbreviated Title: Immunology

JCR Abbreviated Title: Immunology

ISSN: 0019-2805

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Blackwell Science Ltd

Publisher Address: PO Box 88, Osney Mead, Oxford OX2 0NE, Oxon, England

Subject Categories:

Immunology: Impact Factor

? Garssen, J., Nijkamp, F.P., Wagenaar, S.S., Zwart, A., Askenase, P.W. and van Loveren, H. (1989), Regulation of delayed-type hypersensitivity-like responses in the mouse lung, determined with histological procedures: Serotonin, T-cell suppressor-inducer factor and high antigen dose tolerance regulate the magnitude of T-cell dependent inflammatory reactions. *Immunology*, **68** (1), 51-58.

Abstract: We have studied delayed-type hypersensitivity (DTH) responses to picryl chloride (PCl) in the lungs of mice. Intranasal challenge with 0.6% picryl sulphonic acid (PSA), a water soluble form of PCl, of BALB/c mice, sensitized with PCl epicutaneously 1 week earlier, induced an accumulation of mononuclear inflammatory cells around bronchioli and blood vessels. Maximal inflammatory responses were seen 48 hr after challenge. These responses were antigen-specific, and also T-cell dependent, since athymic nude mice failed to show this reaction. A role for mast cells in the responses was studied using two strains of mast cell-deficient mice. In one of these (W/Wv) lung DTH responses to PCl were reduced severely. In the other strain (S1/S1d) the responses around vessels were decreased slightly, whereas the responses in the interstitial tissue and around bronchioli were similar to those in +/+ littermate controls. Involvement of serotonin was investigated using two serotonin receptor antagonists, i.e. methysergide and ketanserin. Treatment of mice with either of the antagonists prevented occurrence of the DTH-like reaction in the lung after intranasal antigen challenge. In the lungs of sensitized mice, significantly increased permeability was established 2 hr after antigen challenge. It was concluded that release of serotonin in the lung may provide an environment that comprises local vascular permeability and that facilitates the local recruitment and possibly the activation of DTH effector T cells, leading to subsequent attraction of mononuclear leucocytes into the lung. Immunological regulation of the DTH-like reactions in the lung was similar to that of contact sensitivity in the skin, since intravenous injection of an antigen-specific T-cell suppressor inducer factor prior to sensitization or pretreatment with a high dose of picryl sulphonic acid intravenously both resulted in reduction of the DTH-like lung histological response to picryl sulphonic acid. From these findings it was concluded that DTH-like lung responses are similar to DTH responses in the skin.

# Title: Implementation Science

Full Journal Title: [Implementation Science](http://www.implementationscience.com/articles/browse.asp)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Estabrooks, C.A., Derksen, L., Winther, C., Lavis, J.N., Scott, S.D., Wallin, L. and Profetto-McGrath, J. (2008), The intellectual structure and substance of the knowledge utilization field: A longitudinal author co-citation analysis, 1945 to 2004. *Implementation Science*, **3**, Article Number: 49.

Full Text: [2008\Imp Sci3, 49.pdf](2008/Imp%20Sci3,%2049.pdf)

Abstract: Background: It has been argued that science and society are in the midst of a far-reaching renegotiation of the social contract between science and society, with society becoming a far more active partner in the creation of knowledge. On the one hand, new forms of knowledge production are emerging, and on the other, both science and society are experiencing a rapid acceleration in new forms of knowledge utilization. Concomitantly since the Second World War, the science underpinning the knowledge utilization field has had exponential growth. Few in-depth examinations of this field exist, and no comprehensive analyses have used bibliometric methods. Methods: Using bibliometric analysis, specifically first author co-citation analysis, our group undertook a domain analysis of the knowledge utilization field, tracing its historical development between 1945 and 2004. Our purposes were to map the historical development of knowledge utilization as a field, and to identify the changing intellectual structure of its scientific domains. We analyzed more than 5,000 articles using citation data drawn from the Web of Science (R). Search terms were combinations of knowledge, research, evidence, guidelines, ideas, science, innovation, technology, information theory and use, utilization, and uptake. Results: We provide an overview of the intellectual structure and how it changed over six decades. The field does not become large enough to represent with a co-citation map until the mid-1960s. Our findings demonstrate vigorous growth from the mid-1960s through 2004, as well as the emergence of specialized domains reflecting distinct collectives of intellectual activity and thought. Until the mid-1980s, the major domains were focused on innovation diffusion, technology transfer, and knowledge utilization. Beginning slowly in the mid-1980s and then growing rapidly, a fourth scientific domain, evidence-based medicine, emerged. The field is dominated in all decades by one individual, Everett Rogers, and by one paradigm, innovation diffusion. Conclusion: We conclude that the received view that social science disciplines are in a state where no accepted set of principles or theories guide research (i.e., that they are pre-paradigmatic) could not be supported for this field. Second, we document the emergence of a new domain within the knowledge utilization field, evidence-based medicine. Third, we conclude that Everett Rogers was the dominant figure in the field and, until the emergence of evidence-based medicine, his representation of the general diffusion model was the dominant paradigm in the field.

Keywords: Activity, Analyses, Analysis, Applied Social-Research, Author Cocitation Analysis, Bibliometric, Bibliometric Analysis, Bibliometric Methods, Citation, Citation Analysis, Co-Citation, Co-Citation Analysis, Cocitation, Contract, Data, Development, Diffusion, Diffusion Model, Disciplines, Domain Analysis, Emergence, Emerging, Evidence, Evidence Based, Evidence Based Medicine, Evidence-Based, Evidence-Based Medicine, Field, First, Forms, General, Group, Growth, Guidelines, Health-Care, Information, Innovation, Intellectual Structure, Invisible College, Knowledge, Knowledge Production, Longitudinal, Medicine, Methods, Model, NOV, Paradigm, Practice Gap, Principles, Production, Rapid, Renegotiation, Representation, Research, Science, Similarity Measures, Social, Social Contract, Social Science, Society, State, Structure, Substance, Technology, Technology Transfer, Technology-Transfer, Theory, Transfer, United-States, Uptake, Utilization, Web of Science

? Vest, J.R. and Gamm, L.D. (2009), A critical review of the research literature on Six Sigma, Lean and StuderGroup’s Hardwiring Excellence in the United States: the need to demonstrate and communicate the effectiveness of transformation strategies in healthcare. *Implementation Science*, **4**, Article Number 35.

Full Text: [2009\Imp Sci4, 35.pdf](2009/Imp%20Sci4,%2035.pdf)

Abstract: Background: U.S. healthcare organizations are confronted with numerous and varied transformational strategies promising improvements along all dimensions of quality and performance. This article examines the peer-reviewed literature from the U.S. for evidence of effectiveness among three current popular transformational strategies: Six Sigma, Lean/Toyota Production System, and Studer’s Hardwiring Excellence. Methods: The English language health, healthcare management, and organizational science literature (up to December 2007) indexed in MEDLINE, Web of Science, ABI/Inform, Cochrane Library, CINAHL, and ERIC was reviewed for studies on the aforementioned transformation strategies in healthcare settings. Articles were included if they: appeared in a peer-reviewed journal; described a specific intervention; were not classified as a pilot study; provided quantitative data; and were not review articles. Nine references on Six Sigma, nine on Lean/Toyota Production System, and one on StuderGroup meet the study’s eligibility criteria. Results: The reviewed studies universally concluded the implementations of these transformation strategies were successful in improving a variety of healthcare related processes and outcomes. Additionally, the existing literature reflects a wide application of these transformation strategies in terms of both settings and problems. However, despite these positive features, the vast majority had methodological limitations that might undermine the validity of the results. Common features included: weak study designs, inappropriate analyses, and failures to rule out alternative hypotheses. Furthermore, frequently absent was any attention to changes in organizational culture or substantial evidence of lasting effects from these efforts. Conclusion: Despite the current popularity of these strategies, few studies meet the inclusion criteria for this review. Furthermore, each could have been improved substantially in order to ensure the validity of the conclusions, demonstrate sustainability, investigate changes in organizational culture, or even how one strategy interfaced with other concurrent and subsequent transformation efforts. While informative results can be gleaned from less rigorous studies, improved design and analysis can more effectively guide healthcare leaders who are motivated to transform their organizations and convince others of the need to employ such strategies. Demanding more exacting evaluation of projects consultants, or partnerships with health management researchers in academic settings, can support such efforts.

Keywords: Analysis, Articles, Attention, Cochrane, Culture, Effectiveness, Errors, Evaluation, Improvement, Intervention, Journal, Leaders, Literature, Management, Methods, Organizational Transformation, Outcomes, Partnerships, Principles, Quality, Quantitative, Reduction, Research, Researchers, Review, Science, Strategy, Surgery, Time, Toyota Production System, Validity, Waste, Web of Science

? Hrisos, S., Eccles, M.P., Francis, J.J., Dickinson, H.O., Kaner, E.F.S., Beyer, F. and Johnston, M. (2009), Are there valid proxy measures of clinical behaviour? A systematic review. *Implementation Science*, **4**, Article Number 37.

Full Text: [2009\Imp Sci4, 37.pdf](2009/Imp%20Sci4,%2037.pdf)

Abstract: Background: Accurate measures of health professionals’ clinical practice are critically important to guide health policy decisions, as well as for professional self-evaluation and for research-based investigation of clinical practice and process of care. It is often not feasible or ethical to measure behaviour through direct observation, and rigorous behavioural measures are difficult and costly to use. The aim of this review was to identify the current evidence relating to the relationships between proxy measures and direct measures of clinical behaviour. In particular, the accuracy of medical record review, clinician self-reported and patient-reported behaviour was assessed relative to directly observed behaviour. Methods: We searched: PsycINFO; MEDLINE; EMBASE; CINAHL; Cochrane Central Register of Controlled Trials; science/social science citation index; Current contents (social & behavioural med/clinical med); ISI conference proceedings; and Index to Theses. Inclusion criteria: empirical, quantitative studies; and examining clinical behaviours. An independent, direct measure of behaviour (by standardised patient, other trained observer or by video/audio recording) was considered the ‘gold standard’ for comparison. Proxy measures of behaviour included: retrospective self-report; patient-report; or chart-review. All titles, abstracts, and full text articles retrieved by electronic searching were screened for inclusion and abstracted independently by two reviewers. Disagreements were resolved by discussion with a third reviewer where necessary. Results: Fifteen reports originating from 11 studies met the inclusion criteria. The method of direct measurement was by standardised patient in six reports, trained observer in three reports, and audio/video recording in six reports. Multiple proxy measures of behaviour were compared in five of 15 reports. Only four of 15 reports used appropriate statistical methods to compare measures. Some direct measures failed to meet our validity criteria. The accuracy of patient report and chart review as proxy measures varied considerably across a wide range of clinical actions. The evidence for clinician self-report was in conclusive. Conclusion: Valid measures of clinical behaviour are of fundamental importance to accurately identify gaps in care delivery, improve quality of care, and ultimately to improve patient care. However, the evidence base for three commonly used proxy measures of clinicians’ behaviour is very limited. Further research is needed to better establish the methods of development, application, and analysis for a range of both direct and proxy measures of behaviour.

Keywords: Agreement, Chart Abstraction, General-Practice, Medical-Record, Medline, Patient, Performance, Policy, Quality, Research, Standardized Patients, Systematic Review, Tape, Vignettes

? Squires, J.E., Hutchinson, A.M., Bostrom, A.M., O’Rourke, H.M., Cobban, S.J. and Estabrooks, C.A. (2011), To what extent do nurses use research in clinical practice? A systematic review. *Implementation Science*, **6**, Article Number 21.

Full Text: [2011\Imp Sci6, 21.pdf](2011/Imp%20Sci6,%2021.pdf)

Abstract: Background: In the past forty years, many gains have been made in our understanding of the concept of research utilization. While numerous studies exist on professional nurses’ use of research in practice, no attempt has been made to systematically evaluate and synthesize this body of literature with respect to the extent to which nurses use research in their clinical practice. The objective of this study was to systematically identify and analyze the available evidence related to the extent to which nurses use research findings in practice. Methods: This study was a systematic review of published and grey literature. The search strategy included 13 online bibliographic databases: Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, MEDLINE, CINAHL, EMBASE, HAPI, Web of Science, SCOPUS, OCLC Papers First, OCLC WorldCat, ABI Inform, Sociological Abstracts, and Dissertation Abstracts. The inclusion criteria consisted of primary research reports that assess professional nurses’ use of research in practice, written in the English or Scandinavian languages. Extent of research use was determined by assigning research use scores reported in each article to one of four quartiles: low, moderate-low, moderate-high, or high. Results: Following removal of duplicate citations, a total of 12,418 titles were identified through database searches, of which 133 articles were retrieved. of the articles retrieved, 55 satisfied the inclusion criteria. The 55 final reports included cross-sectional/survey (n = 51) and quasi-experimental (n = 4) designs. A sensitivity analysis, comparing findings from all reports with those rated moderate (moderate-weak and moderate-strong) and strong quality, did not show significant differences. In a majority of the articles identified (n = 38, 69%), nurses reported moderate-high research use. Conclusions: According to this review, nurses’ reported use of research is moderate-high and has remained relatively consistent over time until the early 2000’s. This finding, however, may paint an overly optimistic picture of the extent to which nurses use research in their practice given the methodological problems inherent in the majority of studies. There is a clear need for the development of standard measures of research use and robust well-designed studies examining nurses’ use of research and its impact on patient outcomes. The relatively unchanged self-reports of moderate-high research use by nurses is troubling given that over 40 years have elapsed since the first studies in this review were conducted and the increasing emphasis in the past 15 years on evidence-based practice. More troubling is the absence of studies in which attempts are made to assess the effects of varying levels of research use on patient outcomes.

Keywords: Analysis, Attitudes, Bibliographic, Bibliographic Databases, Citations, Cochrane, Databases, Development, Embase, Evidence-Based Practice, Guidelines, Health-Care Settings, Impact, Implementation, Individual Determinants, Interventions, Literature, Management, Medline, Methods, Northern-Ireland, Nurses, Nursing Practice, Outcomes, Patient Outcomes, Practice, Primary, Professional, Research, Review, Science, Scopus, Strategy, Systematic, Systematic Review, Utilization, Web of Science

# Title: Indexer

Full Journal Title: Indexer

ISO Abbreviated Title: Indexer

JCR Abbreviated Title: Indexer

ISSN: 0019-4131 (print), 1756-0632 (online)

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hua, W.N. (2001), The development of the Chinese Social Sciences Citation Index. *Indexer*, **22** (3), 128-129.

Abstract: An account is given of the development and use of the first Chinese social sciences citation index. It has helped to fill a gap in the field of Chinese social science research, becoming a useful database for information retrieval and an important tool for evaluating research work and social science journals.

Keywords: Chinese, Citation, Database, Development, Field, First, Index, Information, Information Retrieval, Journals, Research, Research Work, Science, Science Journals, Science Research, Sciences, Social, Social Sciences, Work

# Title: Indian Chemical Engineer

(Indian Chem. Engr.)

Full Journal Title: [Indian Chemical Engineer](http://www.ice.org.in/journal.html); [Indian Chemical Engineer](http://www.informaworld.com/smpp/title~content=t908483045~db=jour)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

McConvey, I.F. and McKay, G. (1981), Dimensionless mass transfer correlations for colour removal from effluent using wood meal as adsorbent. *Indian Chemical Engineer*, **23**, 1-5.

McKay, G. (1984), Adsorption of dyestuffs from aqueous solutions using activated carbon. *Indian Chemical Engineer*, **26**, 23-31.

McKay, G. and Al-Duri, B. (1988), Energy: Management and conservation. Part I: Energy Management. Part II: Energy conservation. Part III: Waste heat recovery. *Indian Chemical Engineer*, **30**, 3-14.

? Nassar, M.M. and Magdy, Y.H. (1999), Mass transfer during adsorption of basic dyes on clay in fixed bed. *Indian Chemical Engineer*, **40** (??), 27-??.

? Abraham, B.T., Krishnan, K.A. and Anirudhan, T.S. (2002), Characterization of the adsorption of mercury(II) from aqueous solution by humus-boehmite complex. *Indian Chemical Engineer*, **44** (3), ??.

Abstract: The mercury(II) adsorption capacity of humic acid treated boehmite (AlOOH) was studied in the batch mode. Experiments were carried out as a function of adsorbent dose, pH, agitation speed, temperature and initial concentration of metal ions. Maximum removal of Hg(II) (92.0 %) was found to occur in the pH range of 6.0-9.0. Kinetic parameters such as rate constants of pseudo-first-order and pseudo-second-order and diffusion coefficients as a function of agitation speed and temperature have been computed for predicting the nature of adsorption. Adsorption could be best described by pseudo-second-order kinetic model. The diffusion of Hg(II) through pores in the absorbent was shown to be the rate limiting step and is endothermic. The applicability of a modified Langmuir isotherm equation for two population sites for Hg(II) removal has been tested. Sheindrof-Rebhurn-Sheintuch model was used to study the competitive effect on the uptake of Hg(II) in presence of Pb(II) and Cd(II). More than 95.0 % recovery has been achieved by controlling the pH of the solution at 2.0.

? Kumar, K.V. and Sivanesan, S. (2004), Removal of basic dye from its aqueous solution by adsorption process using rice husk adsorbent. *Indian Chemical Engineer*, **46** (1), 60-62.

? Kumar, K.V. and Sivanesan, S. (2004), Mass transfer during the sorption of basic dye onto cow dung ash. *Indian Chemical Engineer*, **46** (4), 251.

? Oubagaranadin, J.U.K., Murthy, Z.V.P. and Rao, P.S. (2007), Applicability of three-parameter isotherm models for the adsorption of mercury on fuller’s earth and activated carbon. *Indian Chemical Engineer*, **49** (3), 196-204.

Full Text: [2007\Ind Che Eng49, 196.pdf](2007/Ind%20Che%20Eng49,%20196.pdf)

Abstract: In this work, various three-parameter adsorption isotherm models, viz., Redlich-Peterson, Sips, Radke-Prausnitz, Fritz-Schlüender and Extended Langmuir models are tested for their applicability to the adsorption of mercury (Hg) on Fuller’s earth (FE) and activated carbon (AC), apart from the extensively used two-parameter Freundlich, Langmuir and Brunauer-Emmett-Teller (BET) models. Batch adsorption studies were conducted at room temperature (30°C) and pH of 6.7±0.2. Non-linear curve fitting procedure was adopted for fitting the equilibrium data in the isotherm models and for the determination of isotherm parameters. Apart from the correlation coefficient, the residual root mean square error (RMSE) and chi-square (χ2) test are used to measure the goodness-of-fit. Among the two-parameter models, the Freundlich model produces the best fit. Though all the three-parameter models provide a nearly good fit, the best fit is produced by the Sips model for the adsorption of mercury on both AC and FE.

Keywords: Adsorption, Error Analysis, Mercury, Isotherms

# Title: Indian Journal of Agricultural Sciences

Full Journal Title: Indian Journal of Agricultural Sciences

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Murthy, S.V.K. and Kotur, S.C. (2000), Phosphorous absorption kinetics in citrus (Citrus spp), grape (Vitis vinifera), mango (Mangifera indica) and banana (Musa paradisiaca). *Indian Journal of Agricultural Sciences*, **70** (3), 186-188.

# Title: Indian Journal of Agronomy

Full Journal Title: Indian Journal of Agronomy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0537-197X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Maheswarapa, H.P., Nanjappa, H.V., Hegde, M.R. and Biddappa, C.C. (2000), Nutrient content and uptake by arrowroot (Maranta arundinacea) as influenced by agronomic practices when grown as intercrop in coconut (Cocos nucifera) garden. *Indian Journal of Agronomy*, **45** (1), 86-91.

Abstract: A field experiment conducted during rainy season of 1995 to 1998 at CPCRI, Kasaragod revealed that sizes of planting material and plant-population levels did not influence the nutrient content of arrowroot (Maranta arundianacea L.). But organic manures like farmyard manure, vermicompost and combination of NM + NPK, NPK alone treatments had higher average N, P and K contents compared with composted coir-pith treatment. Nutrient uptake did not differ significantly due to sizes of planting material, whereas with 166,00 population the uptake was significantly higher. Under farmyard manure, vermicompost and combination of NM + NPK treatments, the N, P and K removal was higher. The fresh- rhizome yield did not differ significantly due to size of planting material and population level. FYM + NPK combination recorded significantly higher fresh-rhizome yield.

Keywords: Arrowroot (Maranta Arundinacea L.), Coconut (Cocos Nucifera L.), Coir Pith, Intercrop, Nutrient Content and Uptake, Organic Manures

# Title: Indian Journal of Animal Sciences

Full Journal Title: Indian Journal of Animal Sciences

ISO Abbreviated Title: Indian J. Anim. Sci.

JCR Abbreviated Title: Indian J Anim Sci

ISSN: 0367-8318

Issues/Year: 12

Journal Country/Territory: India

Language: English

Publisher: Indian Counc Agricultural Res

Publisher Address: Icar Bhawan Pusa, New Delhi 110 012, India

Subject Categories:

Agriculture, Dairy & Animal Science: Impact Factor

? Alam, M., Banerjee, N.C. and Yadava, K.P. (1993), Disposition kinetics of ampicillin in white leghorn birds. *Indian Journal of Animal Sciences*, **63** (11), 1156-1159.

Abstract: The pharmacokinetics and tissue disposition of ampicillin after single oral dose (50 mg/kg bw) was studied in 2 groups of White Leghorn (WLH) birds. The drug attained its peak plasma concentration (1.98±0.07 µg/ml) 4-6 hr post-drug administration. The Cp(ther) ranged from 0.12±0.004 to 1.98±0.07 µg/ml between 30 min to 24 hr. The values of pharmacokinetic parameters for t1/2 t1/2 B, Vd(area) and Cl(B) were 1.51±0.08 hr, 4.67±0.12 hr, 19.05±1.48 liters/kg and 46.80±2.61 ml/kg/min respectively. The bioavailability (F) was also high. The mean value of K12, K21, Kel, K12/K21 was 0.08±0.01 hr-1, 0.29±0.01 hr-1, 0.23±0.006 hr-1 and 0.29±0.03 respectively. The level of drug in bile was 26.75±3.16 and 41.57±2.67 µg/ml at 4 and 24 hr post-drug administration respectively. Ampicillin residual level was determined in different organs and skeletal muscles at 4 and 24 hr post-drug administration. No drug residue was traced in heart and brain at 4 hr. The withdrawal period of consumption of eggs and edible meat collected from ampicillin-treated birds has been advised. Dosage regimen based on the kinetics of drug has been suggested for optimal clinical efficacy.

? Alam, M., Banerjee, N.C. and Yadava, K.P. (1997), Isposition kinetics of ampicillin in white leghorn hens. *Indian Journal of Animal Sciences*, **64** (10), 1022-1024.

Abstract: The pharmacokinetics and tissue disposition of ampicillin after single i.v. dose (50 mg/kg bw) was studied in 2 groups of White Leghorn (WLH) hens. The plasma concentration ranged from 0.14±0.008 to 18.95±1.63 µg/ml for 12 hr. The mean values of pharmacokinetic parameters for t1/2 alpha, t1/2 beta Vd(area), CL(B) and T/P ratio were 0.44±0.02 hr, 2.66±0.11 hr, 7.17±0.80 litre/kg, 30.50±2.38 ml/kg/min and 2.67±0.19 respectively. The mean value of K12, K21, K10, and K12/K21 was 0.43±0.04 hr-1, 0.43±0.03 hr-1, 0.95±0.03 hr-1 and 1.01±0.05 hr respectively.

The level of drug in bile was 35.99±1.81 µg/ml and 37.17±2.34 µg/ml at 4 and 24 hr post-drug administration respectively. Ampicillin residual level was determined in different organs and skeletal muscles of the birds at 4 and 24 hr post-administration. Dosage regimen based on the kinetics of drug has been suggested for optimal clinical efficacy.

? Alam, M., Banerjee, N.C. and Yadava, K.P. (1997), Disposition kinetics of ampicillin in Bubalus bubalis calves. *Indian Journal of Animal Sciences*, **67** (12), 1048-1050.

Abstract: The pharmacokinetics of ampicillin after single i/v dose (10 mg/kg bw) was studied in a group of buffalo calves. The plasma drug concentration declined from 19.83±0.35 µg/ml to 0.22±0.01 up to 12 hr. The mean values of kinetic parameters for t1/2 alpha., vd(area), Cl-B and T/P ratio were 0.24±0.02 hr, 2.90±0.11 hr, 1.56±0.08 L/kg. 6.22±0.21 ml/kg/min. and 4.87±0.27 respectively. The mean values of K-12, K-21, K-2 and K-12/K-21 were 1.17±0.13 hr-1.0.47±0.02 hr-1.1.40±0.06 hr-1 and 2.42±0.18 respectively. The per cent protein binding (in vitro) of ampicillin in the plasma of buffalo calves ranged from 19.25 to 28.09. Dosage regimen based on the kinetics of drug has been suggested for optimal clinical efficacy.

Keywords: Ampicillin, Kinetics of Ampicillin, Cows

? Swarup, D. and Dwivedi, S.K. (1998), Research on effects of pollution in livestock. *Indian Journal of Animal Sciences*, **68** (8), 814-824.

Abstract: Livestock sharing man’s environment are exposed to an array of toxic pollutants which may be hazardous to their health and production. The health effects of pollution in livestock vary from subtle or chronic intoxication to overt acute toxicities depending on source and kind of pollutant, extent and route of exposure extent and degree of other interacting agents, and species, age, physiology and nutrition of the exposed livestock population. Residue of pollutants in livestock products adversely effect their quality and cause potential threat to public health due to contamination of food chain. In India, problem of pollution is related to poorly planned developmental projects and overuse of natural resources by ever-increasing human population. Review of the work done during the 5 decades of post-independence indicated emerging trend of human and livestock health problems due to pollution in the country. Acute and chronic lead toxicosis, fluorosis and pesticide poisoning have been recognised as major health hazards of pollution in livestock with the increasing frequencies in recent past indicating growing threat of pollution to the livestock health. Scientific data also revealed residual effects of pollutants such as toxic heavy metals and pesticides in animal food products. However, as compared to medical data, fewer studies have been conducted to evaluate ill effects of pollution in livestock in the country. There is a need for intensive studies and also to make recommendations as to how best to limit ill effects of pollution in livestock.

? Alam, M., Banerjee, N.C. and Yadava, K.P. (2000), Disposition kinetics of ampicillin in buffalo calves. *Indian Journal of Animal Sciences*, **70** (2), 133-135.

Abstract: The pharmacokinetics of ampicillin after single oral dose (20 mg/kg b w) was studied in group of buffalo calves. The highest mean plasma concentration of drug (0.44±0.08 µg/ml) was recorded at 4 hr which declined gradually to 0.18±0.01 µg/ml at 24 hr of drug administration. The mean Cp ther ranged from 0.18±0.01 to 0.44±0.08 mg/ml between 30 min and 24 hr. The mean values of kinetic parameters for t1/2 ka, t1/2 beta, Vd area, AUG, CLB, T/P ratio were 1.14±0.12 hr, 15.71±1.19 hr, 39.11±1.64 L/kg, 11.53±0.61 mg/ml hr, 29.31±1.66 ml/kg/min and 0.70±0.04 respectively. The mean values of K-12, K-21, Kel, K-12 and K-21 were 0.23±0.03/hr, 0.37±0.03/hr, 0.07±0.007/hr and 0.61±0.04 respectively. Dosage regimen based on the drug kinetics has been suggested for optimal clinical efficacy.

Keywords: Ampicillin, Buffalo Calves, Kinetics, Microbiological Assay

# Title: Indian Journal of Biochemistry & Biophysics

Full Journal Title: Indian Journal of Biochemistry & Biophysics

ISO Abbreviated Title: Indian J. Biochem. Biophys.

JCR Abbreviated Title: Indian J Biochem Bio

ISSN: 0301-1208

Issues/Year: 6

Journal Country/Territory: India

Language: English

Publisher: Natl Inst Science Communication

Publisher Address: Dr K S Krishnan Marg, New Delhi 110 012, India

Subject Categories:

Biochemistry & Molecular Biology: Impact Factor 0.256,

Biophysics: Impact Factor 0.256,

? Mitra, S.P. and Chattoraj, D.K. (1978), Some thermodynamic aspects of expanded and condensed films of bsa adsorbed at alumina-water interface. *Indian Journal of Biochemistry & Biophysics*, **15** (3), 147-152.

# Title: Indian Journal of Biotechnology

Full Journal Title: Indian Journal of Biotechnology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Das, N., Vimala, R. and Karthika, P. (1994), Biosorption of heavy metals - An overview. *Indian Journal of Biotechnology*, **7** (2), 159-169.

Abstract: During the last two decades, extensive attention has been paid on the management of environmental pollution causal by hazardous materials such as heavy metals. Decontamination of heavy metals in the soil and water around industrial plants has been a challenge for a long time. A number of methods have been developed for the removal of heavy metals from liquid wastes such as precipitation, evaporation, electroplating, ion exchange, membrane processes, etc. However, these methods have several disadvantages such as unpredictable metal ion removal, high reagent requirement, generation of toxic sludge, etc. Biosorption is a process, which represents a biotechnological innovation as well as a cost effective excellent tool for removing heavy metals from aqueous solutions. This article provides a selective overview of past achievements and present scenario of biosorption studies carried out on some promising natural biosorbents (algae, fungi, bacteria, yeast) and some waste materials which could serve as an economical means of treating effluents charged with toxic metallic ions.

Keywords: Algae, Fungi, Bacteria, Yeast, Biosorption, Heavy Metal, Biosorbent, Wastewater, Biomass, Bakers-Yeast Biomass, Packed-Bed Column, Saccharomyces-Cerevisiae, Aqueous-Solutions, Copper(II) Ions, Marine-Algae, Waste-Water, Pseudomonas-Aeruginosa, Zoogloea-Ramigera, Pb2+ Accumulation

# Title: Indian Journal of Chemical Technology

Full Journal Title: [Indian Journal of Chemical Technology](http://nopr.niscair.res.in/handle/123456789/55)

ISO Abbreviated Title: Indian J. Chem. Technol.

JCR Abbreviated Title: Indian J Chem Technol

ISSN: 0971-457X

Issues/Year: 6

Journal Country/Territory: India

Language: English

Publisher: Natl Inst Science Communication

Publisher Address: DR K S Krishnan Marg, New Delhi 110 012, India

Subject Categories:

Chemistry, Applied: Impact Factor 0.296, 41/55 (2000)

Engineering, Chemical: Impact Factor 0.317, 72/110 (1999)

? Rao, K.C.L.N., Krishnaiah, K. and Ashutosh. (1994), Color removal from a dyestuff industry effluent using activated carbon. *Indian Journal of Chemical Technology*, **1** (1), 13-19.

Abstract: The objective of the present study is to identify the best commercially available activated carbon adsorbents to remove the colour of dye of the effluent (waste) water from dye using and dye manufacturing industry. The effect of different types of dyes, particle diameter of the absorbent, intial dye concentration, carbon loading, pH of the effluent water and temperature on best available adsorbent is evaluated. Adsorption isotherms are developed for different dyes and represented by Freundlich isotherm which can be used for the design of waste water treatment plants.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Isotherms, Carbon, Dye, Dyes, Freundlich, Freundlich Isotherm, Industry, Isotherm, Isotherms, pH, Plants, Removal, Temperature, Treatment, Water, Water Treatment

Notes: highly cited

? Singh, D. and Rawat, N.S. (1994), Bituminous coal for the treatment of Cd(II) rich water. *Indian Journal of Chemical Technology*, **1** (5), 266-270.

Abstract: The sorption of Cd(II) on bituminous coal has been found to be dependent on contact time, concentration, temperature and pH. The process of removal follows first order kinetics. The temperature dependence indicates the endothermic nature of process. Alkaline aqueous medium favours the removal of Cd(II) by bituminous coal. The increase in sorption of Cd(II) with pH has been explained on the basis of interaction with organic as well as inorganic matters present in coal. Intraparticle diffusion has been found to be a rate limiting step.

Keywords: Interaction, Kinetics, Sorption

Namasivayam, C. and Ranganathan, K. (1994), Removal of Fe(II) by waste Fe(III)/Cr(III) hydroxide from aqueous-solution and electroplating industry waste-water. *Indian Journal of Chemical Technology*, **1**, 351-355.

Abstract: The effects of Fe(II) concentration, contact time, adsorbent dosage, particle size, temperature and pH on adsorption of Fe(II) by waste Fe(III)/Cr(III) hydroxide have been studied. The per cent Fe(II) adsorbed increased with decrease in initial concentration of Fe(II), increase in adsorbent dosage and temperature. The equilibrium data fit well with the Langmuir and Freundlich isotherms. The adsorption rate constants and thermodynamical parameters are presented. Removal of Fe(II) by the adsorbent is also testified using electroplating industry wastewater.

? Singh, D. and Rawat, N.S. (1995), Sorption of Pb(II) by bituminous coal. *Indian Journal of Chemical Technology*, **2** (1), 49-50.

Abstract: Removal of Pb(II) on bituminous coal at different pH values has been investigated. Maximum sorption (92.52%) observed at pH 8 and this pH value has been related with pK value. Langmuir model has been used to calculate sorption capacity of bituminous coal.

Keywords: Capacity, Langmuir, Langmuir Model, Model, Pb(Ii), Ph, Removal, Sorption

? Mukherjee, S. and Mondal, G.C. (1995), Removal of lead by water hyacinth. *Indian Journal of Chemical Technology*, **2** (2), 59-62.

Abstract: Lead removal from synthetic lead spiked water by water hyacinth (Eichhornia crassipes Mart) solms has been investigated to explore the performance of the aquatic plants as lead accumulator. The batch kinetics sorption studies have been described by a linearised Freundlich isotherm which indicate that 85-92% of lead removal is possible for a retention period of 10 days at pH 7.0-7.5 between initial lead concentration range 0.5-10 mg/L under specified environmental condition. It is observed that the sorption of lead is not much dependent on pH although the cessation of growth and wilting up of the plant occurred below pH 4.5.

? Tewari, B.B. (1995), Determination of specific surface-area of copper, zinc, stannous and molybdenum ferrocyanides by dye adsorption. *Indian Journal of Chemical Technology*, **2** (2), 113-114.

Abstract: The adsorption of methylene blue, a cationic organic dyestuff on copper, zinc, stannous and molybdenum ferrocyanides has been studied. High adsorption capacity has been observed for molybdenum ferrocyanide while it is minimum with stannous ferrocyanide. Methylene blue adsorption on these ferrocyanides follows Langmuir adsorption isotherm. Surface area of ferrocyanides has been calculated with the help of dye adsorption and the results indicate that molybdenum ferrocyanide is highly porous with specific surface area of 26.59 m2 g-1.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherm, Capacity, Copper, Determination, Dye, Dyestuff, Isotherm, Langmuir, Langmuir Adsorption Isotherm, Methylene Blue, Surface Area, Zinc

Sivanandan Achari, V. and Anirudhan, T.S. (1995), Phenol removal from aqueous systems by sorption on jackwood sawdust. *Indian Journal of Chemical Technology*, **2** (3), 137-141.

Abstract: The adsorption technique using sawdust of jackwood timber has been applied for the removal of phenol from aqueous solutions. The extent of removal was dependant on concentration, pH and temperature of the solution. With an initial concentration of 25 mg/L at 30°C and pH 7, the removal was found to be 62.5% by using sawdust as adsorbent. The time to reach equilibrium was found to be 6 h. The higher uptake of 79.2% of the initial concentration of 25 mg/L occurs at pH 5.5 at 30°C. The applicability of Freundlich isotherm to the sawdust-phenol system was tested at 10, 20 and 30°C at pH 5.5, which can be used for the design of wastewater treatment plants. The spent adsorbent can be regenerated and reused by acid treatment.

? Barakat, Y., Elmergawy, S.A., Elzein, S.M. and Mead, A.I. (1995), Adsorption of alkylbenzene sulfonates onto mineral surfaces. *Indian Journal of Chemical Technology*, **2** (3), 162-166.

Abstract: Monoisomeric linear alkylbenzene sulphonates (LAB) are prepared and evaluated on a laboratory scale for enhanced oil recovery (EOR) applications. The effect of surfactant chain length has been studied using four compounds, 4 phi C-9, 4 phi C-10, 4 phi C-11 and 4 phi C-12 ABS, and it has been found that the plateau level increases linearly with increasing sulphonate chain length. Effect of the point of attachment of the benzene ring on the linear chain on adsorption has also been studied in two sets of experiments. In the first set, three phenylundecane isomers have been used and in the second set four phenyldodecane compounds isomers have been employed. Plateau adsorption levels for each of these compounds are determined through adsorption isotherms at the same experimental conditions. Linear increase in plateau adsorption level has been observed when the position of phenyl group is changed to the more central carbon atoms.

Keywords: Adsorption, Adsorption Isotherms, Benzene, Carbon, Compounds, Isotherms, Linear, Linear Alkylbenzene, Mineral, Oil Recovery

? Reddy, K.A., Anand, P.S. and Dasare, B.D. (1995), Sorption of phenolic-compounds on porous strongly basic anion-exchangers based on styrene matrix. *Indian Journal of Chemical Technology*, **2** (5), 276-280.

Abstract: The sorption of phenolic compounds from aqueous solution has been studied by using porous strongly basic anion exchangers based on styrene matrix. The sorption performance is governed by sorbate, sorbent and solution characteristics. The uptake is fast and reversible. However, the pH of aqueous solution of these compounds and the presence of electrolyte effects their sorption performance. The sorption of phenolic compounds by these porous strongly basic anion exchangers has been found to be reversible under dynamic conditions.

Keywords: Compounds, pH, Porous, Sorbent, Sorption

? Gaid, A., Kaoua, F., Mederres, N. and Khodja, M. (1995), Surface mass-transfer processes using activated date pits as adsorbent. *Indian Journal of Chemical Technology*, **2** (5), 291-294.

Abstract: The ability of:activated date pits to adsorb various pollutants from aqueous solutions has been studied. The pollutants investigated are phenol, methylene blue, aniline, procion red and humic substances. The adsorption is presented in the form of the equilibrium isotherms. The Freundlich, Langmuir and Redlich-Peterson isotherm equations are fitted to the results and the isotherm constants obtained.

Keywords: Adsorbent, Adsorption, Aqueous Solutions, Equilibrium, Freundlich, Humic Substances, Isotherm, Isotherms, Langmuir, Methylene Blue, Phenol

? Sekaran, G., Shanmugasundaram, K.A., Mariappan, M. and Raghavan, K.V. (1995), Utilization of a solid-waste generated in leather industry for removal of dye in aqueous-solution. *Indian Journal of Chemical Technology*, **2** (6), 311-316.

Abstract: Buffing dust generated from leather industry can be considered as a source for obtaining activated carbon for the removal of dyes from wastewater. The adsorption capacity of buffing dust based activated carbon was 6.24 mg/g at a pH 3.5, temperature 30 degrees C for dye concentration of 125 mg/L and carbonisation temperature 900 degrees C. Effect of initial dye concentration, pH, temperature and particle size on dye adsorption and pore diffusion were also determined. The enthalpy of adsorption was determined to be - 15.69 kJ/mol.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Capacity, Carbon, Diffusion, Dye, Dyes, Industry, pH, Pore, Removal, Temperature, Wastewater

? Srivastava, S.K., Gupta, V.K., Johri, N. and Mohan, D. (1995), Removal of 2,4,6-trinitrophenol using bagasse fly-ash - A sugar-industry waste material. *Indian Journal of Chemical Technology*, **2** (6), 333-336.

Abstract: Bagasse fly ash, a waste generated in sugar industries has been converted into low cost adsorbent material. Product so obtained has been characterised and utilized for the removal of 2,4,6-trinitrophenol. Investigations include the effect of pH, sorbent dosage, phenol concentration and the presence of surfactants on the low cost adsorbent. Bagasse fly ash exhibits good sorption capacity for TNP and the adsorption data follows both Langmuir and Freundlich models. Thermodynamic parameters indicate the feasibility of the process. The sorption efficiency of the material decreases in the presence of some cleaning agents.

Keywords: Adsorption, Capacity, Cost, Fly Ash, Freundlich, Langmuir, Low Cost Adsorbent, Models, pH, Phenol, Removal, Sorbent, Sorption, Thermodynamic, Thermodynamic Parameters

Raji, C. and Anirudhan, T.S. (1996), Removal of Hg(II) from aqueous solution by sorption on polymerised saw dust. *Indian Journal of Chemical Technology*, **3** (1), 49-54.

Abstract: The ability of polymerised Saw dust to adsorb Hg(II) from water has, been carried out. The per cent Hg(II) adsorbed increased with decrease in initial concentration of Hg(II), increase in adsorbent dosage and temperature. Maximum accumulation was noted within 4 h and maximum removal (94%) was recorded below 10 mg/L of Hg(II), The process follows a first order rate kinetics with diffusion controlled nature and the data fits the Langmuir adsorption isotherm. Sorbent is effective for the quantitative removal of Hg(II) over the pH range 3.5-8.5. Adsorption rate constants, and thermodynamic parameters were also presented to predict the nature of adsorption. Extraction studies confirmed that most Hg(II) could be released by exposure to 1 M HCl or chelating agent (0.1 M EDTA).

Shubha, K.P. and Anirudhan, T.S. (1996), Adsorption of Pb(II) on polyacrylamide grafted tin(IV) oxide gel from aqueous solution. *Indian Journal of Chemical Technology*, **3** (1), 55-57.

Abstract: Polyacrylamide grafted hydrous tin(IV) oxide gel has been studied as a sorbent for removal of Pb(II) from aqueous solutions. Effects of contact time, initial concentration, pH and temperature have been studied. The adsorption follows first order kinetics. The uptake is maximum around pH 5.5 and it has been explained on the basis of the surface complexation involving H+ exchange. The adsorption isotherms of Pb(II) were found to follow the Langmuir adsorption model. The adsorption rate constants and thermodynamical parameters were also presented to predict the nature of adsorption. The spent adsorbent can be regenerated and reused by acid treatment.

? Aggarwal, P., Kapoor, J.C., Kapoor, S.K., Bhalla, A.K. and Bansal, R.C. (1996), Adsorption of nitrobenzene on activated carbon from dilute aqueous solutions. *Indian Journal of Chemical Technology*, **3** (4), 187-190.

Abstract: The adsorption isotherms of nitrobenzene from aqueous solutions in the concentration range 20-200 mg/L have been studied on five different commercially available activated carbons with surface areas varying between 650-1300 m(2)/g. The adsorption depends upon surface area but is not linearly related to it. The adsorption isotherms on oxidised and degassed samples of activated carbons indicate that the adsorption increases on degassing but decreases on oxidation.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Aqueous Solutions, Behavior, Carbon, Isotherms, Oxidation, Oxygen, Polymer Carbons, Surface Characteristics

? Bajpai, A.K. and Bajpai, S.K. (1996), Kinetics of flocculation of iron oxide particles by polyacrylamide. *Indian Journal of Chemical Technology*, **3** (4), 219-223.

Abstract: The kinetics of the flocculation of iron oxide sol by polyacrylamide has been studied by turbidity measurements. Various kinetics parameters such as per cent flocculation, flocculation rate and rate constants for the flocculation and deflocculation have been evaluated. Both the qualitative and quantitative effects of various parameters such as polymer dosage, pH of the suspension, salt concentration and molecular weight of the polymeric flocculant on the kinetics of flocculation have also been investigated.

Keywords: Hydrophobic Colloids, Iron, Kinetics, pH, Polymer Adsorption, Silver-Iodide, Stability, Weight

? Singh, G. and Rohira, B. (1996), Adsorption kinetics of dihydroxypyrimidine on mild steel in 1N phosphoric acid. *Indian Journal of Chemical Technology*, **3** (5), 263-268.

Abstract: The inhibitive effect of dihydroxypyrimidine on the corrosion of mild steel in 1N phosphoric acid at different temperatures has been investigated. Corrosion potential, corrosion currents, cathodic and anodic tafel slopes, heat of adsorption and effective activation energies have been calculated in the presence and absence of this inhibitor. Inhibition efficiency has been calculated for various concentrations at different temperatures to study the effectiveness of the additive. The nature of adsorption of dihydroxypyrimidine on the metal surface has also been examined. The surface analysis is in agreement with the electrochemical results.

Keywords: Adsorption, Adsorption Kinetics, Analysis, Corrosion, Inhibition, Kinetics, Mild Steel, Steel

Raji, C. and Anirudhan, T.S. (1996), Preparation and metal-adsorption properties of the polyacrylamide-grafted sawdust having carboxylate functional group. *Indian Journal of Chemical Technology*, **3** (6), 345-350.

Abstract: A new adsorbent media containing carboxylate group has been synthesised by the surface modification of a polyacrylamide grafted sawdust. The product exhibits a very high adsorption potential for Pb(II), Hg(II) and Cd(II). The adsorption of metal ions on sorbent have been found to be dependent on initial concentration, pH, temperature and shaking speed. The optimum pH range for the removal of Pb(II) is 5-9 whereas the maximum uptake for Hg(II) and Cd(II) is in the pH range 5-10. Kinetics of adsorption indicates the process to be diffusion controlled. The diffusion coefficients, energies of activation and entropies of activation were calculated and were used to determine the theoretical behaviour of sorption process. Acid regeneration has been tried for several cycles with a view to recover the adsorbed metal ions and also to restore the sorbent to its original state.

Singh, D. and Rawat, N.S. (1997), Adsorption of heavy metals on treated and untreated low grade bituminous coal. *Indian Journal of Chemical Technology*, **4** (1), 39-41.

Abstract: Bituminous coal has been subjected to hydrothermal treatment to incorporate additional functional groups and to effect changes in the colloidal-chemical nature of the coal surface to enhance the adsorption of Cu(II), Ni(II), Zn(II) and Cr(VI) from aqueous system. The effectiveness of two such chemical pretreatments like hydrogen peroxide and manganese oxide impregnation has been investigated through adsorption of these metals, separately at the same condition of pH, temperature, adsorbent size and concentration. The rate of adsorption and capacity of bituminous coal is found to be enhanced significantly. Lagergren equation and Langmuir model have been used to determine rate constants of adsorption and capacity of treated and untreated bituminous coal.

Keywords: Impregnated Fly-Ash

? Aggarwal, P., Misra, K., Kapoor, S.K., Bhalla, A.K. and Bansal, R.C. (1997), Adsorption of styphnic acid on activated carbon. *Indian Journal of Chemical Technology*, **4** (1), 42-44.

Abstract: The adsorption isotherms of styphnic acid from aqueous solutions in the concentration range of 20-700 mg/L have been studied on five different commercially available coconut based activated carbons having surface area between 650-1300 m(2)/g. Adsorption of styphnic acid depends on the surface area of the activated carbon. However, the monolayer coverage per unit area increases up to a surface area of 1000 m(2)/g and exhibits a slight decrease thereafter. The effect of varying amounts of carbon-oxygen surface complexes created by oxidation and elimination by degassing treatments, on the adsorption of styphnic acid indicate that the increase in adsorption is linearly related to the amount of oxygen on the surface of activated carbons.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Aqueous Solutions, Capacity, Carbon, Isotherms, Oxidation

? Sekaran, G., Mariappan, M. and Raghavan, K.V. (1997), Protein removal from salt-laden wastewater by activated carbon. *Indian Journal of Chemical Technology*, **4** (2), 77-82.

Abstract: One of the wastewaters from tanning industry (soak liquor) contains 0.4 g/L of dissolved protein. During coagulation and flocculation 41% of protein was removed. A suggestion has been made to remove the residual protein by adsorption technique. The optimum conditions for adsorption of Bovine Serum Albumin (BSA) on rice bran based activated carbon (RBAC) were arrived. Maximum adsorption of BSA took place at pH 7. Ionic strength influenced the adsorption behaviour. Adsorption capacity of BSA on to charcoal surface decreased with increase in temperature. Enthalpy of adsorption in all cases indicate exothermic nature of the process. Applicability of adsorption technique to the removal of dissolved protein from soak water has been studied. The maximum removal of protein occurred at pH 7 and the, ratio of protein removed to weight of adsorbent was 3.22 x 10(-3).

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Aqueous-Solutions, Capacity, Carbon, Charcoal, Coagulation, Enthalpy, Fly-Ash, Ionic Strength, pH, Protein, Removal, Rice, Surfaces, Temperature, Wastewater, Water, Weight

? Bajpai, A.K. and Dengre, R. (1997), Adsorption of casein at the silica-solution interface. *Indian Journal of Chemical Technology*, **4** (2), 113-116.

Abstract: The effects of various factors such as the concentration of casein, pH of the protein solution, presence of low molecular weight electrolytes and detergents and temperature of the adsorption medium have been studied on the adsorption of casein onto silica.

Keywords: Adsorption, Kinetics, pH, Silica, Temperature, Weight

Raji, C. and Anirudhan, T.S. (1997), Kinetics of Pb(II) adsorption by polyacrylamide grafted sawdust. *Indian Journal of Chemical Technology*, **4** (3), 157-162.

Full Text: [I\Ind J Che Tec4, 157.pdf](I/Ind%20J%20Che%20Tec4,%20157.pdf)

Abstract: Lead(II) removal efficiency of polyacrylamide grafted sawdust has been investigated through laboratory experiments. Kinetic measurements have been made as a function of solution concentration of Pb(II) ions, pH and temperature. The slow step governing the rate of exchange is diffusion of ions through the exchanger particles. The equilibrium data fit well with the Langmuir isotherms. Thermodynamic parameters were also presented to predict the nature of adsorption. Adsorbent can be regenerated with acid and can then be reused.

Keywords: Adsorption, Charge, Interface, Isotherms, Removal, Sawdust, Silica, Water

? Farouqui, F.I., Sheikh, M.R.K., Hossain, M.I. and Saha, S.K. (1997), Selection of optimum dyeing conditions in dyeing jute fibre with reactive dyes and their colour fastness properties. *Indian Journal of Chemical Technology*, **4** (4), 185-190.

Abstract: Optimum dyeing conditions depending on dye concentration, electrolyte concentration, dyeing time and dyeing temperature have been selected when jute fibre is dyed with reactive dyes, such as, Remazol Brilliant Violet 5R, Reactive Brown 10, Reactive Red 120, Reactive Orange 14 and Reactive Blue 5. Considering the effects of sunlight in air, washing with soap solution and spotting with acids and alkalies on dyed jute fibres Reactive Red 120 arid Reactive Orange 14 exhibit better colour fastness than the others. This is may be due to the presence of more and stronger covalent bonds between the triazinyl group of reactive dyes and the jute cellulose.

Keywords: Aqueous-Solutions, Activated Carbon, Adsorption, Dyestuffs

Annadurai, G. and Krishnan, M.R.V. (1997), Adsorption of acid dye from aqueous solution by chitin: Equilibrium studies. *Indian Journal of Chemical Technology*, **4** (5), 217-222.

Full Text: [I\Ind J Che Tec4, 217.pdf](I/Ind%20J%20Che%20Tec4,%20217.pdf)

Abstract: Chitin has the ability to adsorb substantial quantities of dyestuff from aqueous solutions. The design procedures for batch kinetic study have been investigated for an acid dye, Lansaym brown grl. The effect of several factors governing the dye adsorption such as the adsorbent concentration, adsorbent size, temperature and pH of the dye solution have been investigated. Desorption of the dye at different temperatures and pH have also been investigated.

Mohammad, A., Ajmal, M., Yousuf, R. and Ahmed, A. (1997), Adsorption of Cu(II) from water on the seed and seed shell of Mangifera indica (Mango). *Indian Journal of Chemical Technology*, **4** (5), 223-227.

Abstract: Mangifera indica (Mango) seed and seed shell powders were studied for their possible application in the removal of Cu(II) from water. The adsorption of copper(II) on the powder of Mango seed and seed shell is maximum at pH 6 and follows the Freundlich type adsorption isotherm. The over all process of adsorption is spontaneous and exothermic in nature. The total adsorption on each adsorbent (mango seed and seed shell powder) increases with increase in temperature between 30-50°C and than decreases up to 60°C.

Raji, C. and Anirudhan, T.S. (1997), Chromium(VI) adsorption by sawdust carbon: Kinetics and equilibrium. *Indian Journal of Chemical Technology*, **4** (5), 228-236.

Abstract: The ability of sawdust carbon to remove chromium from aqueous solution by adsorption was investigated according to equilibrium and kinetics. The extent of removal of Cr(VI) is dependent on concentration, pH and temperature of the solution. With an initial concentration of 100 mg/L and at 60°C and pH 2.5, the removal was found to be 49.8 mg/g. The intra-particle diffusion of Cr(VI) through pores in the adsorbent was shown to be the main rate limiting step. The higher uptake at pH 2.5 was attributed to chemical reduction of Cr(VI) to Cr(III) coupled with physico-chemical adsorption of Cr(VI) species. The Langmuir and Freundlich adsorption isotherms were used to represent the experimental data. The Langmuir and Freundlich constants were calculated at different temperatures and the adsorption capacity for Cr(VI) increases with temperature. The method was applied on synthetic wastewaters. Treatment of the exhausted carbon with 0.1 M NaOH removed only 87.2% of the adsorbed chromium, suggesting that the binding to the carbon involved strong chemisorption forces.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Isotherms, Chromium, Color, Cr(VI), Effluent, Isotherms, Kinetics, Removal, Sawdust, Sawdust Carbon, Soils, Sorption

? Bhattacharyya, K.G. and Sarma, N. (1997), Colour removal from pulp and paper mill effluent using waste products. *Indian Journal of Chemical Technology*, **4** (5), 237-242.

Abstract: In this work, different streams of effluents of the Nagaon Paper mill, a unit of the HPC Limited, have been treated with in situ generated waste products to remove colour due to lignin and its derivatives. The waste products were hypo sludge (HS) from the hypo-generation unit, alum sludge (AS) from the alum unit and waste bamboo dust, which was converted to bamboo dust carbon (BDC). The HS in doses of 0.2 and 0.4 g/L could reduce colour, BOD and COD to the extent of 82 and 94%, 46 and 91%, 36 and 67%, respectively, from the pulp mill effluent stream. The AS with a dose of 15 g/L was effective in reducing colour, BOD and COD from the extraction backwater stream by 96, 88 and 65%, respectively. The HS-treatment was found to have better impact on the combined effluent quality compared to the AS treatment. The BDC was also equally effective in colour removal from the combined effluent stream at acidic pH and a dose of 3.1 g/L could remove as much as 99% colour. The sorption characteristics have been worked out.

Keywords: Desorption, Water

Anirudhan, T.S. and Sreedhar, M.K. (1998), Adsorption thermodynamics of Co(II) on polysulphide treated sawdust. *Indian Journal of Chemical Technology*, **5** (1), 41-47.

Abstract: Sawdust of rubber wood has been subjected to surface modification by treatment with sodium polysulphide. The product exhibits a good adsorption potential for Co(II). The percentage of Co(II) adsorption increases with increase in temperature and decrease in initial Co(II) concentration. Sorbent is effective for the quantitative removal of Co(II) over the pH range 4-10. The applicability of the Lagergren and Freundlich equations for metal removal has been tested at different temperatures and the adsorption has been found to be endothermic. Thermodynamic parameters have also been calculated to predict the nature of adsorption. The spent sorbent can be regenerated by acid and can be reused.

Keywords: Acid, Adsorption, Equations, Metal, Metal Removal, Modification, pH, Removal, Sawdust, Sorbent, Wood

? Vanjara, A.K. (1998), Colour removal from textile effluent using refuse derived fuel as an adsorbent. *Indian Journal of Chemical Technology*, **5** (1), 53-55.

Abstract: Adsorptive capacity of refuse derived fuel (RDF) has been tested for the decolourisation of waste water containing methylene blue. The effect of system variables such as concentration, temperature, pH, agitation speed and particle size have been studied to understand equilibrium and kinetics of adsorption process. The results show very good adsorptive capacity of RDF for methylene blue. The intraparticle diffusion is playing an important role in the adsorption process. The effect of temperature shows some chemical interactions between adsorbent/adsorbate system.

Keywords: Adsorption, Capacity, Decolourisation, Diffusion, Dyes, Equilibrium, Kinetics, Methylene Blue, pH, Removal, System, Temperature, Textile Effluent, Water

? Misra, K., Aggarwal, P., Kapoor, S.K., Bhalla, A.K. and Bansal, R.C. (1998), Adsorption isotherm studies of trinitrotoluene on granular activated carbon from aqueous solution. *Indian Journal of Chemical Technology*, **5** (2), 87-90.

Abstract: This paper presents the adsorption isotherm studies on coconut based activated carbon (AC) of different grades (650-1300 m(2)/g) to asses its efficiency for the removal of trinitrotoluene (TNT) from aqueous solutions. Freundlich and Langmuir adsorption isotherms are plotted and equilibrium constant and maximum adsorption capacity for each carbon is computed from the isotherm data. A linear relationship has been obtained between amount adsorbed and the surface area of carbons. The effect of varying amounts of carbon oxygen complexes on carbon surface modified by oxidation and degassing treatments, on the adsorption of TNT has also been studied. The results indicate that the increasing amount of chemisorbed oxygen on carbon has favourably influenced the adsorption behaviour of TNT.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Isotherms, Aqueous Solutions, Capacity, Carbon, Equilibrium, Freundlich, Isotherm, Isotherm Studies, Isotherms, Langmuir, Oxidation, Removal, TNT

? Khattri, S. and Singh, M.K. (1998), Colour removal from aqueous solutions by adsorption. *Indian Journal of Chemical Technology*, **5** (4), 230-234.

Abstract: Dyes are used in various sectors like textile, paper and dyeing industries which discharge hazardous coloured dye effluents. The ability of heterogeneous mixture of alumina and clay (1:2) to remove the colour of dyes has been investigated. It was found that low adsorbate concentration small particle size of adsorbent, temperature 25°C and pH 7.2 of the medium favour the removal of dye from aqueous solution. The dynamics of adsorbate transport from bulk to the solid phase has been studied at different temperatures. The applicability of Langmuir isotherm suggests the formation of monolayer coverage of dye molecules on the outer interface of the adsorbent. The thermodynamic studies of dye-alumina clay system indicates spontaneous and exothermic nature of the process.

Keywords: Fly-Ash, Effluent, Adsorbents, Acid, Dye

? Namasivayam, C. and Kadirvelu, K. (1998), Carbonised coirpith as an adsorbent for the removal of toxic ions, dyes and pesticides from wastewaters. *Indian Journal of Chemical Technology*, **5** (5), 334-336.

Abstract: Carbonized coirpith was effective in the removal of toxic metal ions such as Hg(II), Pb(II), Cr(VI) and orthophosphate and dyes such as Rhodamine-B, acid violet, procion orange and congo red and paraquat in aqueous phase systems. Quantitative removal of dye and toxic metal ions and around 75% removal of phosphate and paraquat were observed.

Keywords: Peanut Hull Carbon, Industry Waste-Water, Aqueous-Solution, Adsorption Rates, Mercury(II), Equilibrium

Namasivayam, C. and Ranganathan, K. (1998), Regeneration and recycling of waste Fe(III)/Cr(III) hydroxide for the continuous adsorption of Ni(II) and Cr(VI). *Indian Journal of Chemical Technology*, **5** (5), 337-339.

Abstract: The waste Fe(III)/Cr(III) hydroxide is recycled after alternating adsorption and desorption of Ni(II) and Cr(VI). Six regeneration cycles have been observed without any significant loss in metal removal efficiency of the adsorbent.

Keywords: Aqueous-Solution, Removal, Water, Cd(II)

Rengaraj, S., Arabindoo, B. and Murugesan, V. (1999), Preparation and characterisation of activated carbon from agricultural wastes. *Indian Journal of Chemical Technology*, **6** (1), 1-4.

Abstract: Solid waste disposal has become a major problem in India. Either it has to be disposed safely or used for the recovery of valuable materials. As agricultural wastes like myrobalan, rubber seed coat, cashewnut sheath, palm seed coat, palm tree flower and pongam seed coat comprise of cellulose and lignin, they may act as good adsorbents. Therefore these wastes have been exploited for the preparation of activated carbon employing various techniques. Their characterisation studies such as bulk density, moisture content, ash content, fixed carbon content, matter soluble in water, matter soluble in acid, pH, decolourising power, phenol number, ion exchange capacity, iron content and surface area have been carried out to assess the suitability of these carbons as adsorbents in the treatment of water and wastewater. The results obtained show them to be good adsorbents for both organics and inorganics. The present study reveals the recovery of valuable adsorbents from readily and cheaply available agricultural wastes.

Khattri, S.D. and Singh, M.K. (1999), Adsorption of basic dyes from aqueous solution by natural adsorbent. *Indian Journal of Chemical Technology*, **6** (2), 112-116.

Abstract: The capability of the Sagaun sawdust for removing basic dyes (crystal violet, Methylene Blue. Malachite Green and Rhodamine B) from aqueous solution’s has been investigated. The effect of system variables such as concentration. temperature, pH and particle size have been studied to understand equilibrium and kinetics of adsorption process. The maximum removal was found to be 89% at concentration 6.0 mgL-1, temperature 30°C and pH 7.5. The amount of the dye (crystal violet and Methylene Blue) adsorbed, decreases from 2.773 mgg-1 (86.68%) to 2.310 mgg-1 (72.19%) and 2.672 mgg-1 (83.52%) to 2.205 mgg-1 (68.93%) with the rise of temperature of dye solutions from 25 to 45°C indicating the process to be exothermic. The value of k (ad) of crystal violet at 25, 35 and 45°C were found to be 9.72×10-2, 9.57×10-2 and 9.25×10-2 min-1, respectively. The adsorption capacity for dye-adsorbent system has been determined. The dye adsorption follows the Langmuir isotherm. On the basis of isotherm studies, various thermodynamic parameters such as ΔG°, ΔH° and ΔS° have been calculated.

Keywords: Color Removal, Textile Effluents

Manju, G.N., Gigi, M.C. and Anirudhan, T.S. (1999), Hydrotalcite as adsorbent for the removal of chromium(VI) from aqueous media: Equilibrium studies. *Indian Journal of Chemical Technology*, **6** (3), 134-141.

Abstract: The sorbent power of hydrotalcite compound [Mg3Al(OH)8]2CO3xH2O for Cr(VI) from water solution has been evaluated. The adsorption behaviour of Cr(VI) was investigated at different initial concentration of adsorbate, contact time, pH, temperature and adsorbent dose by batch equilibrium technique. The extent of adsorption decreased from 23.2 mg to 4.9 mg with increase in pH from 2.0 to 10.0. The adsorption of Cr(VI) proceeds predominantly by the anion-exchange mechanism. A reaction kinetic study was undertaken by considering adsorption of the Cr(VI) on the outer surface as well as diffusion within the pores of the adsorbent. The mass-transfer coefficients as a function of temperature were calculated to explain the results. The adsorption follows first-order kinetics. A Langmuir isotherm model fits the equilibrium data well. Thermodynamic parameters such as Delta G(0), Delta H-0 and Delta S-0 were calculated to predict the nature of adsorption. Desorption studies showed that about 95.7% of Cr(VI) can be desorbed from the adsorbent at 0.1 M NaOH. The efficiency of the adsorbent to remove Cr(VI) from synthetic wastewater has also been tested.

Keywords: Activated Carbon, Adsorption, Sawdust, Sorption, Kinetics, Charge, Clay

? Sreenivasulu, A., Sundaram, E.V. and Reddy, M.K. (1999), Phosphate adsorption studies using carbon prepared from stem bark of Eucalyptus teriticornis Smith. *Indian Journal of Chemical Technology*, **6** (5), 256-262.

Abstract: Removal of phosphate ions was studied using carbon prepared from stem bark of Eucalyptus teriticornis Smith (family Myrtaceae), from aqueous solution. Study was carried out in the batch technique: as a function of contact time, phosphate concentration, temperature and pH of the solution. Equilibrium time for studied concentrations was not same. The sorption process follows reversible first order kinetics and fits Langmuir sorption isotherm. The forward rate constants increased with decrease in concentration. Maximum sorption was observed at lower temperature and higher pH. Nature of sorption was exothermic and this was supported by K-d values. Desorption study and effect of other ions are also studied.

Keywords: Adsorption, Batch, Carbon, Contact Time, Desorption, Equilibrium, First Order Kinetics, Isotherm, Kinetics, Langmuir, pH, Phosphate, Phosphorus Removal, Removal, Sorption, Temperature

? Thomas, R. and Anirudhan, T.S. (1999), Uptake of mercury(II) in batch system by stannic-titania mixed-oxide gel: Kinetics and thermodynamics. *Indian Journal of Chemical Technology*, **6** (5), 268-275.

Abstract: Relatively limited information is available regarding the kinetics of sorption of metal ions from solutions onto mixed-oxide gel. For this reason, a detailed study of the kinetics of sorption of Hg(II) on stannic-titania mixed-oxide gel was conducted in a controlled batch system. The sorbent has the ability to adsorb substantial quantities of Hg(II) from aqueous solutions. The extent of removal was found to be dependent on adsorbent dose, initial concentration, pH and temperature. The process follows first-order reversible kinetics. The intraparticle diffusion of metal ions through pores in the adsorbent was shown to be the main rate limiting step. Adsorbent is effective for the quantitative removal of Hg(II) over the pH range 5-10. The applicability of Langmuir adsorption isotherm equation for Hg(II) removal has been tested. An examination of thermodynamic parameters shows that the adsorption of Hg(II) by adsorbent is an endothermic process and is spontaneous at the temperature investigated. The method was applied for synthetic wastewater. The spent gel can be regenerated and reused by HCl treatment.

Keywords: Aqueous-Solution, Ion-Exchanger, Sorption, Removal, Adsorption, Metals, Silica, Water

? Goyal, M., Rattan, V.K. and Bansal, R.C. (1999), Adsorption of nickel from aqueous solutions by activated carbons. *Indian Journal of Chemical Technology*, **6** (6), 305-312.

Abstract: Adsorption isotherms of Ni(II) ions from aqueous solutions of nickel nitrate in the concentration range 50-1000 mg/L on two samples of granulated and two samples of fibrous activated carbons associated with varying amounts of carbon-oxygen surface groups have been determined. The adsorption isotherms are Langmuir in shape showing an initial rapid adsorption tending to be constant at higher concentrations. The adsorption of Ni(II) ions increases on oxidation, and decreases on degassing of the carbons surface. The increase in adsorption on oxidation depends upon the nature of the oxidative treatment while the decrease on degassing depends upon the temperature of degassing. The adsorption is related directly to the amount of acidic surface oxygen groups present on the carbon surface.

Keywords: Adsorption, Adsorption Isotherms, Aqueous Solutions, Behavior, Carbon, Isotherms, Langmuir, Ni(II) Ions, Nickel, Nitrate, Oxidation, Oxidative Treatment, Oxygen, Polymer Carbons, Surface Characteristics, Temperature, Treatment

Balaji, S., Ghosh, B., Das, M.C., Gangopadhyay, A.K., Singh, K., Lal, S., Das, A., Chatterjee, S.K. and Banerjee, N.N. (2000), Removal kinetics of arsenic from aqueous media on modified alumina. *Indian Journal of Chemical Technology*, **7** (1), 30-34.

Abstract: This paper examines arsenic removal kinetics by applying modified alumina, so as to attain, maximum contamination level (MCL) at faster rate. Y-alumina has been widely used, as an adsorbent to polish off residual arsenic in water following coagulant (Fe3+) treatment. Ferric system mounted over porous Y-alumina shows better efficiency. Adsorption isotherm of the adsorbents, Y-alumina and its modified version indicate that adsorption obeys Freundlich equation. The intensity factor, n of the modified alumina being closer to unity than alumina alone, the rate of adsorption becomes distinctly faster. The adsorption capacity, kf which is a measure of heat of adsorption, remains more or less the same, indicating marginal difference only. The superiority of this protocol is established further, as, there shall be no arsenic bearing sludge with its attending disposal problem.

Keywords: Groundwater

Rengaraj, S., Sivabalan, R., Arabindoo, B. and Murugesan, V. (2000), Adsorption kinetics of *o*-cresol on activated carbon from palm seed coat. *Indian Journal of Chemical Technology*, **7** (3), 127-131.

Abstract: The activated carbon prepared from palm seed coat by dolomite process showed more than 95% removal of o-cresol from aqueous solution under optimum conditions. The adsorption capacity calculated by Freundlich adsorption isotherm gave 19.58 mg/g of o-cresol removal. The kinetic studies revealed the overall rate constant decrease with increasing concentration of o-cresol. The activated carbon showed reversible uptake of o-cresol and thus have a good application potential for the removal/recovery of o-cresol from aqueous solution. Film diffusion was found to be the rate limiting step. Recovery of used carbon was studied by in situ chemical regeneration technique and showed good result.

Keywords: Removal

? Sridhari, T.R. and Dutta, P.K. (2000), Synthesis and characterization of maleilated chitosan for dye house effluent. *Indian Journal of Chemical Technology*, **7** (4), 198-201.

Abstract: Efficient procedure for the preparation of maleilated chitosan derivative has been established on the basis of the chemical modifications. Selective and quantitative maleilation of chitosan proceeds smoothly by the reaction of chitosan with maleic anhydride in dimethyl acetamide at 120 degrees C for 4 h and resulted in the formation of amide product. Thereafter imidization by curing was done. The structure of the derivative is well confirmed by titration of carboxylic groups, elemental analysis and IR spectroscopy. The resulting maleilated chitosan exhibits much improved swelling in water. It is expected that multifunctional polar group in chitosan should have good dye adsorption capacity than pure chitosan.

Keywords: Adsorption, Adsorption Capacity, Analysis, Capacity, Characterization, Chitosan, Dye, Titration, Water

? Mohammad, A. and Iraqi, E. (2000), Sorption behaviour of certain metal ions in normal-phase and reversed-phase TLC using layers of silica-zirconium tungstophosphate gels. *Indian Journal of Chemical Technology*, **7** (5), 223-226.

Abstract: Normal-phase and reversed-phase thin layer chromatographic techniques using mixed layers consisting of silica and zirconium tungstophosphate gels have been utilized to examine the sorption behaviour of some metal ions. Tri-n-butyl phosphate at concentration levels 0.1-2 M has been used to impregnate the layer material. Acidic solvent system containing formic acid were used as mobile phase. Several metal ions from their two-component mixtures have been clearly separated.

Keywords: Formic Acid, Metal Ions, Silica, Sorption, System, TLC

? Alam, T., Gairola, P., Tarannum, H., Kamaluddin and Kumar, M.N.V.R. (2000), Conversion of anilines to their oligomers by copper hexacyanoferrate(II). *Indian Journal of Chemical Technology*, **7** (5), 230-235.

Abstract: Aniline, p-toluidine and p-chloroaniline have been oxidized by copper hexacyanoferrate(II). The reaction was appreciable in basic medium. The resultant oxidation products deposited on copper hexacyanoferrate (II) surface are reddish brown in colour. The oxidation products have been characterized by CC-MS and IR spectroscopy. From the spectral studies, the oxidation product of aniline has been identified as tetramer, while that of p-toluidine and p-chloroaniline are trimer and dimer, respectively.

Keywords: Adsorption, Aniline, Benzidine, Copper, Montmorillonite, Oxidation

Das, C., Sudersanan, M. and Totlani, M.K. (2000), Corrosion inhibition of picolinic acid and ascorbic acid mixture by 5-hexyn-1-ol. *Indian Journal of Chemical Technology*, **7** (6), 292-299.

Abstract: Inhibition of carbon steel corrosion in a deaerated solution containing a mixture of picolinic acid (3.5×10-2 M) and ascorbic acid (1.0×10-2 M), effective for magnetite film removal, by 5-hexyn-1-ol has been studied between 30 to 70°C by weight loss and electrochemical impedance techniques. The effect of inhibitor concentration and the reaction temperature on the performance of inhibitor has been evaluated. Activation energy for carbon steel corrosion decreased upon the addition of 5-hexyn-1-ol suggesting that the mode of operation is by chemisorption of the inhibitor on the metal surface. The inhibitor efficiency increased with temperature confirming to the chemical nature of adsorption process. The thermodynamic parameters such as free energy, heat and entropy of adsorption of the inhibitor on carbon steel surface have been determined. 5-hexyn-1-ol has been shown to follow Bockris-Swinkels isotherm leading to the replacement of four water molecules per inhibitor molecule adsorbed. Impedance measurements showed that the addition of inhibitor affects the charge transfer process on exposure for longer duration. While the charge transfer resistance increased in presence of 5-hexyn-1-ol, the double layer capacity showed reverse trend.

Keywords: Mild-Steel, Acetylenic Alcohols, Iron, Adsorption

Singh, D.K. and Srivastava, B. (2001), Basic dyes removal from wastewater by adsorption on rice husk carbon. *Indian Journal of Chemical Technology*, **8** (2), 133-139.

Abstract: Rice husk carbon (RHC) has been prepared from rice husk impregnated with 50% H3PO4 and carbonised at 300°C. Its adsorption capacity has been tested for the decolourization of wastewater containing safranine and Methylene Blue. The effect of system variables such as concentration, temperature, pH, contact time, adsorbent dosage and particle size are investigated. Removal of dye has been found to increase with increase in dye concentration and pH of the solution. Kinetics of removal has been found to follow the first order rate expression. The adsorption isotherm data fitted both Freundlich and Langmuir adsorption isotherms. Thermodynamic studies show the adsorption to be an exothermic and spontaneous.

Keywords: Fly-Ash, Color

? Sharma, Y.C. (2001), Adsorption of Cr(VI) onto wollastonite: Effect of pH. *Indian Journal of Chemical Technology*, **8** (3), 186-190.

Abstract: Wollastonite, a clay mineral has been investigated for the adsorption of Cr(VI). Adsorption of chromium was studied as a function of pH and 2.0,5.0,6.0 and 8.0 pH were selected for studies. Maximum adsorption was found (74.4%) at pH 2.0, temperature 30°C, 0.5×10-4M Cr(VI) concentration, 0.01 M NaClO4 ionic strength and 100 rpm of agitation speed. II was, however, minimum (12.3%), at pH 8.0. Equilibrium time of adsorption was independent of pH values. Different possible explanations have been discussed for removal or Cr(VI) for the present system. Kinetics of the removal of Cr(VI) at various DH values has been discussed and rate constant of the adsorption has been determined.

Keywords: Adsorption, Agitation, Aqueous-Solutions, Carbon, Chromium(VI), Cr(VI), Oxide, Removal

? Mohan, K.R., Ramesh, A. and Seshaiah, K. (2001), Studies on adsorption of selected organophosphorus pesticides by clays. *Indian Journal of Chemical Technology*, **8** (4), 278-280.

Abstract: Adsorption of the organophosphorus pesticides, malathion and dimethoate on clays (viz. montmorillonite and kaolinite) saturated with cations, from aqueous solution was studied. The extent of adsorption was more on montmorillonite saturated with Fe3+ and Ca-2+ than the montmorillonite saturated with Na+ and kaolinite saturated with the same cations for both the pesticides. The adsorption isotherms are fit into Freundlich adsorption equation.

Keywords: Adsorption, Adsorption Isotherms, Freundlich, Isotherms, Kaolinite, Montmorillonite, Pesticides

Abraham, B.T. and Anirudhan, T.S. (2001), Sorption recovery of metal ions from aqueous solution using humus-boehmite complex. *Indian Journal of Chemical Technology*, **8** (4), 286-292.

Abstract: aqueous solution was studied using the batch equilibrium method. Experiments were carried out as a function of pH and concentration of metal ions. It was shown that the maximum adsorption of 96.7% for Pb(II) occurred at an optimum pH of 5.5 whereas the maximum adsorption of 91.7% for Hg(II) and 80.8% for Cd(II) was observed at pH 6.0. The adsorption of metal ion proceeds predominently by the cation-exchange mechanism. Adsorption isothermal data could be interpreted by the Langmuir and Freundlich isotherm equations. Langmuir and Freundlich constants have been determined. Adsorption experiments were carried out to investigate the competitive effect on the uptake of metal ions from binary mixtures. Sheindorf - Rebhun - Sheintuch (SRS) model was used to study the competitive interactions for the adsorption of Pb - Hg, Pb - Cd and Cd - Hg mixtures by the adsorbent.

Keywords: Adsorption, Removal, Water

? Prasad, H.H., Senger, A., Chauhan, K., Popat, K.M. and Anand, P.S. (2001), Synthesis of crosslinked methacrylic acid-co-N,N’-methylene bis acrylamide sorbents for recovery of heavy metal ions from dilute solutions.  *Indian Journal of Chemical Technology*, **8** (5), 371-377.

Abstract: Several crosslinked porous copolymers of methacrylic acid-NX-methylene bis acrylamide were synthesized by suspension polymerisation using benzoylperoxide as the initiator. They were characterized for physico-chemical properties like, surface area, porosity and scientific weight capacity. The sorbents were further studied for adsorption of nickel and copper ions from spiked metal ion solutions in static and dynamic conditions. Concentration ratios of 1:60 and 1:30 have been achieved for nickel and copper ions respectively.

Keywords: Adsorption, Aqueous-Solutions, Capacity, Copper, Heavy Metal, Heavy Metal Ions, Hg(II), Metal Ions, Microbeads, Nickel, Porosity, Removal, Resins, Weight, Wollastonite

? Krishnamurthy, A.S.R. and Narsimha, R. (2001), Retention behavior and mechanism of adsorption of some chloropyridine isomers in normal phase liquid chromatography on silica, cyano-silica and amino-silica columns. *Indian Journal of Chemical Technology*, **8** (6), 458-462.

Abstract: The retention behaviour of some chloropyridine isomers on silica, cyano-silica and amino-silica columns in normal phase liquid chromatography has been studied. Retention times on first two columns follow similar pattern while is different on amino-silica column. An equation for inter comparison of columns for selectivity purpose is developed and verified. Log, k’ versus log X-B plots follow Snyder and Soczewinski model of adsorption. A mixed interaction of involving hydrogen bonding and dipolar interactions are responsible for the retention of solutes on silica and cyano-silica columns and weak hydrogen bonding interaction lead to separation on amino-silica column. Cyano-silica column is preferred for their separation considering the retention times. However, best selectivity is seen for monoisomers and 2,6-DCP on either silica or cyanosilica column and 3,5-DCP and 2,3,5-TCP on amino-silica column.

Keywords: Adsorption, Comparison, Gel, Lead, Localization, Mixtures, Model, Multicomponent Mobile Phases, Retention, Separation, Silica, Solid Chromatography, Solute-Solvent Interactions, Strength, Surface

? Begum, S.S., Subramanian, R., Lakshminarayanan, V. and Mayanna, S.M. (2001), Corrosion inhibition of mild steel in sulphuric acid by n-octylamine and iodoacetic acid. *Indian Journal of Chemical Technology*, **8** (6), 463-468.

Abstract: The influence of iodoacetic acid (IAA) on the corrosion inhibition of mild steel in 0.5 M sulphuric acid (H2SO4) containing octylamine (OA) has been studied using weightloss, polarization and a.c. impedence techniques. Corrosion data obtained by different methods are consistent. IAA and OA individually retard the corrosion of mild steel in sulphuric acid. The addition of IAA enhances the inhibitor efficiency of OA considerably. Adsorption of inhibitors follows quasi-substitution process at the interfaces. OA cations are adsorbed by coulombic interaction on the metal surface, which is preoccupied by IAA molecules as dipoles. Adsorption model is suggested to account the synergistic action of IAA on the corrosion inhibition of mild steel in sulphuric acid solution by OA.

Keywords: Adsorption, Adsorption Model, Corrosion, Corrosion Inhibition, Mild Steel, Model, Molecules, Polarization, Steel, Sulphuric Acid, Zinc

? Singh, I.B. and Singh, D.R. (2001), Hexavalent chromium removal using iron bearing industrial sludges. *Indian Journal of Chemical Technology*, **8** (6), 487-495.

Abstract: The use of iron bearing metallic and mineral materials for the treatment of highly toxic Cr(VI) containing industrial wastewater have received increased attention for the past decade. In conventional treatment, a large amount of chromium hydroxide generates as secondary solid waste which poses a serious problem of disposal. In the presence of iron bearing materials, Cr(VI) reduces to Cr(III) and Fe(II) oxidises to Fe(III) generating mixed complexes from which separation probability of individual element reduces. Based on this chemical principle it is expected that such industrial solid wastes containing iron as a major constituent have potential to reduce highly toxic Cr(VI) to less toxic Cr(III). In view of this, present investigation was aimed to utilise iron bearing industrial wastes like sludges of steel tube making industry and aluminium industry for removal of Cr(VI). Studies include identification of suitable pH for the Cr(VI) reduction, optimisation of dosage and contact time and determination of reaction kinetics. No Cr(VI) was detected from the reacted wastes and total chromium was measured as Cr(III). Toxicity characteristics leaching procedure(TCLP) has been employed to estimate the leachability of chromium, iron etc from the reacted wastes. TCLP results indicate a negligible amount of chromium as Cr(III) and iron leachability from the reacted wastes.

Keywords: 25°C, Aluminium, Biotite, Chromate Reduction, Chromium, Contact Time, Cr(III), Cr(VI), Cr(VI) Reduction, Hexavalent Chromium, Industrial Wastewater, Interface, Iron, Kinetics, Oxides, pH, Reduction, Removal, Sorption, Spectroscopy, Steel, TCLP, Toxicity, Treatment, Wastes, Wastewater

Krishnan, K.A. and Anirudhan, T.S. (2002), A preliminary examination of the adsorption characteristics of Pb(II) ions using sulphurised activated carbon prepared from bagasse pith. *Indian Journal of Chemical Technology*, **9** (1), 32-40.

Abstract: Bagasse pith, a sugar industry waste, has been converted into sulphurised activated carbon by carbonisation at 200°C under N2 for 2h, followed by steam activation in presence of SO2 and H2S at 400°C for 2h. The adsorption characteristics of Pb(II) ions on activated carbon have been examined from aqueous solutions using batch technique. The effect of agitation period, initial concentration of sorbate, pH, ionic strength, temperature and particle size of the adsorbent has been studied to optimise the conditions for maximum removal of Pb(II) ions, The maximum removal takes place in the pH range of 4.0-8.0. With an initial concentration of Pb(II) at 50 mg/L at 30°C and pH 6.0, its removal has been found to be 99.8 %. The process of uptake is governed by a pseudo-second-order kinetics. Kinetic parameters as a function of initial concentration and temperature have been calculated. Decrease in ionic strength and increase in temperature of the solution has been found to improve the uptake of Pb(II). Studies show that the adsorption decreases with an increase in particle size of the adsorbent. Sorption data of Pb(II) in the concentration range 50-1000 mg/L have been correlated with Langmuir isotherm model. Sulphurised activated carbon had adsorption capacities for Pb(II) from 200.08 mg/g at 30°C to 243.93 mg/g at 60°C, which is much higher than the values for the adsorbent materials reported in the literature. The adsorbent has been satisfactorily used for the removal of Pb(II) from synthetic wastewaters. The adsorbed Pb(II) ions are completely recovered with 0.2 M HCl.

Keywords: Aqueous-Solutions, Coconut Husk, Waste-Water, Removal, Kinetics, Sawdust, Lead, Thermodynamics, Polysulfide, Mercury(II)

? Le, Z.P., Yu, X.J., Lin, J.X. and Wei, K.M. (2002), Non-promoted Ru/sepiolite catalyst for ammonia synthesis. *Indian Journal of Chemical Technology*, **9** (2), 154-158.

Abstract: Sepiolite was used as support for ruthenium catalyst. Non-promoted Ru/Sep is proved to be effective for ammonia synthesis. The catalyst was characterized by XRD, XPS and nitrogen adsorption isotherms. Ru is reduced completely and is present in few oxidation states on the support. Using non-aqueous solvent instead of water in the impregnation process on basic support, the Ru dispersion could be increased. Chlorine-free Ruthenium catalyst was prepared using RuCl3 by washing with ammonia solution.

Keywords: Adsorption, Adsorption Isotherms, Alumina, Ammonia, Catalyst, Dinitrogen, Isotherms, Nitrogen, Oxidation, Ru, Ruthenium, Sepiolite, Supported Ruthenium Catalysts, Synthesis, Water, XPS, XRD

Inbaraj, B.S. and Sulochana, N. (2002), Basic dye adsorption on a low cost carbonaceous sorbent: Kinetic and equilibrium studies. *Indian Journal of Chemical Technology*, **9** (3), 201-208.

Abstract: A carbonaceous sorbent prepared from an indigenous agricultural waste, jack fruit peel, by acid treatment was tested for its efficiency in removing basic dyes. Malachite green, a common basic dyestuff of triphenyl methane series used for dyeing silk and wool directly and cotton mordanted with tannin to deep green, was chosen for investigation. The process parameters studied include agitation time, initial dye concentration, carbon dose, pH and temperature. The adsorption followed first order reaction equation and the rate is mainly controlled by intraparticle diffusion. Freundlich, Langmuir and Redlich-Peterson isotherm models were applied to the equilibrium data. The adsorption capacity (Q0) obtained from the Langmuir isotherm plot was 166.37 mg g-1 at an initial pH of 6.0 and at 32±0.5°C. The influence of pH on dye removal was not significant and the adsorption capacity increased with increase in temperature. A portion of the dye was recovered from the spent carbon using 50% acetic acid (v/v).

Keywords: Activated Carbon, Adsorbent, Adsorption, Aqueous-Solutions, Blue, Dye, Dyes, Mass-Transfer, Orange Peel, Peel, Removal, Solid-Waste

? Sarkar, M. and Datta, P.K. (2002), Sorption aided process for the removal and recovery of Zinc(II) using salicylaldoxime immobilised silica gel. *Indian Journal of Chemical Technology*, **9** (3), 245-250.

Abstract: Salicylaldoxime immobilised silica gel was used as an effective solid phase surface, for the preconcentration, removal or recovery of zinc ion from aqueous phase. The efficiency was tested by the equilibrium sorption study both in batch and column operations. The efficiency increases with the shaking period, agitation speed, adsorbent dose, temperature and flow rate but is independent on the volume of the solution. Maximum adsorption was found to occur at pH 5.5. Alkali metal, alkaline earth metal and ammonium salts do not influence the adsorption process. Heavy metal ions viz. Cu(II), Ni(II), Co(II) and Fe(III) get adsorbed by the said process but at much different pH values. Complexing ligands like EDTA and cyanide markedly decrease the adsorption of Zn(II) by the said procedure. The adsorption data fits well the Langmuir adsorption isotherm model. The negative free energy change indicates that the process is favourable as well as spontaneous. The merit of the process lies with its high preconcentration factor.

Keywords: Adsorption, Adsorption Isotherm, Alkaline-Earth, Aqueous-Solution, Atomic-Absorption Spectrometry, Batch, Co(II), Cu(II), EDTA, Equilibrium, Heavy Metal, Heavy Metal Ions, Ion-Exchange Separation, Isotherm, Langmuir, Langmuir Adsorption Isotherm, Metal Ions, Metal-Ions, Model, pH, Pre-Concentration, Preconcentration, Removal, Sea-Water, Silica, Sorption, Temperature, Trace-Metals, Waste-Water, Zinc, Zinc Ion, Zinc(II)

? Khan, A.A., Niwas, R. and Alam, M.M. (2002), Ion-exchange kinetics on styrene supported zirconium(IV) tungstophosphate: An organic-inorganic type cation exchanger. *Indian Journal of Chemical Technology*, **9** (3), 256-260.

Abstract: Kinetics of exchange reaction of Mg2+, Ca2+, Sr2+, Ba2+, Cu2+, Mn2+, Ni2+ and Zn2+ on styrene supported zirconium (IV) tungstophosphate cation exchanger has been studied at 25, 33, 50 and 65°C. The rate of exchange is found to be particle diffusion controlled at a metal ion concentration greater than or equal to0.02 M in aqueous medium. Various kinetic parameters such as-diffusion coefficient, D-0, energy of activation, E-a and entropy of activation, ΔS°, have been calculated.

Keywords: Cation-Exchanger, Diffusion, Exchange, Ion Exchange, Ion Exchange Kinetics, Kinetic, Kinetics, Metal-Ions, Ni2+

? Singh, D.K., Srivastava, B. and Yadav, P. (2002), Iron oxide coated sand as an adsorbent for separation and removal of phenols. *Indian Journal of Chemical Technology*, **9** (4), 285-289.

Abstract: Iron oxides were coated onto the surface-of sand,, an phenolic compounds. These form. complexes on the surface of hydrous iron oxide. Probably, the coordination of ligands with the central metal ion occurs through the phenolic oxygen. Adsorption capacities, rate of adsorption and breakthrough curves were studied. The adsorption of phenols remains same in the pH range 3-6. Distribution coefficients (K-d) of 17 phenols were determined in water and sodium hydroxide solutions (0.1-0.5 M). On the basis of difference in K-d values some quantitative separation of phenols were achieved. The adsorbed phenols were desorbed quantitatively with 1 M NaOH and the same column could be used for 4-5 cycles consecutively. A small phenol removal unit was also studied for phenol removal from water.

Keywords: Adsorption, Breakthrough, Compounds, Desorption, Distribution, Goethite Alpha-Feooh, Humic Substances, Hydrous Oxides, Iron, Iron Oxide, Mechanisms, Natural Organic-Matter, pH, Phenol, Phenols, Removal, Sand, Sorption, Surface, Water

? Bansal, R.C., Aggarwal, D., Goyal, M. and Kaistha, B.C. (2002), Influence of carbon-oxygen surface groups on the adsorption of phenol by activated carbons. *Indian Journal of Chemical Technology*, **9** (4), 290-296.

Abstract: Adsorption isotherms of phenol from its aqeous solutions on four samples of activated carbons having different surface areas and associated with varying amounts of carbon-oxygen surface groups have been determined in the concentration range 20-100 mg/L. The adsorption of phenol does not depend upon surface area alone but is also influenced by the presence of carbon-oxygen surface groups. The amount of these surface groups was enhanced by oxidation with nitric acid, ammonium persulphate and hydrogen peroxide and was decreased by degassing the activated carbons at gradually increasing temperatures of 400degrees, 650degrees and 950degrees. The oxidation of the carbons decreases the adsorption, the extent of decrease depending upon the nature of the oxidative treatment. The adsorption increases on degassing of the carbon samples, the increase depending upon the nature of carbon-oxygen surface groups being eliminated at that temperature on degassing. The results indicate that while the presence of acidic carbon-oxygen surface groups which are evolved as CO2 suppresses the adsorption of phenol, the presence of non-acidic surface groups which are evolved as CO tends to enhance the adsorption of phenol.

Keywords: Adsorption, Adsorption Isotherms, Aqueous-Solutions, Behavior, Carbon, Co, CO2, Isotherms, Oxidation, Oxidative Treatment, Phenol, Polymer Carbons, Temperature, Treatment, Vapor, Water

? Prasad, H.H., Popat, K.M. and Anand, P.S. (2002), Synthesis of crosslinked methacrylic acid-co-ethyleneglycol dimethacrylate polymers for the removal of copper and nickel from water. *Indian Journal of Chemical Technology*, **9** (5), 385-392.

Abstract: Crosslinked copolymers based on methacrylic acid and ethyleneglycol dimethacrylate were prepared by suspension polymerization and investigated for their ability to remove copper and nickel at trace level from heavy metal polluted water. The copolymers were characterized for physico-chemical properties like surface area, porosity and scientific weight capacity, The Langmuir and Freundlich adsorption isotherms were used to represent the experimental data. Saphn-Schlunder and Morris-Webber models applied to determine the external and intraparticle diffusion coefficients. The absorption process follows first order kinetics and the specific rate constant Kr was obtained by the application of Lagergan equation. Concentration ratios of 1:60 and 1:30 have been achieved for nickel and copper respectively under dynamic conditions.

Keywords: Heavy-Metal Ions, Aqueous-Solutions, Adsorption, Wollastonite, Resins, Carbon

? Prasad, H.H., Popat, K.M. and Anand, P.S. (2002), Synthesis of crosslinked methacrylic acid-co-ethyleneglycol dimethacrylate polymers for the removal of copper and nickel from water. *Indian Journal of Chemical Technology*, **9** (5), 385-392.

Abstract: dCrosslinked copolymers based on methacrylic acid and ethyleneglycol dimethacrylate were prepared by suspension polymerization and investigated for their ability to remove copper and nickel at trace level from heavy metal polluted water. The copolymers were characterized for physico-chemical properties like surface area, porosity and scientific weight capacity, The Langmuir and Freundlich adsorption isotherms were used to represent the experimental data. Saphn-Schlunder and Morris-Webber models applied to determine the external and intraparticle diffusion coefficients. The absorption process follows first order kinetics and the specific rate constant Kr was obtained by the application of Lagergan equation. Concentration ratios of 1:60 and 1:30 have been achieved for nickel and copper respectively under dynamic conditions.

Keywords: Absorption, Adsorption, Adsorption Isotherms, Aqueous-Solutions, Capacity, Carbon, Copper, Diffusion, First Order Kinetics, Freundlich, Freundlich Adsorption Isotherms, Heavy Metal, Heavy-Metal Ions, Isotherms, Kinetics, Lagergan Equation, Langmuir, Models, Nickel, Polymerization, Polymers, Porosity, Removal, Resins, Water, Weight, Wollastonite

? Kardhikeyan, G., Pius, A. and Alagumuthu, G. (2002), Kinetic and thermodynamic studies on adsorption of fluoride by dolomite. *Indian Journal of Chemical Technology*, **9** (5), 397-401.

Abstract: Batch adsorption studies were carried out to determine the effect of adsorbent dose, initial adsorbent concentration and temperature oil the adsorption of fluoride by naturally occurring dolomite. The adsorption of fluoride was found to depend oil temperature and concentration. The adsorption process followed first-order kinetics. The mechanism of adsorption obeyed Langmuir adsorption isotherm indicating an unimolecular layer pattern. Dolomite possesses considerable defluoridation efficiency at neutral pH and hence can be an effective defluoridating material. Thermodynamic studies revealed that the adsorption of fluoride by dolomite is an endothermic process, showing increase in sorption at higher temperature. Also, negative values of DeltaG(o) indicate the spontaneity of the sorption process.

Keywords: Adsorption, Defluoridation, Fluoride, Kinetics, pH, Removal, Sorption, Water

? Kadirvelu, K., Sivasankari, C., Jambuligam, M. and Pattabhi, S. (2002), Activated carbon from parthenium as adsorbent: Adsorption of Hg(II) from aqueous solution. *Indian Journal of Chemical Technology*, **9** (6), 499-503.

Abstract: Activated carbon (AC) prepared from parthenium was used to remove Hg(II) from aqueous solution by adsorption technique under varying conditions of agitation time, metal ion concentration, adsorbent dose and PH. Adsorption equilibrium reached within 165 min for all concentrations studied (10 to 50 mg/L). Adsorption is dependents on solution PH, Hg(II) concentration, carbon concentration and contact time. Adsorption followed both Langmuir and Freundlich isotherm models. The adsorption capacity was found to be 10 mg/g of AC at initial PH of 5.0 at 30+2degreesC for tile particle size of 125-250 mum. The percent removal increased with PH from 2 to 6 and remained constant up to PH 10.0.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Capacity, Carbon, Coirpith, Contact Time, Equilibrium, Freundlich, Freundlich Isotherm, Heavy-Metals, Hg(II), Isotherm, Isotherm Models, Langmuir, Langmuir and Freundlich Isotherm, Mercury(II), Models, Ph, Removal, Waste-Water

? Parekh, D.C., Patel, J.B., Sudhakar, P. and Koshy, V.J. (2002), Removal of trace metals with mango seed powder. *Indian Journal of Chemical Technology*, **9** (6), 540-542.

Abstract: Removal of heavy metals like Cu, Cd, Ph from aqueous solution was studied using mango seeds powder. Study was carried out in batch technique as a function of contact time, metal ion concentration and pH of the solution. The sorption process follows Freundlich sorption isotherm. Maximum sorption was observed at acidic pH itself. The method is applied to various synthetic solutions.

Keywords: Peanut Hull Carbon, Industry Waste-Water, Aqueous-Solution, Adsorption, Mercury(II)

? Lagashetty, A., Mallikarjuna, N.N. and Venkataraman, A. (2003), Adsorption studies of lead ions on gamma-Fe2O3-thiourea complex composite. *Indian Journal of Chemical Technology*, **10** (1), 63-66.

Abstract: Adsorption of lead ions in aqueous solution on gamma-Fe2O3-thiourea complex composite is reported. The adsorbent was characterised by X-ray diffraction (XRD), infrared (IR) and scanning electron micrograph (SEM) studies. The eluent was subjected to atomic absorption spectroscopy to determine the percentage of the adsorbed lead ions onto the complex composite. IR studies of the complex composite showed that the formation of hydrogen bond from the amine group of the thiourea to the surface hydroxyl groups, and lead ions adsorbed on adsorbent shows shift in frequencies and with appearance of some new peaks. SEM studies for pure gamma-Fe2O3 show particles in the range of 100-200 nm with varying shape and size. The adsorbent shows foam net like structure on the surface of the complex composite. Atomic absorption studies showed the decrease of lead ions to 50% after adsorption with the complex composite. Solution conductivity of the eluent is increased to double that of pure lead solution after adsorption. The potential use of gamma-Fe2O3-thiourea complex composite in adsorption study is explained.

Keywords: Absorption, Adsorption, Bond-Valence Determination, Complex, Infrared, Lead, Pb(II), SEM, Sorption Products, X-Ray, X-Ray Diffraction, XAFS, XRD

? Meena, A. and Rajagopal, C. (2003), Comparative studies on adsorptive removal of chromium from contaminated water using different adsorbents. *Indian Journal of Chemical Technology*, **10** (1), 72-78.

Abstract: Chromium, especially the hexavalent form, is toxic to humans. Industries like chrome plating, textile, electroplating discharge Cr(VI) in their effluents. Wastes containing chromium are environmentally persistent and toxic, and cannot be degraded or detoxified biologically. Various techniques developed for the removal of heavy metals include chemical precipitation, ion exchange and adsorption. Activated carbon adsorption systems though widely used are very expensive and the regeneration cost is also very high. Therefore, their use in wastewater treatment may not be economically feasible. There is, therefore, a need to identify and study adsorptive characteristics of low cost alternatives. The present investigation was, therefore, undertaken to select suit-able locally and commercially available adsorbents such as activated alumina, ion exchange resin, with special attention to low cost adsorbents like saw dust, treated saw dust and sand, and to carry out a comparative study of their applicability to heavy metal removal. The results of these studies are presented in this paper.

Keywords: Activated Carbon, Activated Carbon Adsorption, Adsorbents, Adsorption, Carbon, Chromium, Cost, Cr(VI), Exchange, Heavy Metal, Heavy Metals, Ion Exchange, Metal Removal, Regeneration, Removal, Resin, Sand, Treatment, Wastewater, Wastewater Treatment, Water

? Vinod, V.P., Varghese, S. and Anirudhan, T.S. (2003), Adsorption performance of Zr-pillared montmorillonite for the removal of organic pollutants from aqueous phase. *Indian Journal of Chemical Technology*, **10** (2), 201-210.

Abstract: This study examined the effectiveness of Zr-pillared Na-rich montmorillonite (PILC) in removing humic acid (HA) and tannic acid (TA) from aqueous solutions by adsorption. Batch experiments were conducted to evaluate the pH effects, the kinetics, temperature effects and sorption isotherm on the HA and TA adsorption onto PILC. The research demonstrated that the PILC could sufficiently remove HA and TA from aqueous solutions. The most effective pH range was found to be 3.0 to 4.0 for both HA and TA. The kinetic studies showed that all equilibrium time of 6 h was needed for the adsorption or HA and TA oil PILC and adsorption rates could be described by a first-order Lagergren equation. The adsorption of HA and TA was found to increase with ionic strength due to the compression of diffuse double layer. The equilibrium isotherm data for both HA and TA fitted Langmuir isotherm model and based on Langmuir constants, the PILC had a greater adsorption capacity for HA than for TA. The isosteric heats of the adsorption process were determined at various surface coverages or the adsorbent. The thermodynamic parameters such as change in free energy (ΔG°), enthalpy (ΔH°), and entropy (ΔS°) were derived to predict the nature of adsorption. Sheindrof-Rebhun-Sheintucth isotherm model was used to study the competition interaction for the adsorption of single component from mixture by PILC. About 91.4 and 94.8% or HA and TA call be recovered from the spent adsorbent by controlling the pH at 11.0.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Aqueous Solutions, Batch Experiments, Capacity, Clay, Equilibrium, HA, Humic Substances, Isotherm, Kinetic, Kinetics, Lagergren Equation, Langmuir, Langmuir Isotherm, Model, Montmorillonite, pH, Removal, Research, Sorption, Tannic-Acid, Temperature, Thermodynamic, Thermodynamic Parameters

? Singh, A.K. and Tiwari, P.N. (2003), Removal of basic dye from industrial wastewater by adsorption. *Indian Journal of Chemical Technology*, **10** (2), 211-216.

Abstract: For proper understanding, the process of removal of solute dye by adsorption and to reveal the manner in which this adsorption process can be adopted for removal of the solute material from the solution, the study of isotherm, kinetics and thermodynamic parameters is of paramount importance. The growth or adsorption with time is function of the initial concentration, temperature and pH of the system. The kinetics of adsorption was found to be of first order with intra-particle diffusion at the rate-controlling step. The values of different thermodynamic properties such as ΔG°, ΔH° and ΔS° indicate that the process is spontaneous, feasible and exothermic in nature. The adsorption process satisfies Langmuir isotherm.

Keywords: Aqueous-Solutions, Adsorbents, Silica, Color

? Sivabalan, R., Rengaraj, S., Arabindoo, B. and Murugesan, V. (2003), Cashewnut sheath carbon: A new sorbent for defluoridation of water. *Indian Journal of Chemical Technology*, **10** (2), 217-222.

Abstract: Cashewnut sheath, an agricultural waste discarded largely in India is identified for the preparation of an effective sorbent or fluoride removal. Experiments were conducted for the sorption of fluoride from aqueous solution using activated carbon from cashewnut sheath (CSC) in two phases, namely, batch studies and column studies. The influence of pH, adsorbent dose, particle size and contact time was investigated in batch studies. The adsorption process follows Freundlich adsorption isotherm. Continuous flow experiments in fixed bed columns packed with activated carbon were carried out in older to assess the feasibility of this for field applications, The carbon bed after exhaustion was regenerated with 0.1 N hydrochloric acid. The influence of initial concentration of fluoride ion, flow rate, particle size and concentration of the regenerant on the performance of the column was studied. Comparative study was conducted with commercially available carbon impregnated with 2% aluminium sulphate solution. The results revealed that CSC is found to be active and efficient for fluoride removal.

Keywords: Active Carbons, Adsorption, Shells

? Unnikrishnan, E.K., Basu, A.K., Chattopadhyay, N. and Maiti, B. (2003), Removal of arsenic from water by ferrous sulphide. *Indian Journal of Chemical Technology*, **10** (3), 281-286.

Abstract: A simple, rapid and cost-effective method for the removal of arsenic from water has been developed. Both As(III) and As(V) could be removed quantitatively by treating the polluted water with ferrous sulphide in granular form. Ferrous sulphide is cheap and easily available commercially and very effective for this purpose. Various factors influencing the treatment procedure have been studied and the mechanism of the removal process has been discussed. It has the additional advantage that the heavy metals like Pb, Hg, Cu, etc. that form insoluble sulphide are also removed along with arsenic. Analysis of arsenic content in the treated water by spectrophotometry and neutron activation analysis suggests that the method could successfully bringdown the concentration of arsenic below the permissible limit of 10 mug/L as recommended by WHO.

Keywords: Adsorption, Amorphous Iron Hydroxide, Analysis, As(V), Ferrous, Heavy Metals, Removal, Treatment, Water

? KimTae, H., Vijayalakshmi, S., Jin, S.S. and Dong, K.J. (2003), Carbon molecular sieves (CMS) from coconut shell by carbonization and carbon dioxide activation. *Indian Journal of Chemical Technology*, **10** (3), 298-304.

Abstract: Carbon Molecular Sieves (CMS) are specially treated micro porous adsorbents derived from carbonaccous precursors. Due to the molecular sieving property, coupled with thermal, mechanical and chemical stability under acidic/alkaline conditions, CMS have found many applications in the field of difficult gas, as well as liquid separations from their mixtures, CMS have been successfully synthesized from a wide variety of carbonaceous materials, by the carbonization followed by carbon dioxide or steam activatiom The effect of carbonization temperature and activation temperature on the surface area as well as pore volume, calculated using the carbon dioxide adsorption data at room temperature is studied. The most suitable carbonization temperature is found to be in the range 750-850degreesC, beyond which the surface area is found EO decrease due to sintering of the particles at high temperature. The samples prepared were found to give good adsorption selectivity for CO2 over H-2 or N-2. Kinetic and equilibrium adsorption data for gases like, N-2, O-2, H-2, CH4 and equilibrium adsorption of selected organic vapours are also reported.

Keywords: Adsorbents, Adsorption, Carbon, Carbon Dioxide, CO2, Coke Deposition, Equilibrium, H2, High Temperature, Kinetic, Molecular Sieves, O2, Pore, Temperature

? Singh, K. and Mohan, S. (2003), Kinetic study of crystal colouration during crystallization of sucrose. *Indian Journal of Chemical Technology*, **10** (4), 386-390.

Abstract: Although, existence of the coloured syrup layer surrounding the crystal surface is fait accompli, there is no definite explanation for the colour inside the crystal. In the present investigation, therefore, whether the colour is adsorbed or occluded or both, three types of artificial coloring matters’ caramel, iron-phenol complex and reducing sugar-amino acid browning reaction products are used to examine the effect of each on crystal colouration. By static and dynamic analysis, it is concluded that different colourants have different affinities for the crystals and cause different colouration under the same condition; viz caramel is the slowest, RS-AA browning product is intermediate and the iron-phenol complex is the fastest. At a slow rate of the crystallization (k=0.86-6.05x10(5) mg/m(2)/h), colouration is caused mainly by adsorption. However, when the rate increases, this may also be accompanied by another mechanism such as occlusion, although adsorption is still in effect. The quantity of colouration decreases with rise in crystallization temperature, the extent of which decreases with increase in super-saturation. By reducing the amount of these colourants of higher affinity which are present in the mother liquor and under varying crystallization conditions, different effective measures may be adopted to overcome the colouration. Thermodynamic data of the crystal colouration are also evaluated and data indicate a loss in the entropy change in the process.

Keywords: Adsorption, Analysis, Complex, Crystals, Iron, Kinetic, Occlusion, Temperature, Thermodynamic, Thermodynamic Data

? Mondal, B.C. and Das, A.K. (2003), Microwave-assisted synthesis of a new resin functionalized with adenine moiety and its application for the separation of zinc and cadmium in microwave-digested industrial sludge samples. *Indian Journal of Chemical Technology*, **10** (5), 489-494.

Abstract: A procedure for simultaneous preconcentration and separation of traces of Zn(II) and Cd(II) has been described. It is based on the sorption on a chelating resin containing adenine moiety which has been synthesized by using microwave irradiation. The resulting resin was characterized by elemental analyses, infrared spectra and thermogravimetric analyses. The exchange capacity of the resulting resin for Zn(II) and Cd(II) was found to be 0.25 and 0.30 mmol g(-1) respectively at pH 1.0. In the column operation,the recoveries of Zn(II) and Cd(II) were 98.7+/-3.5 and 97.5+/-2.1% respectively at 97.5% confidence level for both. The detection limits were found to be 4.4 ng mL(-1) for Zn(II) and 9.0 ng mL(-1) for Cd(II). The loading half life (t(1/2)) periods were 14 and 12 min for Zn(II) and Cd(II) respectively. The mutual separation of Zn(II) and Cd(II) was carried out as a function of eluting agents. The reliability of the method has been tested by analysing NIES certified pond sediment sample. The developed method has been successfully applied in analysing industrial sludge samples.

Keywords: Atomic-Absorption Spectrometry, Biological Samples, Cadmium, Capacity, Cd(II), Chelating Resin, Enrichment, Exchange, Exchanger, Immobilized Amberlite XAD-2, Infrared, Infrared Spectra, Irradiation, Lead(II), Metal-Ion Uptake, pH, Preconcentration, Resin, Sediment, Sorption, Synthesis, Zinc

? Rathi, A.K.A. and Puranik, S.A. (2003), Treatment of wastewater from dyes manufacture using adsorption. *Indian Journal of Chemical Technology*, **10** (6), 670-679.

Abstract: In a typical wastewater treatment flow sheet used by several industrial units in India, various stages of treatment include the primary treatment-oil/grease removal and neutralization, followed by the secondary treatment-chemical/biological oxidation and clarification, and the tertiary treatment-adsorption onto activated carbon. The neutralization of the wastewater with acid/milk of lime increases the concentration of total dissolved solids, which adversely affects the activity of microorganisms during biological oxidation process. To overcome this limitation, adsorption is proposed in the first stage of treatment and other stages could follow depending on the quality of the wastewater. Experiments were carried out on wastewater samples from different plants manufacturing dyes using adsorbents-activated carbon, fly ash, bentonite and lignite. The effectiveness of adsorbents in reducing chemical oxygen demand (COD) and colour was evaluated. The results of COD reduction are fitted into different models available in the literature. A model for predicting COD equilibrium values is proposed. Sorption kinetics and rate of reduction of COD over time are also discussed.

Keywords: Activated Carbon, Adsorbents, Adsorption, Carbon, Chemical Oxygen Demand, COD, Disperse Dye, Dyes, Equilibrium, Fly Ash, India, Kinetics, Limitation, Literature, Microorganisms, Model, Models, Oxidation, Plants, Reduction, Removal, Sorption, Sorption Kinetics, Stage, Total Dissolved Solids, Treatment, Wastewater, Wastewater Treatment

? Jadhav, D.N. and Vanjara, A.K. (2004), Removal of phenol from wastewater using sawdust, polymerized sawdust and sawdust carbon. *Indian Journal of Chemical Technology*, **11** (1), 35-41.

Full Text: [2004\Ind J Che Tec11, 35.pdf](2004/Ind%20J%20Che%20Tec11,%2035.pdf)

Abstract: The adsorption of phenol on sawdust, polymerized sawdust and sawdust carbon was investigated to assess the possible use of these adsorbents for the processing of phenolic wastewater. The influence of various factors such as initial concentration. agitation speed, and amount of adsorbent, temperature and pH on the adsorption capacity has been studied. The percentage removal of phenol is observed to increase, with the increase in initial concentration of phenol. With increase in temperature the adsorption of phenol decreases, indicating exothermic nature of the reaction. Adsorption isothermal data could be interpreted by the Langmuir and Freundlich equations, Kinetic data has been studied, using pseudo-second order equation for understanding the reaction mechanism. Thermodynamic parameters such as DeltaG, DeltaH and DeltaS for the adsorption process were calculated.

Keywords: Aqueous-Solution, Oxalic-Acid, Adsorption, Sorption, Dye, Peat, Adsorbents

? Jadhav, D.N. and Vanjara, A.K. (2004), Adsorption kinetics study: Removal of dyestuff effluent using sawdust, polymerized sawdust and sawdust carbon-II. *Indian Journal of Chemical Technology*, **11** (1), 42-50.

Full Text: [2004\Ind J Che Tec11, 42.pdf](2004/Ind%20J%20Che%20Tec11,%2042.pdf)

Abstract: The kinetics study of removal of acidic, basic and disperse dyes on sawdust, polymerized sawdust and sawdust carbon were carried out by adsorption technique. The factors affecting the rate processes involved in the removal of different dyes e.g. initial dye concentration, agitation speed, mass of adsorbent, temperature, have been studied. The adsorption process followed first order rate kinetics. The adsorption data generally fit the Lagergren equation and the intraparticle diffusion rate equation from which adsorption rate constants, diffusion rate constants and diffusion coefficients were determined. Intraparticle diffusion was found to be the rate-limiting step. These kinetic parameters were compared for various dyes under different conditions.

Keywords: Aqueous-Solution, Activated Carbon, Basic-Dyes, Fly-Ash, Sorption, Equilibrium, Adsorbents, Color

? Roy, P.K., Rawat, A.S., Choudhary, V. and Rai, P.K. (2004), Removal of heavy metal ions using polydithiocarbamate resin supported on polystyrene. *Indian Journal of Chemical Technology*, **11** (1), 51-58.

Full Text: [2004\Ind J Che Tec11, 51.pdf](2004/Ind%20J%20Che%20Tec11,%2051.pdf)

Abstract: Polydithiocarbamate chelating resin supported on XAD-2 type polystyrene was synthesised by emulsion polymerisation of styrene and its subsequent reaction with carbondisulphide in alkaline medium. The polydithiocarbamate resin was characterised by elemental analysis, thermal studies and IR studies. The sorbent was evaluated for its analytical characteristics and the optimum sorption conditions for metals like Cu, Ni, Pb, Fe, As and Mn were determined in order to assess the efficiency of the resin. The sorption capacity was considerably higher when compared to other conventional chelating polymers. The sorption kinetics was fairly rapid as apparent from the loading t1/2 values, indicating a better accessibility of the chelating sites.

Keywords: Chelating Resin, Dithizone, Polymers, Zinc(II), Beads, Sites, Trace

? Chettiar, K.S. and Sreekumar, K. (2004), Metal complexation on functionalised polymer supports - An adsorption/complexation phenomenon.  *Indian Journal of Chemical Technology*, **11** (1), 59-66.

Full Text: [2004\Ind J Che Tec11, 59.pdf](2004/Ind%20J%20Che%20Tec11,%2059.pdf)

Abstract: The present study is aimed at preparing polymer metal complexes of Co(II) and Cu(II) under controlled conditions of concentration, time, temperature and pH The complexes are derived from DVB crosslinked polystyrene and poly(hydroxyethyl methacrylate) supported thiosemicarbazone-transition metal interaction. Crosslinked polymer ligand beads with definite porosity can adsorb metal ions. The question whether metal complexation is a case of adsorption and coordination, is investigated. Kinetics and thermodynamics of adsorption of metal ions on the polymeric ligand with proper surface structures is determined. The equilibrium metal intake by 10 and 15% crosslinked resins at constant temperature was utilised to construct Langmuir and Freundlich adsorption isotherms. The influence of temperature on the extent of adsorption was studied by plotting isotherms at different temperatures and calculating different thermodynamic parameters.

Keywords: Adsorption, Adsorption Isotherms, Asymmetric Epoxidation, Beads, Catalysts, Co(II), Cu(II), Equilibrium, Freundlich, Freundlich Adsorption Isotherms, Isotherms, Kinetics, Langmuir, Metal Ions, pH, Porosity, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics

? Aydin, A.H. and Yavuz, O. (2004), Removal of acid red 183 from aqueous solution using clay and activated carbon. *Indian Journal of Chemical Technology*, **11** (1), 89-94.

Full Text: [2004\Ind J Che Tec11, 89.pdf](2004/Ind%20J%20Che%20Tec11,%2089.pdf)

Abstract: The removal of acid red 183 from aqueous solution onto activated carbon, raw kaolinite and montmorillonite has been studied using an agitated batch adsorber. The adsorption isotherm data were fitted to Langmuir isotherm. Parameters of Langmuir isotherm were determined using adsorption data. The adsorption capacity was 1495, 111, 29 and 19 mg dye per g adsorbent for RAC (commercial activated carbon), HAC (activated carbon obtained from hazelnut), KC (raw kaolinite) and MC (montmorillonite) at 25°C respectively.

Keywords: Adsorption, Dyes

? Sekaran, G., Gnanamani, A. and Yogesh, P. (2004), Preparation of biocatalyst for the removal of dissolved organics in wastewater. *Indian Journal of Chemical Technology*, **11** (1), 95-102.

Full Text: [2004\Ind J Che Tec11, 95.pdf](2004/Ind%20J%20Che%20Tec11,%2095.pdf)

Abstract: Xenobiotic compounds are used in considerable quantities in leather industries besides organic and inorganic compounds. These compounds resist biological degradation and thus they remain present in the treated wastewater in the unaltered molecular configurations. Immobilization of organisms in carrier matrices protects them from shock load applications and from the toxicity of chemicals in bulk liquid phase. Rice Bran based Activated Carbon (RBAC) has been considered in the present study as the carrier matrix for the immobilization of Bacillus sp. isolated from Effluent Treatment Plant (ETP) employed for the treatment of wastewater containing sulphonated phenolic (SP) compounds. The influence of temperature, pH, concentration, particle size, mass of the adsorbent were observed on the immobilization behaviour of Bacillus sp. in RBAC. The percentage immobilization of Bacillus sp. was maximum at pH 7.0, temperature 20°C and for particle size 300μ. Enthalpy, free energy and entropy of adsorption were -46.9 kj mole-1, -1.187 kj mole-1 and -161.36 J °K-1 mole-1 respectively at pH 7.0, temperature 30°C and particle size 600μ. Higher values of ΔH° indicate the firm bonding of the Bacillus sp. in RBAC.

Keywords: Activated Carbon, Pseudomonas-Putida, Continuous Degradation, Mixed Culture, Adsorption, Phenol, 4-Chlorophenol, Microorganisms, Interface, Proteins

? Singh, I.B. and Prasad, M. (2004), Study on the fluoride removal characteristics of mineral (fluorapatite). *Indian Journal of Chemical Technology*, **11** (2), 185-189.

Full Text: 2004\Ind J Che Tec11, 185.pdf

Abstract: The effectiveness of low grade fluorapatite bearing mineral on fluoride removal has not been examined earlier. For identification of such mineral, a preliminary assessment of performance of mineral is essential in order to know which aspect is necessary to carry out further research for development of mineral based defluoridation technology. In this study batch adsorption study was performed to evaluate the fluoride removal potential of low cost rock phosphate (fluroapatite) mineral at pH 4, 5 and 6. The optimum dose was determined to be 1.5, 2.5 and 3.5 g mineral at pH 4, 5 and 6, respectively. The first order adsorption rate constants derived by Lageraren equation at different pH, clearly indicates the fast removal kinetics at pH 4. The comparatively high solubility of mineral and an increase of calcium concentration at pH 4 appears to be the main reason for fast removal reaction. There was no effect of mineral quantity on fluoride removal after solution pH became alkaline. The various aspects of the study including, recyclability of mineral are discussed.

Keywords: Adsorption, Calcium, Defluoridation, Defluoridation Technology, Fluorapatite, Fluoride, Fluoride Removal, Kinetics, Lagergren Equation, Mineral, pH, Phosphate, Removal, Solubility

? Farooqui, M., Sultan, S., Farooqui, M. and Quadri, S.H. (2004), Adsorption studies of heavy metal ion by low cost agricultural by-products - Bajra powder. *Indian Journal of Chemical Technology*, **11** (2), 190-193.

Full Text: 2004\Ind J Che Tec11, 190.pdf

Abstract: The presence of heavy metals in the environment represent a very significant and long-term environmental hazard. Many industries such as electroplating industry, organic inorganic chemical, petrochemicals, fertilizer etc discharge effluent containing high level of metal ions. In the present paper, a study on the adsorption of Cu(II), Cr(VI), Fe(II) and Ni(II) by an agricultural by-product i.e. powder of Bajra was carried out. The effects of solution pH, initial concentration, adsorbent amount, temperature and contact time were studied. In batch experiments, adsorption of these metal ions increases with decrease in initial concentration of metal ion and adsorbent dosage. Measured values have been found to follow Langmuir and Freundlich adsorption isotherms.

Keywords: Adsorption, Adsorption Isotherms, Bajra Powder, Batch, Contact Time, Cost, Cr(VI), Cu(II), Environment, Freundlich, Freundlich Adsorption Isotherms, Heavy Metal, Heavy Metal Ion, Heavy Metals, Isotherms, Langmuir, Langmuir Adsorption Isotherm, Metal Ions, pH, Temperature

? Jadhav, D.N. and Vanjara, A.K. (2004), Adsorption equilibrium study: Removal of dyestuff effluent using sawdust, polymerized sawdust and sawdust carbon-I. *Indian Journal of Chemical Technology*, **11** (2), 194-200.

Full Text: 2004\Ind J Che Tec11, 194.pdf

Abstract: The adsorption equilibrium study of three different types of dyestuff effluent on the sawdust, polymerized sawdust and activated carbon prepared from sawdust has been studied. The applicability of the Langmuir and Freundlich equation has been tested for equilibrium data of which Freundlich isotherm model is found to be the most appropriate. From the equilibrium data it is observed that sawdust, polymerized sawdust and sawdust carbon are good adsorbents for removal of acidic, basic and disperse dyes from dyestuff effluents. The pH has significant influence on the adsorption. Acidic and disperse dyes show higher adsorption at higher pH, whereas, basic dyes show higher adsorption at lower pH.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Equilibrium, Carbon, Chromium(VI), Color Removal, Dye, Dyes, Dyestuff, Dyestuff Effluent, Equilibrium, Freundlich, Freundlich Equation, Freundlich Isotherm, Isotherm, Kinetics, Langmuir, Langmuir Equation, Model, pH, Polymerized Sawdust, Removal, Sawdust, Sawdust Carbon, Sorption, Waste-Waters

? Murthy, Z.V.P., Kaushik, G. and Suratwala, R. (2004), Treatment of oily water with human hair as a medium: A preliminary study. *Indian Journal of Chemical Technology*, **11** (2), 220-226.

Full Text: 2004\Ind J Che Tec11, 220.pdf

Abstract: Experiments are conducted to study the effect of human hair as an adsorbing medium for the separation of oil from water, both in free as well as in emulsified form. Effects of various parameters on the phenomenon are studied and inferences drawn, which is showing an unexpectedly high efficiency of the process. It is seen that at laboratory scale, the method is very efficient. It is nearly 100% efficient for free oil. However, the most intriguing thing observed is, its efficiency in separating emulsified oil that lied between 95 - 99%. Experiments are also conducted to study the phenomenon at the micro level. The phenomenon, as is clearly visible under the microscope, is selective physical adsorption. Also, the separation results obey Freundlich’s isotherm, thus confirming that the oil removal is due to selective adsorption. A critical point of view is kept throughout the experimentation and every care is taken to minimise the human as well as instrumental errors. Even if the process does not reduce the concentrations to micro levels, it can still reduce the cost drastically by reducing, the amount of demulsifying agents required. As the process is eco-friendly and does not require any, chemicals, it may lead to development of a new technique of separating oil-water emulsion, which is simpler.

Keywords: Adsorption, Cost, Development, Human Hair, Isotherm, Lead, Oil Water Emulsion, Removal, Water

? Kumar, P., Rayalu, S. and Dhopte, S.M. (2004), Flyash based zeolite-A: A suitable sorbent for lead removal. *Indian Journal of Chemical Technology*, **11** (2), 227-233.

Full Text: 2004\Ind J Che Tec11, 227.pdf

Abstract: High cost and difficulties in procurement of zeolites in India prohibits its widespread use for environmental remediation. This problem has been overcome in this investigation by usage of cost-effective flyash based zeolite-A (FAZ-A) using process developed by NEERI, which has been patented nationally and internationally. The usage of the new material for removal of lead has been studied and results obtained are-encouraging vis-a-vis commercially available zeolite-A. Pore diffusion co-efficient have been worked out and the Value obtained are in the range of 1.78 - 2.82 x 10(-11) cm(2)/s for different concentrations of lead. The rate constants have been derived using, Lagergren’s model indicating the reaction to be of 1st order. The linear plot suggested the applicability of Mckay’s model on mass transfer analysis to the system. The mass transfer co-efficient varies inversely with initial concentration. The data has been processed in accordance with Langmuir equation and fits well in the particular sorption model, showing the formation of monolayer coverage on zeolite surface with maximum adsorption capacity of 714.28 mg/g.

Keywords: Adsorption, Adsorption, Adsorption Capacity, Analysis, Aqueous-Solutions, Capacity, Cost, Diffusion, Flyash Based Zeolite, India, Lageraren’s Model, Langmuir, Langmuir Equation, Lead, Lead Removal, Mass Transfer, Mckay’s Model, Model, Remediation, Removal, Sorbent, Sorption, System, Water, Zeolite

? Bhatt, D.B., Bhatt, P.R., Prasad, H.H., Popat, K.M. and Anand, P.S. (2004), Removal of fluoride ion from aqueous bodies by aluminium complexed amino phosphonic acid type resins. *Indian Journal of Chemical Technology*, **11** (3), 299-303.

Full Text: [2004\Ind J Che Tec11, 299.pdf](2004/Ind%20J%20Che%20Tec11,%20299.pdf)

Abstract: Three resins, namely Purolite S940, Purolite S950 and Duolite ES 467 were studied for the removal of fluoride ion under different equilibrium conditions. The adsorption data of Purolite S940 and Purolite S950 closely fitted in Freundlich and Langmuir equations, respectively. Validity of the Lagergan equation for the sorption of fluoride ion was proved and the data showed that the process followed first order kinetics. The performance of Purolite S940 and Purolite S950 showed good promise for removing fluoride from water whereas the performance of Duolite ES467 was comparatively poor under dynamic conditions.

Keywords: Adsorption, Duolite ES467, Equilibrium, Fluoride, Fluoride Removal, Freundlich Equation, Kinetics, Lagergan Equation, Langmuir Equation, Purolite S940, Purolite S950, Removal, Resin, Sorption, Water

? Murugan, M. and Subramanian, E. (2004), An efficient and reversible sorptive removal of Arsenic(III) from aqueous solution by the biosorbent Cupressus Female Cone. *Indian Journal of Chemical Technology*, **11** (3), 304-308.

Full Text: [2004\Ind J Che Tec11, 304.pdf](2004/Ind%20J%20Che%20Tec11,%20304.pdf)

Abstract: Biosorbent Cupressus Female Cone (CFC) has been investigated for the sorptive removal of As(III) from aqueous solution both by batch and column mode techniques. Sorption process was found to be influenced appreciably by pH, temperature, initial concentration of As(III) and sorbent particle size and dosage. Also the sorption process was endothermic with a maximum sorption of 260.4 mg/g of As(III) at 30degreesC for an initial concentration of 800 mg/L at pH 10.0. It followed first order kinetics and the equilibrium sorption capacity data conformed to Langmuir isotherm. The pore diffusion and mass transfer coefficients of As(III) species were significant and contributive to the sorption rate. All these studies and characterisation of free and As(III)-loaded CFC materials by SEM, FTIR and XRD methods led to the suggestion of a plausible mechanism involving complex formation between the two components. The As(III)-CFC sorption system was further investigated by dynamic column study invoking Thomas model. Finally, the desorption studies revealed that the adsorbent CFC could be effectively regenerated by 0.1 M hydrochloric acid, making it a viable and reusable system for As(III) removal.

Keywords: Adsorption, Arsenic(III), Batch, Biosorbent, Capacity, Carbon, Complex, Cupressus Female Cone, Desorption, Diffusion, Equilibrium, First Order Kinetics, FTIR, Hydrochloric Acid, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Mass Transfer, Model, pH, Pore, Removal, Sem, Sorbent, Sorption, Sorptive Removal, System, Temperature, Thomas Model, XRD

? Goel, R., Kapoor, S.K., Misra, K. and Sharma, R.K. (2004), Removal of arsenic from water by different adsorbents. *Indian Journal of Chemical Technology*, **11** (4), 518-525.

Full Text: 2004\Ind J Che Tec11, 518.pdf

Abstract: Present study is carried out for the removal of As(III) from water using commonly available adsorbents Such as sand, from Yamuna river (Delhi), as well as from Ganga river (Kolkata), activated carbon, Hametite ore and sand -iron scrap mixture. All these adsorbents are used as received but sand and activated carbon which do not show much adsorption for As(III) are modified by treating with different metal ions in order to improve their adsorption efficiency. Results of the laboratory experiments under static conditions have confirmed that iron impregnated granular activated carbon (GAC), spherical activated carbon (SAC) as well as sand - iron scrap mixture have much promise as a medium for the removal of As(III) in drinking water. Various parameters like adsorbent dose, contact time, pH and arsenic concentration are optimized. A simple and economical domestic arsenic removal kit has been designed and successfully evaluated in the laboratory using sand-iron scrap Mixture as media for the removal of arsenic from water.

Keywords: Activated Carbon, Adsorbents, Adsorption, Arsenic Removal, Carbon, Coagulation, Contact Time, Drinking Water, GAC, Ground-Water, Hametite Ore, Iron, Metal Ions, Oxidation, Oxide-Coated Sand, Ph, Removal, Sand, Water

? Bhardwaj, S. and Khan, M.A. (2004), Decolourization of pulp and paper mill effluent using polyvinyl chloride. *Indian Journal of Chemical Technology*, **11** (5), 607-611.

Full Text: [2004\Ind J Che Tec11, 607.pdf](2004/Ind%20J%20Che%20Tec11,%20607.pdf)

Abstract: Decolourization of pulp and paper mill wastewater better known as black liquor using low cost adsorbents is under investigation over the years. Colour of the black liquor is aesthetically harmful to the environment as it contains certain toxic and xenobiotic compounds. Polyvinyl chloride (PVC) is water insoluble, low crystalline polymer and cost friendly. Alkalies and acids present in wastewater do not affect the basic structure of this linear macromolecule. Physicochemical method for decolourization was adopted for process simplification. Contact-time, effect of dosages, adsorption dynamics and adsorption isotherms were few parameters examined for the study. Moderate to fair results were obtained rendering PVC as a substitute to some high-cost polymers used as adsorbents. The probable interactions between chromophoric components of black liquor and PVC has been discussed.

Keywords: Adsorbents, Adsorption, Adsorption Isotherms, Black Liquor, Compounds, Cost, Decolourization, Environment, FTIR, Isotherms, Paper Mill Effluent, Polymers, Polyvinyl Chloride, Wastewater, Water

? Chakradhar, B. and Shrivastava, S. (2004), Colour removal of pulp and paper effluents. *Indian Journal of Chemical Technology*, **11** (5), 617-621.

Full Text: [2004\Ind J Che Tec11, 617.pdf](2004/Ind%20J%20Che%20Tec11,%20617.pdf)

Abstract: The paper industry requires large volumes of process water of high purity and generate equally large volumes of waste water from digestion process, which is highly coloured. The removal of colour from paper mill waste water is one of the major environmental problems, because of the difficulty of treating such water by conventional methods. The present study was undertaken for removal of colour from paper mill effluents using waste sludge from ETP as an adsorbent, with heat treatment. The operating variables studied were effluent concentration, adsorbent dosage and contact time.

Keywords: Adsorption, Coloured Effluent, Contact Time, Contact Time and Heat Treatment, ETP Sludge, Removal, Treatment, Water

? Dey, R.K., Acharya, S., Samal, S. and Ray, A.R. (2004), Studies of metal ion uptake behaviour of formaldehyde condensed resins of phenolic Schiff bases derived from the reaction of 4,4’-diaminodiphenyl and 4,4’-diaminodiphenylmethane with o-hydroxybenzaldehyde. *Indian Journal of Chemical Technology*, **11** (5), 695-703.

Full Text: 2004\Ind J Che Tec11, 695.pdf

Abstract: The metal ion uptake characteristics of two new chelating resins, o-HB-DDM-HCHO and o-HB-DD-HCHO, were examined towards transition metal ions like Cu2+, Ni2+ and UO22+ under both competitive and non-competitive conditions. The resin o-HB-DDM-HCHO was found to be more effective in removing metal ions in comparison to resin o-HB-DD-HCHO. Preferential adsorption of Cu2+ by both the resins was observed from the mixture of salt solution. Elution of the sorbed metal ions using dilute HCl resulted in removal of nearly 30-40% of the loaded Cu2+ and 34-45% of loaded UO22+ from the resin column.

Keywords: Adsorption, Adsorption, Cadmium(II), Chelating Resins, Comparison, Cu2+, Elution, Formaldehyde, Hydroxyacetophenone, Metal Ion, Metal Ions, Ni2+, Preconcentration, Removal, Resin, Schiff Bases, Separation, Spectrometry, Trace Amounts, Transition Metal Ions, Water Samples

? Vyas, R.K., Shashi and Kumar, S. (2004), Determination of micropore volume and surface area of zeolite molecular sieves by D-R and D-A equations: A comparative study. *Indian Journal of Chemical Technology*, **11** (5), 704-709.

Full Text: [2004\Ind J Che Tec11, 704.pdf](2004/Ind%20J%20Che%20Tec11,%20704.pdf)

Abstract: Dubinin-Astakhov (D-A) equation is used for determining the micropore volume and surface area of zeolite molecular sieves (ZMS) by using physisorption measurements. Likewise, Dubinin-Radushkevich (D-R) equation is used for the estimation of these parameters for carbon molecular sieves (CMS), and, unlike D-A equation it does not require the estimation of the exponent n. In this paper, surface area and micropore volume of 13X molecular sieves (MS) have been determined by using both D-A and D-R equations. The results by both equations are in very good agreement. Therefore, D-R equation may also be used for estimation of these parameters because its application is simple and easier.

Keywords: 13X, 13X Molecular Sieves, Adsorption, Carbon, Carbons, D-A Equation, D-R Equation, Determination, Dubinin-Radushkevich, Dubinin-Radushkevich Equation, Micropore Volume, Molecular Sieves, Physisorption Measurements, Zeolite, Zeolite Molecular Sieves

? Varghese, S., Vinod, V.P. and Anirudhan, T.S. (2004), Kinetic and equilibrium characterization of phenols adsorption onto a novel activated carbon in water treatment. *Indian Journal of Chemical Technology*, **11** (6), 825-833.

Full Text: [2004\Ind J Che Tec11, 825.pdf](2004/Ind%20J%20Che%20Tec11,%20825.pdf)

Abstract: The present study envisages the use of an aquatic plant material, water hyacinth to prepare a novel activated carbon for the removal of phenol, p-chlorophenol and p-nitrophenol from simulated wastewaters by adsorption process. The effect of pH, contact time, initial concentration of adsorbate and temperature on removal process was investigated. The maximum removal of phenols from their aqueous solutions occurred at pH 6.0. The applicability of the intraparticular mass transfer diffusion kinetic model in each case of phenol, p-chlorophenol and p-nitrophenol was studied separately at different concentrations and temperatures. Kinetic parameters as a function of concentration and temperature were evaluated to predict the nature of adsorption. The adsorption process was found to be exothermic and the adsorption of phenols was found to follow the order: p-nitropherol > p-chlorophenol > phenol. Equilibrium adsorption data were correlated with Langmuir, Freundlich and Redlich-Peterson adsorption isotherm models. Freundlich isotherm model was found applicable to represent the adsorption data for all three adsorbates. The maximum adsorption capacity of activated carbon was found to be 1.20, 1.28 and 1.35 mmol/g for phenol, p-chlorophenol and p-nitrophenol respectively. Adsorbed phenols on activated carbon were recovered (91.5-96.3%) using 0.05 M sodium hydroxide. The petroleum refinery industry wastewater sample was treated by activated carbon to demonstrate its efficiency in removing phenols from wastewaters.

Keywords: Adsorption, Kinetics, Activated Carbon, Phenols, Water Treatment, Step Steam Pyrolysis, Waste-Water, Sorption, Removal, Adsorbent, Silica, Husks, Oxide, Acid

? Chanda, M. and Pillay, S.A. (2005), A novel fibre-coated sorbent for rapid removal of heavy metals from wastewater. Sorption of zinc(II) from dilute aqueous solutions in the presence of high concentrations of common salts. *Indian Journal of Chemical Technology*, **12** (2), 156-163.

Full Text: [2005\Ind J Che Tec12, 156.pdf](2005/Ind%20J%20Che%20Tec12,%20156.pdf)

Abstract: The commercial acrylic fibre “Cashmilon” was partially hydrolyzed to convert a fraction of its nitrile (-CN) groups to carboxylic acid (-COOH) groups and then coated with polyethylenimine (PEI) resin and cross-linked with glutaraldehyde to produce a novel gel-coated fibrous sorbent with multiple functionalities of cationic, anionic and chelating types, and significantly faster sorption kinetics than bead-form sorbents. The sorption properties of the fibrous sorbent were measured using Zn(II) in aqueous solution as the sorbate to determine the effects of pH and the presence of common ions in the solution on the sorption capacity. The rate of sorption on the gel-coated fibre was measured in comparison with that on Amberlite IRA-68 weak-base resin beads, to demonstrate the marked difference between fibre and bead-form sorbents in their kinetic behaviour.

Keywords: Acrylic Fibre, Aqueous Solutions, Beads, Capacity, Carboxylic Acid, Comparison, Fast Kinetics, Heavy Metals, High-Capacity, Ion-Exchange Resin, Kinetic, Kinetics, Model, pH, Poly Acrylonitrile, Polyethylenimine, Removal, Resin, Silica, Sorbent, Sorption, Sorption Kinetics, Uranium, Wastewater, Zinc Ion, Zinc(II)

? Okieimen, F.E., Okieimen, C.O. and Ojokoh, F.I. (2005), Rubber seed shell carbon as sequestrant of heavy metals and organic compounds from aqueous solution. *Indian Journal of Chemical Technology*, **12** (2), 181-186.

Full Text: [2005\Ind J Che Tec12, 181.pdf](2005/Ind%20J%20Che%20Tec12,%20181.pdf)

Abstract: Powdered activated carbon was prepared from ammonium chloride activated rubber seed shell at 500°C and characterized in terms of pH, bulk density, surface area, abrasion resistance and total surface charge. The sorption behaviour of zinc ions and alcohols (methanol, ethanol and n-propanol) on the shell carbon was studied. The removal efficiency of the metal ions was found to depend upon the initial metal ion concentration, with efficiency decreasing with increase in concentration of the metal ions. By fitting the equilibrium sorption data obtained into the Langmuir isotherm equation, values for maximum metal ions binding capacity and affinity (binding) constant of 0.425 mmol/g and 2.614 respectively were determined. The sorption data also fitted the Freundlich isotherm equation, but with relatively lower correlation coefficient, and values for the coefficient and exponent of the isotherm equation of 0.19 and 0.59 respectively were determined. The removal efficiency of the alcohols was measured in terms of changes in the chemical oxygen demand of solutions containing various volume fractions of the alcohols before and after treatment with the shell carbon. Removal efficiency was generally lower than 30%: and corresponded to about 5.82 mg/L/g decrease in chemical oxygen demand; and was highest for n-propanol and lowest for methanol.

Keywords: Acid, Activated Carbon, Activated Carbons, Adsorbents, Adsorption, Adsorption Capacity, Agricultural By-Products, Alcohols, Cadmium, Capacity, Carbon, Chemical Oxygen Demand, Compounds, Copper, Cost, Density, Equilibrium, Freundlich, Freundlich Isotherm, Heavy Metals, Isotherm, Langmuir, Langmuir Isotherm, Metal Ions, Organic Compounds, pH, Powdered Activated Carbon, Removal, Rubber Seed Shells, Sorption, Treatment, Water, Zinc, Zinc Ions

? Jeena, V.R. and Janardanan, C. (2005), Copper and thorium selective new chelating, ion exchange resin of mandelic acid. *Indian Journal of Chemical Technology*, **12** (2), 225-228.

Full Text: [2005\Ind J Che Tec12, 225.pdf](2005/Ind%20J%20Che%20Tec12,%20225.pdf)

Abstract: A new copper and thorium selective chelating ion exchanger has been synthesized by condensing mandelic acid with formalin (37%) under alkaline condition using resorcinol as cross-linking agent. The characterization of the resin was done by determining the moisture content of the resin, distribution coefficients for various metal ions, base exchange capacity, pH titration and IR spectra. The sorption and desorption cycles have been examined using a column packed with the resin without any loss of column performance, which indicates the possibility for its reuse. The developed column technique has been used for the binary separations Mg2+/Cu2+, Zn2+/Pb2+, Mg2+/Pb2+, Zn2+/Th4+, Al3+/Th4+, Mg2+/Al3+ and Mg2+/Ca2+. The separation performed on the ion exchange column is very important for the environmentalists.

Keywords: Base Exchange Capacity, Binary Separation, Capacity, Characterization, Chelating Ion-Exchanger, Column Technique, Complexes, Copper, Desorption, Distribution Coefficient, Exchange, Ion Exchange, Mandelic Acid, Metal Ions, pH, pH Titration, Polymers, Resorcinol Formaldehyde, Reuse, Sorption, Titration

? Karthikeyan, G., Pius, A. and Alagumuthu, G. (2005), Fluoride adsorption studies of montmorillonite clay. *Indian Journal of Chemical Technology*, **12** (3), 263-272.

Full Text: [2005\Ind J Che Tec12, 263.pdf](2005/Ind%20J%20Che%20Tec12,%20263.pdf)

Abstract: Batch adsorption studies were conducted to determine the effects of contact time and temperature on fluoride removal by montmorillonite clay at neutral pH. The adsorption of fluoride was studied at four different temperatures, viz. 30, 40, 50 and 60°C. The kinetics of adsorption as well as adsorption isotherms at different temperatures were studied. Adsorption obeyed both Langmuir and Freundlich isotherm models. The percentage of fluoride removed increased with time and reached an optimum level at 50(th) min. The material with particle size of 75 microns registered maximum percentage of fluoride adsorption, compared to the other particle sizes. Thermodynamic studies revealed that the adsorption of fluoride by montmorillonite is an endothermic process, showing increase in sorption at higher temperature. The negative values of ΔG° indicate the spontaneity of the sorption process. Adsorption takes place on the surface as well as through intraparticle diffusion pattern of the adsorbent material. SEM studies revealed the morphological characteristics of the untreated sorbents as well as the changes in the treated sorbents. X-ray diffraction studies also confirmed the deposition of fluoride on the surface of the clay material. FTIR studies showed the involvement of hydroxyl group present on the surface in the adsorption interaction.

Keywords: Adsorption, Fluoride Removal, Montmorillonite Clay, Langmuir Isotherm, Freundlich Isotherm, Aqueous-Solutions, Activated Carbon, Removal, Water, Defluoridation, Dyes

? Das Purakayastha, P., Pal, A. and Bandyopadhyay, M. (2005), Adsorbent selection for anionic surfactant removal from water. *Indian Journal of Chemical Technology*, **12** (3), 281-284.

Full Text: [2005\Ind J Che Tec12, 281.pdf](2005/Ind%20J%20Che%20Tec12,%20281.pdf)

Abstract: In the present study, an attempt was made to find out a low cost adsorbing material for the removal of anionic surfactant (AS) from water. Sodium dodecyl sulphate (SDS) has been selected as a a representative member of AS. Adsorbents such as granular activated charcoal, waste tire rubber granules, wood charcoal, and silica gel were tried. Kinetic profiles of removal of SDS were generated for all materials to assess the equilibrium time. The percentage of SDS removal at 7h equilibrium time was 96% for granular activated charcoal, 96.5% for waste tire rubber granules, 88% for wood charcoal and 92% for silica gel. Equilibrium studies were carried out for all materials to assess the adsorption equilibrium model that they followed. The correlation coefficients were determined by linear regression analysis, and compared. Maximum adsorption capacities (Q(max)) for granular activated charcoal, waste tire rubber granules, wood charcoal and silica gel, were found to be 3.750, 4.164, 5.170 and 5.181 mg/g, respectively. The removal efficiency, maximum adsorption capacity and cost were the guiding parameters for the selection of the adsorbent in the present study. Considering all factors waste tire rubber granule was chosen as the best adsorbent for AS removal. The physical or chemical characteristics of the rubber granules were reported.

Keywords: Adsorbent, Adsorbent Selection, Adsorbents, Adsorption, Adsorption Capacity, Analysis, Anionic Surfactant, Capacity, Charcoal, Cost, Equilibrium, Equilibrium Model, Kinetic, Model, Removal, Rubber Granules, Silica, Sodium Dodecyl Sulphate, Water

? Sharma, A. and Bhattacharyya, K.G. (2005), Utilization of a biosorbent based on *Azadirachta indica* (Neem) leaves for removal of water-soluble dyes. *Indian Journal of Chemical Technology*, **12** (3), 285-295.

Full Text: [2005\Ind J Che Tec12, 285.pdf](2005/Ind%20J%20Che%20Tec12,%20285.pdf)

Abstract: A biosorbent is developed from *Azadirachta indica* (Neem) leaves in the form of a finely ground dried powder (53-74 μm). The powder was used to remove three water-soluble dyes, viz., brilliant green, congo red and methylene blue from aqueous medium. The adsorptive interactions were tested under varying conditions of concentration of the dyes, amount of adsorbent, pH, and temperature. It was found that 670, 1000 and 2000 mg respectively of the powder could remove almost 100 % of the dyes from 1 L of water containing 10, 20 and 25 mg of brilliant green, congo red and methylene blue dyes, respectively. The interactions followed pseudo first order kinetics. The Langmuir monolayer adsorption capacity had values of 133.69, 72.38 and 8.76 g kg-1 for brilliant green, congo red and methylene blue. The adsorption of brilliant green and methylene blue on neem leaf powder (NLP) was endothermic with mean Delta H values of 12.12 and 9.40 kJ mol-1 respectively while that of congo red was exothermic with mean Delta H value of -12.75 kJ mol-1.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Aqueous Medium, Aqueous-Solution, Azadirachta Indica, Biosorbent, Brilliant Green, Capacity, Color Removal, Concentration, Congo Red, Congo-Red, Dyes, Dyestuffs, Endothermic, Equilibrium, Exothermic, First Order, First Order Kinetics, Interactions, Kinetics, Langmuir, Langmuir Monolayer, Leaf, Leaves, Metal, Methylene Blue, Methylene Blue, Monolayer, Monolayer Adsorption, Neem Leaf Powder, Neem Leaf Powder (NLP), Order, pH, Powder, Pseudo First Order Kinetics, Pseudo-First-Order, Removal, Sorption, Temperature, Value, Waste, Water, Water Soluble Dyes, Water-Soluble Dyes

? Dutta, N.N. and Saikia, M.D. (2005), Adsorption equilibrium of 7-aminodeacetoxy cephalosporanic acid-cephalexin mixture onto activated carbon and polymeric resins. *Indian Journal of Chemical Technology*, **12** (3), 296-303.

Full Text: [2005\Ind J Che Tec12, 296.pdf](2005/Ind%20J%20Che%20Tec12,%20296.pdf)

Abstract: The adsorption of 7-aminodeacetoxy cephalosporanic acid (7-ADCA) - cephalexin binary mixture in aqueous solution has been studied using polymeric resins of two different types as well as activated carbon. The adsorption intensity was found to be strongly dependent on the aqueous phase pH and this dependence could be interpreted from a model for neutral species adsorption in all cases. Single-solute isotherms for 7-ADCA and cephalexin were correlated with the Langmuir, Freundlich and Redlich-Peterson isotherm models, the Langmuir model being found to provide the best fit of the experimental data. The differences in adsorption affinities of the solute obtained for different adsorbents were interpreted from sorbent surface chemistry and morphological structure. Experimental binary-solute adsorption isotherms were compared with four different types of binary-solute Langmuir models using single-solute parameters. The results showed that the difference in saturation capacities affected the adsorption equilibrium. Furthermore, three types of binary-solute Langmuir models were converted into the kinetic form and one of them was used to calculate the association rate constants of 7-ADCA and cephalexin from experimental data. The adsorption rate curves for 7-ADCA and cephalexin appear to be typical of the first order kinetics.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Equilibrium, Adsorption Isotherm, Adsorption Isotherms, Affinity-Chromatography, Amino-Acids, Beta-Lactam Antibiotics, Carbon, Cephalosporinic Acid, Equilibrium, First Order Kinetics, Freundlich, Isotherm, Isotherm Models, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Model, Liquid-Chromatography, Model, Models, Peptides, Performance, pH, Polymeric Resin, Polystyrene, Prediction, Semisynthetic Cephalosporins, Sorbent, Sorbents

? Ramadevi, A. and Srinivasan, K. (2005), Agricultural solid waste for the removal of inorganics: Adsorption of mercury(II) from aqueous solution by Tamarind nut carbon. *Indian Journal of Chemical Technology*, **12** (4), 407-412.

Full Text: [2005\Ind J Che Tec12, 407.pdf](2005/Ind%20J%20Che%20Tec12,%20407.pdf)

Abstract: The adsorption of Hg(II) on modified tamarind nut carbon (Bicarbonate treated tamarindnut carbon - BTNC) was investigated. to assess the possible use of this adsorbent for the processing of mercury removal from wastewater. The influence of various factors such as agitation time, pH and carbon dosage on the adsorption capacity has been studied. Adsorption isothermal data could be interpreted by Langmuir and Freundlich equations. In order to understand the reaction mechanism, kinetic data has been studied using reversible first order rate equation.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Capacity, Carbon, First Order Kinetics, Freundlich, Hg(II), Kinetic, Langmuir, Langmuir and Freundlich Isotherm, Mercury(II), Mercury(II) Adsorption, pH, Reaction Mechanism, Removal, Sorption, Tamarind Nut Carbon, Wastewater

? Singh, B.K., Kumar, D.N. and Garg, B.S. (2005), Solid phase extraction of lead using modified cellulose in natural, wastewater and egg samples. *Indian Journal of Chemical Technology*, **12** (4), 413-418.

Full Text: [2005\Ind J Che Tec12, 413.pdf](2005/Ind%20J%20Che%20Tec12,%20413.pdf)

Abstract: 2-Pyridyliminosalicylcellulose has been used for the sorption and estimation of lead(II) by column and batch techniques. The distribution coefficient (D) was found to be 4.3x10(2) for the lead ion. The detection limit was found to be 3.82 ng mL(-1) and the breakthrough volume was 20 mL. The present matrix coupled with FAAS has been used to enrich and determine the lead ions in natural and wastewater (RSD similar to 2.52-3.50%) and egg samples (RSD similar to 2.73%). The method is simple, rapid and relatively free from interference and satisfactorily applied foe the estimation of lead (similar to 98% recovery) in natural, wastewater and egg samples.

Keywords: 2-Pyridyliminosalicylcellulose, Acid, Amberlite XAD-2, Atomic-Absorption-Spectrometry, Batch, Breakthrough, Enrichment, Extraction, Faas, Lead, Lead(II), Macromolecular Chelator, Metal-Ions, Preconcentration, Preconcentration, Separation, Silica-Gel, Solid Phase Extraction, Sorption, Wastewater

? Prajapati, K., Sidhpuria, K., Mahajan, D. and Chakraborty, M. (2005), Studies on equilibrium and kinetics of ACRY red 4G removal from aqueous solutions using low cost adsorbents. *Indian Journal of Chemical Technology*, **12** (4), 425-429.

Full Text: [2005\Ind J Che Tec12, 425.pdf](2005/Ind%20J%20Che%20Tec12,%20425.pdf)

Abstract: Applications of low cost adsorbents have been investigated as a replacement for the current expensive methods of reducing COD and colours from dyes/intermediate industrial wastewaters. Presently, PAC (powdered activated charcoal) is widely used in the industries. However, it is costly. Hence, other options have been explored which are low in cost. Effective adsorbents have been developed from bagasse fly ash, thermal fly ash, rice husk, jute thread and sawdust and successfully employed for the removal of dye, ACRY red 4G from aqueous solutions. Factors influencing the adsorption process, e.g., pH, contact time, adsorbent doses and adsorbent particle size are investigated. The experimental data fits well to the second-order kinetic model, which indicates that the chemical sorption is the rate-limiting step. A continuous method for removal of ACRY red 4G from industrial wastewater without prior treatment using all solid adsorbents such as bagasse fly ash, thermal fly ash, rice husk, jute thread and sawdust has also been proposed. An important. aspect of the proposed method is that the removal is performed at a pH range in which the dye ACRY red 4G undergo an adsorption process, making the method useful for wastewater treatment.

Keywords: Adsorption, Acry Red 4G, Fly Ash, Dye Removal, Sawdust, Jute Tread, Rice Husk, Basic-Dyes, Adsorption, Color

? Namasivayam, C. and Sangeetha, D. (2005), Removal and recovery of nitrate from water by ZnCl2 activated carbon from coconut coir pith, an agricultural solid waste. *Indian Journal of Chemical Technology*, **12** (5), 513-521.

Full Text: [2005\Ind J Che Tec12, 513.pdf](2005/Ind%20J%20Che%20Tec12,%20513.pdf)

Abstract: Nitrate removal from aqueous solution was investigated using ZnCl2 activated carbon developed from coir pith. Influence. of contact time, adsorbent dose, nitrate concentration, pH and temperature were investigated. Two theoretical adsorption isotherms namely Langmuir and Freundlich were used to describe the experimental results. The Langmuir adsorption capacity (Q(0)) was found to be 10.3 mg nitrate per g of the adsorbent. Adsorption followed second order kinetics. Adsorption was maximum in the pH range 3-10. pH effect and desorption studies showed that ion exchange mechanism might be involved in the adsorption process. Effects of foreign ions such as chloride, sulphate, phosphate and perchlorate on the removal of nitrate have also been investigated. Removal of nitrate from ground water was also tested. Results show that ZnCl2 activated coir pith carbon is effective for the removal of nitrate from water.

Keywords: Coir Pith; ZnCl2 Activated Carbon, Nitrate, Adsorption Isotherms, Adsorption, Equilibrium, Electrodialysis, Wastewaters, Phosphate, Kinetics, Sorption

? Kannan, N. and Malar, S.J.S. (2005), Removal of mercury(II) ions by adsorption onto dates nut and commercial activated carbons: A comparative study. *Indian Journal of Chemical Technology*, **12** (5), 522-527.

Full Text: [2005\Ind J Che Tec12, 522.pdf](2005/Ind%20J%20Che%20Tec12,%20522.pdf)

Abstract: Studies on the removal of mercury(II) ions by adsorption onto indigenously prepared dates nut (DC) and commercial activated carbons (CAC) have been carried out with an aim to obtain data for treating effluents from metal processing and chloralkali industries. The effect of various process parameters has been investigated by following the batch adsorption technique at 30±1°C. The percentage removal of mercury(II) ions increased with the decrease in initial concentration and increase in contact time and dose of adsorbent. As initial pH of the slurry increased, the percentage removal increased and reached a maximum value. The process parameters were optimised. Adsorption data were modeled with the Freundlich and Langmuir isotherms, the first order kinetic equations proposed by Lagergren and Bhatacharya and Venkobachar and Weber-Morri’s intra-particle diffusion model and the equations models were found to be applicable. The kinetics of adsorption is observed to be first order with intra-particle diffusion as one of the rate determining steps. Removal of mercury(II) ions by DC and CAC is found to be favourable and hence DC could be employed as an alternative low-cost adsorbent for effluent treatment, especially for the removal of mercury(II) and other metal ions.

Keywords: Activated Carbon, Adsorbents, Adsorption, Aqueous-Solution, Batch, Contact Time, Dates Nut Carbon, Diffusion, Freundlich, Intra-Particle Diffusion, Isotherms, Kinetic, Kinetic Equations, Kinetics, Langmuir, Langmuir Isotherms, Low Cost Adsorbent, Mercury(II), Metal Ions, Model, Models, pH, Removal, Treatment

? Inbaraj, B.S. and Sulochana, N. (2005), Use of jackfruit peel carbon (JPC) for adsorption of rhodamine-B, a basic dye from aqueous solution. *Indian Journal of Chemical Technology*, **13** (1), 17-23.

Full Text: [2005\Ind J Che Tec13, 17.pdf](2005/Ind%20J%20Che%20Tec13,%2017.pdf)

Abstract: A carbon sorbent derived from in agricultural waste, jackfruit peel was applied to study the removal of a basic dye, rhodamine-B from aqueous solution. Batch experiments were performed as a function of process parameters like agitation time, initial dye concentration, temperature, carbon close and pH. Modified Ritchie second order equation better predicted the kinetic results compared to other rate equations (pseudo first order and pseudo second order) tested. Among the isotherm models applied to the equilibrium data Redlich-Peterson model better predicted the experimental values. The adsorption capacity was 121.47 mg g-1 at an initial pH of 6.0 and at 32±0.5°C. The adsorption I capacity increased with increase in temperature. The influence of pH on dye removal was not significant. An optimum carbon dose of 1.2 g L-1 was required for the maximum removal (96%) of dye from its 60 mg L-1 solution. A significant portion of the dye was recovered from the spent carbon using 50% acetic acid.

Keywprds: Adsorption, Rhodamine-B, Jackfruit Peel, Carbon, Kinetics, Isotherms, Waste-Water, Activated Carbon, Reactive Dye, Industry Waste, Removal, Equilibrium, Kinetics, Mercury(II), Adsorbent, Cellulose

? Inbaraj, B.S. and Sulochana, N. (2005), Use of jackfruit peel carbon (JPC) for adsorption of rhodamine-B, a basic dye from aqueous solution. *Indian Journal of Chemical Technology*, **13** (1), 24-29.

Full Text: [2005\Ind J Che Tec13, 24.pdf](2005/Ind%20J%20Che%20Tec13,%2024.pdf)

Abstract: A carbon sorbent derived from an agricultural waste, jackfruit peel was applied to study the removal of a basic dye, rhodamine-B from aqueous solution. Batch experiments were performed as a function of process parameters like agitation time, initial dye concentration, temperature, carbon dose and pH. Modified Ritchie second order equation better predicted the kinetic results compared to other rate equations (pseudo first order and pseudo second order) tested. Among the isotherm models applied to the equilibrium data Redlich-Peterson model better predicted the experimental values. The adsorption capacity was 121.47 mg g−1 at an initial *p*H of 6.0 and at 32±0.5°C. The adsorption capacity increased with increase in temperature. The influence of *p*H on dye removal was not significant. An optimum carbon dose of 1.2 g L−1 was required for the maximum removal (96%) of dye from its 60 mg L−1 solution. A significant portion of the dye was recovered from the spent carbon using 50% acetic acid.

Keywords: Adsorption, Rhodamine-B, Jackfruit Peel, Carbon, Kinetics, Isotherms

? Ahalya, N., Kanamadi, R.D. and Ramachandra, T.V. (2006), Biosorption of iron(III) from aqueous solutions using the husk of Cicer arientinum. *Indian Journal of Chemical Technology*, **13** (2), 122-127.

Full Text: [2006\Ind J Che Tec13, 122.pdf](2006/Ind%20J%20Che%20Tec13,%20122.pdf)

Abstract: Iron is a major pollutant released as a by-product during several industrial operations especially during acid mining of metal ores. In this paper, the use of Bengal gram husk (husk of channa dal, Cicer arientinum) in the biosorption of Fe(III) from aqueous solutions is discussed. Parameters like agitation time, adsorbent dosage and pH were studied at different Fe(III) concentrations. The adsorption data fit well with Langmuir and Freundlich isotherm models. The adsorption capacity (q(max)) calculated from the Langmuir isotherm was 72.16 mg of Fe(III)/g of the biosorbent at an initial pH of 2.5. Desorption Studies were performed at different concentrations of hydrochloric acid showing that quantitative recovery of the metal ion is possible. The infrared spectra of the biomass before and after treatment with Fe(III), revealed that hydroxyl, carboxyl and amide bonds are involved in the uptake of Fe(III) ions.

Keywords: Adsorption, Adsorption Capacity, Adsorption-Isotherms, Aqueous Solutions, Arrhizus, Biomass, Biosorption, By-Products, Capacity, Chromium(VI), Desorption, Freundlich, Freundlich Isotherm, Heavy Metals, Heavy-Metal Ions, Hydrochloric Acid, Infrared, Infrared Spectra, Iron, Isotherm, Isotherm Models, Langmuir, Langmuir and Freundlich Isotherm, Langmuir Isotherm, Models, pH, Removal, Saccharomyces-Cerevisiae, Treatment, Vulgaris, Water

? Bhatnagar, A. and Minocha, A.K. (2006), Conventional and non-conventional adsorbents for removal of pollutants from water - A review. *Indian Journal of Chemical Technology*, **13** (3), 203-217.

Full Text: [2006\Ind J Che Tec13, 203.pdf](2006/Ind%20J%20Che%20Tec13,%20203.pdf)

Abstract: In the present article, the suitability of activated carbon and other alternative adsorbents for wastewater treatment has been reviewed. It is evident from literature survey of last 20-25 years that researchers have gained success to some extent in developing inexpensive adsorbents for water pollution control utilizing naturally available and waste materials. However, still there is a need to find out the practical utility of such developed adsorbents on large-scale and safe and eco-friendly disposal of spent adsorbents.

Keywords: Activated Carbon, Adsorbents, Adsorption, Anion-Exchange Resins, Aqueous-Solutions, Basic-Dyes, Control, Fly-Ash, Granular Activated Carbon, Industry Waste-Water, Linked Chitosan Beads, Liquid-Phase Adsorption, Literature, Low-Cost Adsorbents, Low-Cost Adsorbents, Pollution, Reactive Dyes, Removal, Researchers, Survey, Treatment, Wastewater, Wastewater Treatment, Water, Water Pollution

? Sharma, Y.C. and Srivastava, V. (2006), Adsorption of cadmium(II) from aqueous solutions by an indigenous clay mineral. *Indian Journal of Chemical Technology*, **13** (3), 218-221.

Full Text: [2006\Ind J Che Tec13, 218.pdf](2006/Ind%20J%20Che%20Tec13,%20218.pdf)

Abstract: Removal of cadmium, a priority pollutant, has been investigated by a locally available clay mineral, China clay. The removal depends on initial concentration of cadmium in solution and higher removal has been obtained in lower concentration ranges. The removal increased from 41.0 to 80.3% by decreasing the concentration of cadmium in solution from 2.0x10(-4) to 0.5x10(-4) M at 6.5 pH, 100 rpm and 0.01 M NaClO4 ionic strength. The pH of the solution plays an important role in the removal of cadmium. Rate of the removal was calculated by Lagergren’s model and was found to be 5.10X10(-2) min(-1) in optimum conditions. The process of removal proceeds with intraparticle diffusion and the value of the coefficient of intraparticle diffusion was found to be 3.25x10(-10) cm(2) s(-1). The parameters can be used for designing a plant for treatment of Cd(II) rich water and wastewater economically.

Keywords: Adsorption, Aqueous Solutions, Cadmium, Cadmium(II), Cd(II), China, China Clay, Clay, Diffusion, Fly-Ash, Model, pH, Removal, Treatment, Waste, Wastewater, Water, Zinc

? Mishra, S. and Bhattacharya, J. (2006), Potential of leaf litter for phenol adsorption - A kinetic study. *Indian Journal of Chemical Technology*, **13** (3), 298-301.

Full Text: [2006\Ind J Che Tec13, 298.pdf](2006/Ind%20J%20Che%20Tec13,%20298.pdf)

Abstract: The present study envisages the use of plant material, Shorea robusta For the removal of phenol by adsorption process. The effect of pH, contact time, particle size and initial concentration of adsorbate on removal process was investigated. The maximum removal of phenols from their aqueous solutions occurred in the pit range of 4-6. Kinetic parameters as a function of concentration and pH were evaluated to predict the nature of adsorption. Equilibrium adsorption data were correlated with Freundlich adsorption isotherm model. The maximum adsorption capacity of leaf litter was found to be 0.06 mg/g.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherm, Aqueous Solutions, Bentonite, Capacity, Contact Time, Equilibrium, Equilibrium Adsorption, Freundlich, Isotherm, Kinetic, Kinetic Study, Kinetics, Leaf, Model, pH, Phenol, Removal, Water

? Malik, R., Ramteke, D.S. and Wate, S.R. (2006), Physico-chemical and surface characterization of adsorbent prepared from groundnut shell by ZnCl2 activation and its ability to adsorb colour. *Indian Journal of Chemical Technology*, **13** (4), 319-328.

Full Text: [2006\Ind J Che Tec13, 319.pdf](2006/Ind%20J%20Che%20Tec13,%20319.pdf)

Abstract: Physico-chemical and surface characterization of activated carbon prepared from groundnut shell, an abundantly available carbonaceous solid waste from oil processing mills in India, by chemical activation were carried out. The effect of various activation conditions viz. time, temperature and ZnCl2/char ratio on the % yield of product and adsorption efficiency in terms of iodine number was studied. Changes in surface morphology of char before and after activation were examined by scanning electron microscopy which showed well developed pore structure in activated carbon demonstrating corrosive effect of ZnCl2. Surface modifications through chemical changes were studied by FTIR spectroscopy which showed considerable development and increase of surface functional groups in activated carbon as compared to char. The developed adsorbent was utilized for the removal of acid dye from aqueous solution and its adsorption capacity was found to be 55.5 mg/g of the adsorbent for 100 ppm initial concentration of dye solution. Adsorption parameters for Freundlich and Langmuir isotherm models were examined for dye adsorption and for the validity of models to analyze the equilibrium data, it was found that Freundlich model fitted better than Lmgmuir. The results indicate that Groundnut Shell based Powdered Activated Carbon (GSPAC) could be employed as low-cost alternative adsorbent to commercial activated carbon in the wastewater treatment for removal of acid dyes.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Adsorption Isotherms, Aqueous-Solutions, Biomass, Capacity, Carbon, Characterization, Chemical Activation, Development, Dye, Dyes, Equilibrium, Freundlich, FTIR, FTIR Spectroscopy, Fuchsin Acid, Groundnut Shell, India, Isotherm, Isotherm Models, Langmuir, Langmuir Isotherm, Model, Models, Physical Activation, Pore, Pore Structure, Porosity, Removal, Sawdust, Temperature, Treatment, Wastewater, Wastewater Treatment

? Janardhana, C., Rao, G.N., Sathish, R.S. and Lakshman, V.S. (2006), Study on defluoridation of drinking water by impregnation of metal ions in activated charcoal. *Indian Journal of Chemical Technology*, **13** (4), 414-416.

Full Text: [2006\Ind J Che Tec13, 414.pdf](2006/Ind%20J%20Che%20Tec13,%20414.pdf)

Abstract: Defluoridation of drinking water was carried out by the continuous down flow adsorption mode at room temperature. Five columns were prepared by the impregnation of ZrOCl2, CaO, Alum, CaCl2 and Borax in activated coconut shell charcoal. Known fluoride influent water was run into the column at a constant rate of 4.0 L, h and a constant level of water was maintained. Samples of the treated water were collected for analysis by the ion selective electrode method. In this study zirconium ion impregnated coconut shell charcoal (ZICSC) showed maximum fluoride uptake and proved to be the most effective defluoridating agent followed by CaO and Alum.

Keywords: Activated Coconut Shell Charcoal, Adsorption, Alum, Aluminum, Alzheimers-Disease, Aqueous-Solutions, Calcium Oxide, Carbon, Column, Continuous Flow Method, Defluoridation, Drinking Water, Fluoride, Impregnation, Ion Selective Electrode, Preconcentration, Water, X-Ray-Fluorescence, Zirconium, Zirconium Oxychloride

? Arora, S., Dhaliwal, S.S. and Kukrej, V.K. (2006), Modelling of the displacement washing of pulp fibre bed. *Indian Journal of Chemical Technology*, **13** (5), 433-439.

Full Text: [2006\Ind J Che Tec13, 433.pdf](2006/Ind%20J%20Che%20Tec13,%20433.pdf)

Abstract: The mechanism of the displacement washingg of the bed of pulp fibres is mathematically modelled using a single parameter namely, Peclet number. The bulk fluid concentration is assumed to be the function of washing period and position in the bed. The effect of Peclet number on exit solute concentration is shown using the breakthrough curves. A non-linear adsorption isotherm (Langmuir) is used to describe the relationship between bulk fluid-concentration and the concentration of solute accumulated on the particle surface. The validity of the model is shown using the literature data. A comparison of washing behaviour of pulp fibres and static bed of glass beads is also presented.

Keywords: Adsorption, Adsorption Isotherm, Axial Dispersion Model, Beads, Breakthrough, Comparison, Exit Solute Concentration, Flow, Isotherm, Langmuir, Langmuir Isotherm, Literature, Model, Modelling, Orthogonal Collocation on Finite Elements, Packed-Beds, Peclet Number

? Aravind, V. and Elango, K.P. (2006), Adsorption of fluoride onto magnesia-Equilibrium and thermodynamic study. *Indian Journal of Chemical Technology*, **13** (5), 476-483.

Full Text: [2006\Ind J Che Tec13, 476.pdf](2006/Ind%20J%20Che%20Tec13,%20476.pdf)

Abstract: Batch sorption system using magnesium oxide as an adsorbent was investigated to remove fluoride ions from aqueous solutions. The system variables studied include initial concentration of the sorbate, agitation time, adsorbent dose, pH, co-ions and temperature. The experimental data fitted well to the Freundlich isotherm while, poorly to the Langmuir isotherm. Thermodynamic parameters such as ΔH°, ΔS° and ΔG° were calculated indicating that the adsorption was a spontaneous, endothermic and a physical process. Kinetic studies reveal that the adsorption is first order. A mechanism involving three stages (external surface adsorption, intraparticle diffusion and final equilibrium) has been proposed for the adsorption of fluoride ions onto MgO. XRD patterns of the adsorbent were recorded to act a better in sight into the mechanism of the adsorption process.

Keywords: Defluoridation, Isotherm, Adsorption, Activated Carbon, Sorbent

? Jayswal, A. and Chudasama, U. (2006), Sorption of water soluble dyes using inorganic materials as sorbents. *Indian Journal of Chemical Technology*, **13** (6), 539-543.

Full Text: [2006\Ind J Che Tec13, 539.pdf](2006/Ind%20J%20Che%20Tec13,%20539.pdf)

Abstract: Ion exchange technique has been used for treatment of wastewater containing dyes. Zirconium molybdate (ZM) an inorganic cation exchanger of the class of tetravalent metal acid salt has been used for the purpose. Sorption of dyes namely crystal violet (CV), methyleneblue (MB) and rhodamine6G (R6G) has been carried out on zirconium molybdate by varying pH and flow rate. The dyes can be effectively recovered by Using dilute acids such as HCl, HNO3 and H2SO4. Similar studies have also been carried out using zirconia (ZO) for comparison. Considerable differences in the binding of the dyes tested, have been observed. In general, heteropolycyclic dyes exhibit more affinity towards ZM as compared to ZO.

Keywords: Adsorption, Aqueous-Solutions, Biodegradation, Cation Exchanger, Cation-Exchanger, Chitin, Color, Comparison, Crystal Violet, Decolorization, Dyes, Effluents, Epichlorohydrin-Cellulose Polymer, Exchange, Ion Exchange, Methylene Blue, pH, Removal, Rhodamine 6G, Sorption, Tetravalent Metal Acid Salt, Treatment, Wastewater, Wastewater Treatment, Water, Zirconium Molybdate

? Shibi, I.G. and Anirudhan, T.S. (2006), Kinetic and equilibrium modeling of adsorption of cobalt(II) from aqueous solutions onto surface modified lignocellulosics (Musa paradisiaca). *Indian Journal of Chemical Technology*, **13** (6), 567-575.

Full Text: [2006\Ind J Che Tec13, 567.pdf](2006/Ind%20J%20Che%20Tec13,%20567.pdf)

Abstract: Banana (Musa paradisiaca) Stalk (BS), an agricultural waste, modified by graft copolymerization reaction might be the basis of a new approach to remove the metal pollutants from water. The treatment process involves graft copolymerization of acrylamide onto BS using ferrous ammonium sulphate/H2O2 redox initiator system followed by functionalization of carboxylate group (PGBS-COOH). In this paper, the efficiency of the PGBS-COOH in the removal of Co(II) from aqueous solutions has been investigated using batch experiments. The influence of different experimental parameters such as pH, contact time, initial concentration of Co(II), adsorbent dose and temperature on the adsorption process has been studied. The maximum adsorption capacity is observed at the pH range 6.5-8.0. Maximum removals of 99.7 and 97.2% are observed at Co(II) concentration of 25.0 and 50.0 mg/L, respectively. A kinetic model based on empirical relationship has been derived to predict the percentage Co(II) removal at any time for known amount of sorbent and initial Co(II) concentration. The surface mass-transfer coefficient as a function of temperature has been determined. Kinetic parameters are also evaluated. The Langmuir isotherm model fitted the experimental equilibrium data. The PGBS-COOH had adsorption capacities for Co(II) from 166.66 mg/g at 30°C to 181.46 mg/g at 60 degrees C. Graft copolymerization of BS-an agricultural waste which is found in abundance and has otherwise no significant use and results in a low cost-value-added product which can benefit industry.

Keywords: Abundance, Acrylamide, Adsorption, Ammonium, Banana Stalk, Batch Experiments, Benefit, Capacity, Carboxylate, Co(II) Removal, Concentration, Copolymerization, Efficiency, Equilibrium, Functionalization, Graft Copolymerization, Ion-Exchange, Isotherm, Kinetic, Kinetic Model, Langmuir Isotherm, Mass Transfer, Membrane, Model, Modeling, Modified, Paper, Parameters, pH, Pollutants, Predict, Range, Reaction, Redox, Removal, Silica, Sorption, Surface, Temperature, Treatment, Waste, Waste-Water, Water

? Bhattacharya, A.K., Mandal, S.N. and Das, S.K. (2006), Removal of Cr(VI) from aqueous solution by adsorption onto low cost non-conventional adsorbents. *Indian Journal of Chemical Technology*, **13** (6), 576-583.

Full Text: [2006\Ind J Che Tec13, 576.pdf](2006/Ind%20J%20Che%20Tec13,%20576.pdf)

Abstract: Adsorption behavior of chromium, Cr(VI) from wastewater has been investigated using clarified sludge (a steel plant waste material), rice husk ash and sawdust as non-conventional adsorbents. The studies were carried Out at room temperature (30°C) following batch adsorption technique in a reciprocating shaker. Factors affecting the adsorption characteristics such as agitation time, initial metal ion concentration, adsorbent dose and pH were studied, Maximum adsorption of Cr(VI) was observed at pH 3. The experimental data fitted to Langmuir and Freundlich isotherms. The adsorption process found to follow Lagergren first order kinetics model. Adsorption capacity has been observed to follow the order clarified sludge > rice husk ash > sawdust. At pH 3 and initial Cr(VI) concentration of 3 mg/L more than 99% removal of Cr(VI) may be possible. The maximum amount of adsorbed metal (q(max)) value is significantly influenced by liquid/solid ratio and by the pH values of the metal solutions.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Capacity, Bagasse Fly-Ash, Batch, Cadmium, Capacity, Chromium, Chromium(VI), Cost, Cr(VI), Freundlich, Heavy-Metals, Hexavalent Chromium, Isotherms, Kinetics, Lagergren Model, Langmuir, Langmuir and Freundlich Isotherms, Model, Non-Conventional Adsorbent, pH, Removal, Rice, Sawdust, Steel, Sugar-Industry Waste, Temperature, Wastewater, Water, Zinc

? Hossain, S.M. and Anantharaman, N. (2006), Studies on bacterial growth and lead(IV) biosorption using Bacillus subtilis. *Indian Journal of Chemical Technology*, **13** (6), 591-596.

Full Text: [2006\Ind J Che Tec13, 591.pdf](2006/Ind%20J%20Che%20Tec13,%20591.pdf)

Abstract: Gram-positive bacterium Bacillus subtilis biosorbs lead(IV) ion from its aqueous solution. The maximum biosorption of lead is 97.68% (w/w) within 48 h of incubation time with optimum pH 4.5 and optimum temperature 40 degrees C for 700 ppm initial loading of lead in a shake flask (optimum rpm 60). 7 days old and 30% (v/v) of suspension inoculum culture is used in the studies. Lead is measured by using atomic absorption spectrophotometer (AAS) into all air-acetylene flame and absorbance is measured at 283.3 nm. The maximum bacterial growth is noticed as 4.90x 10(8) cells/mL at optimum bioprocess conditions.

Keywords: Absorption, Bacillus Subtilis, Bacteria, Biosorption, Cell-Wall, Charge, Chemistry, Growth, Incubation, Lead, Metal-Binding, Optimum Temperature, pH, Sites, Temperature

? Reddithota, D., Yerramilli, A. and Krupadam, R.J. (2007), Electrocoagulation: A cleaner method for treatment of Cr(VI) from electroplating industrial effluents. *Indian Journal of Chemical Technology*, **14** (3), 240-245.

Full Text: [2007\Ind J Che Tec14, 240.pdf](2007/Ind%20J%20Che%20Tec14,%20240.pdf)

Abstract: Chromium contamination in waters are highly toxic even in very low concentrations and need to be completely removed from the effluents before they are discharged into a stream, sewer or on land. Electroplating industry is one of the industrial sectors producing chromium bearing wastewaters, mostly originating from chromium plating, anodizing electroplating solutions and dip solutions like passivating dips, bright dips, etc. Chromium concentration in the effluents varies from 3 to 50 mg/L depending upon the care with which the plating operations are carried out. The results of this study have shown the applicability of electrocoagulation as a clean method for treatment of Cr(VI) containing wastewaters. The optimum removal of Cr(VI) was attained between pH 4-8. Increase in current density enhances the removal rate and the quickest treatment with an effective reduction of Cr(VI) concentrations was achieved below permissible level within 20 min. Iron electrodes were found to be more efficient in removing chromium in comparison to the aluminum and hydrid Al/Fe electrodes. This may be due to the formation of stable Fe-Cr complex which is more stable than Al-Cr complexes. On the other hand, I kg of Cr(VI) removal produces only 2,8 kg of sludge against 36 kg of sludge generated from iron sulphate precipitation method. The rate of removal is faster in comparison to the adsorption on activated carbon which is one of the most important requirement for practical application of this treatment method.

Keywords: Activated Carbon, Adsorption, Chromium, Chromium(VI) Treatment, Comparison, Complex, Cr(VI), Cr(VI) Removal, Density, Electrocoagulation, Electroplating Effluents, Industrial Effluents, Iron, Ph, Removal, Textile Waste-Water, Treatment

? Biswas, R.K. and Singha, H.P. (2007), Solvent extraction of Cu(II) by purified cyanex 272. *Indian Journal of Chemical Technology*, **14** (3), 269-275.

Full Text: [2007\Ind J Che Tec14, 269.pdf](2007/Ind%20J%20Che%20Tec14,%20269.pdf)

Abstract: The solvent extraction of Cu(II) from 0.10 mol/dm3 sulphate medium by purified cyanex 272 (bis-2,4,4-trimethylpentylphosphinic acid, BTMPPA, HAD dissolved in distilled aliphatic kerosene has been investigated. The equilibration time is less than 15 min. The distribution ratio is found to decrease appreciably with equilibrium CLI(II) concentration in the aqueous phase, particularly, at its higher concentration region indicating some sort of association of Cu(II) species in either of the phases. The pH and the extractant concentration dependences oil distribution ratio are I and 1.2, respectively. The distribution ratio is almost independent of sulphate ion concentration in the aqueous phase. The Delta H value is 27.3 9±0.5 kJ/mol. The 60% extraction equilibrium reaction is suggested to be: CuHSO4+ + H(2)A(2(o)) reversible arrow CuHSO4 A. 0.5 H(2)A(2(o)) + H+ and some 40% extraction is likely to occur via the reaction, CuHSO4+ + 1.5 H(2)A(2(o)) reversible arrow CuHSO(4)A.H(2)A(2(o)) + H+ satisfying the extractant dependence of 1.20. The apparent extraction equilibrium constant (K-ex) is estimated to be 10(-3.15). The loading capacity of BTMPPA is 13.47 g Cu(II)/100 g BTMPPA. Among H2SO4, HCl and HNO3 solutions as stripping agent, 1 mol/dm(3) H2SO4 Solution is found to be the best; 99.6% Cu(II) in the organic phase can be stripped off in three stages (O/A = 1 in each stage). The Cu(II) distribution ratio measured at pH = 4 in different diluents does not show good correlation with the cross-sectional area of BTMPPA molecules at interfaces formed by different diluents at pH 0.80.

Keywords: Acid Dissociation-Constants, Aqueous-Solutions, Btmppa, Capacity, Copper(II), Copper-Extraction, Cu(II), Cyanex 272, Equilibrium, Interfacial Adsorption, Kerosene, Liquid-Liquid Extraction, Molecules, Nitrate Media, Ph, Phosphinic Acid, Physicochemical Properties, Selective Extraction, Separation, Solvent Extraction, Stage, Sulfate-Solutions, Sulphate Medium

? Selvakumar, R., Kavitha, S. and Swaminathan, K. (2007), Adsorption of As(V) from aqueous solution by chemically doped coir pith carbon.  *Indian Journal of Chemical Technology*, **14** (3), 276-282.

Full Text: [2007\Ind J Che Tec14, 276.pdf](2007/Ind%20J%20Che%20Tec14,%20276.pdf)

Abstract: The present work examines the possible use of coir pith, a by-product from coir fibre industry as a means of removing As(V) from aqueous solution. Kinetic and equilibrium experiments were performed in order to evaluate the efficiency of the thermally activated coir pith carbon (TCPC). The efficiency of TCPC was improved by doping with FeSO4.7H(2)O (FCPC) and CuSO4.5H(2)O (CCPC). Adsorption studies were carried out using these doped and undoped coir pith carbon. Maximum removal was observed with FCPC with a Q(o) value of 18.9 mg/g followed by CCPC with Q(o) value of 14.77 mg/g at maximum As(V) concentration. TCPC was comparatively less efficient when compared to the doped adsorbents and had a Q(o) value of 8.39 mg/g. The rate of adsorption was dependent on the As(V) concentration. Langmuir and Freundlich isotherms were applied and the experimental data fitted well with these isotherms. The desorption and regeneration studies revealed that FCPC after regeneration could remove 62.8% As(V) when recycled. The results indicate that FCPC could be used as an effective adsorbent for As(V) removal from ground water sample.

Keywords: Activated Carbon, Adsorbents, Adsorption, Arsenate, Arsenite, As(III), As(V), As(V) Removal, Coated Sand, Coir Pith, Cr(VI), Desorption, Doping, Equilibrium, Fly-Ash, Freundlich, Isotherm Studies, Isotherms, Kinetic, Langmuir, Langmuir and Freundlich Isotherms, Regeneration, Removal, Thermal Activation, Water

? Janardhana, C., Rao, G.N., Sathish, R.S., Kumar, P.S., Kumar, V.A. and Madhav, M.V. (2007), Study on defluoridation of drinking water using zirconium ion impregnated activated charcoals. *Indian Journal of Chemical Technology*, **14** (4), 350-354.

Full Text: [2007\Ind J Che Tec14, 350.pdf](2007/Ind%20J%20Che%20Tec14,%20350.pdf)

Abstract: Activated charcoals which are effective for fluoride removal, when impregnated with zirconium metal ions have an increase in their fluoride adsorption capacity by 3 to 5 times to that of plain activated charcoal. Continuous down flow adsorption mode at room temperature was adopted to defluoridate drinking water. Three columns were prepared by the impregnation of ZrOCl2, in groundnut shell, coconut shell and coconut fiber activated charcoals. The column was run at a constant rate of 0.6-0.7 L/h with known fluoride influent water and a constant level of water was maintained. Treated water samples were analysed by the ion selective electrode method. In this study zirconium ion impregnated coconut fiber charcoal (ZICFC) showed maximum fluoride uptake and proved to be the most effective defluoridating agent followed by groundnut shell and coconut shell charcoals. ZICFC was effective for 21 liter lots of (8.0 mg F ion/L) test solution.

Keywords: Activated Charcoals, Adsorption, Adsorption Capacity, Aluminum, Alzheimers-Disease, Aqueous-Solutions, Capacity, Carbon, Coconut Fiber, Continuous Flow Method, Defluoridation, Drinking Water, F, Fiber, Fluoride, Kinetics, Metal Ions, Preconcentration, Removal, Temperature, Water, X-Ray-Fluorescence, Zirconium Oxychloride

? Kumar, S., Gupta, A. and Yadav, J.P. (2007), Fluoride removal by mixtures of activated carbon prepared from Neem (Azadirachta indica) and Kikar (Acacia arabica) leaves. *Indian Journal of Chemical Technology*, **14** (4), 355-361.

Full Text: [2007\Ind J Che Tec14, 355.pdf](2007/Ind%20J%20Che%20Tec14,%20355.pdf)

Abstract: Fluoride removal from aqueous solution was investigated using activated carbon developed from mixture of Neem (A zadirachta indica) and Kikar (Acacia arabica) leaves. In this study, the mixture of sizes 0.3 mm and 1.0 mm (1: 1, 2:1 and 1:2) adsorbent were prepared by mixing the thermally activated Neem (Azadirachta indica) leaves carbon and thermally activated Kikar (Acacia arabica) leaves carbon, according to their efficiency for fluoride removal. Batch type experiment was carried out for the adsorption of fluoride using mixture adsorbent. In the batch Study influence of pH, adsorbent dose and contact time were investigated. Adsorption of fluoride was pH dependent and was found to be maximum at pH 6. Fluoride removal increased with increased dose of carbon. The adsorption process obeyed Freundlich adsorption isotherm, Lanaergren’s equation and intraparticle diffusion. Fluoride removal increased with decreasing particle size of carbon. In mixture, adsorbent ratio 2: 1 had slightly higher capacity than the 1: 1 and 1:2.

Keywords: Acacia Arabica, Activated Carbon, Adsorbent, Adsorption, Adsorption, Adsorption Isotherm, Adsorption Process, Aqueous Solution, Azadirachta Indica, Batch, Capacity, Carbon, Contact Time, Diffusion, Drinking-Water, Efficiency, Experiment, Fluoride, Fluoride Removal, Freundlich, Freundlich Adsorption Isotherm, Influence of pH, Intraparticle, Intraparticle Diffusion, Isotherm, Leaves, Mixing, Mixture, Mixtures, Particle, Particle Size, pH, Process, Removal, Size, Thermally Activated Carbon, Time

? Gawale, R. and Marathe, K.V. (2007), Recovery of metal ion from micellar solution. *Indian Journal of Chemical Technology*, **14** (4), 362-370.

Full Text: [2007\Ind J Che Tec14, 362.pdf](2007/Ind%20J%20Che%20Tec14,%20362.pdf)

Abstract: Separation of cobalt(II) front micellar (surfactant) solution was carried out by using strongly acidic cation exchange resin Indion 225H and chelating resin Duolite C467. The equilibrium data obtained in this study fits ill Lanpmuir adsorption isotherm, for Indion 225H resin and Freundlich adsorption isotherm for Duolite C467 resin. The effect of pH, temperature and feed concentration on the adsorption capacity of the resins was studied. For both the resins, diffusion of cobalt ill the resin phase is a rate controlling step. The dynamic behaviour of the adsorption column was also modeled using equilibrium and kinetic data. Column studies were simulated by using linear driving force model. Desorption of cobalt from chelating resin was easier than strongly acidic cation exchange resin.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherm, Capacity, Cation Exchange, Cobalt Recovery, Column, Desorption, Diffusion, Effective Diffusivity, Enhanced Ultrafiltration, Equilibrium, Exchange, Freundlich, Ion Exchange Resins, Isotherm, Kinetic, Model, pH, Recovery, Removal, Separation, Temperature

? Uddin, M.T., Mozumder, M.S.I., Figoli, A., Islam, M.A. and Drioli, E. (2007), Arsenic removal by conventional and membrane technology: An overview. *Indian Journal of Chemical Technology*, **14** (5), 441-450.

Full Text: [2007\Ind J Che Tec14, 441.pdf](2007/Ind%20J%20Che%20Tec14,%20441.pdf)

Abstract: Presently used arsenic removal technology has been reviewed, pointing especially to the promise of membrane technologies as a practical means of purification. The membrane technologies include reverse osmosis (RO), nanofiltration (NF), ultrafiltration (UF) and microfiltration (MF). Among them, the applications of the first two have proved to be reliable in removing arsenic from water. The influence of membrane materials, membrane type, operating conditions Such as temperature, pressure, pH of the feed solution and feed concentration on arsenic removal efficiency by membrane technologies are discussed. This paper also provides a comparison between conventional technologies and membrane technologies for arsenic removal and concludes that membrane technology is preferred for water treatments to meet the maximum contaminant limit (MCL) standard.

Keywords: Activated Carbon, Adsorption, Adsorption, Aqueous-Solutions, Arsenic, Arsenic Removal, Comparison, Drinking-Water, Ground-Water, Membrane Technology, Microfiltration, Nanofiltration, Nanofiltration Membranes, Operating Conditions, Operating-Conditions, Oxide-Coated Sand, pH, Pressure, Removal, Reverse Osmosis, Reverse-Osmosis, Technology, Temperature, Ultrafiltration, Ultrafiltration Membrane, Water

? Ghazy, S.E. and Ragab, A.H. (2007), Removal of copper from water samples by sorption onto powdered limestone. *Indian Journal of Chemical Technology*, **14** (5), 507-514.

Full Text: [2007\Ind J Che Tec14, 507.pdf](2007/Ind%20J%20Che%20Tec14,%20507.pdf)

Abstract: The present paper describes the results of a study concerning Cu(II) removal from aqueous systems by batch adsorption experiments, using fine powdered Limestone (LS) as all effective sorbent, which is widespread and cheap. The parameters (i.e., initial solution pH. sorbent and copper concentrations, stirring times and temperature) influencing the sorption process. in addition to the effect of some foreign ions, were investigated. The results obtained showed that the sorption of Cu2+ ions onto LS is exothermic and spontaneous in nature, and followed first-order kinetics. The adsorption data were well described by Langmuir, Freundlich, Dubinin-Radushkevich (D-R) adsorption models over the concentration range Studied. Under the optimum experimental conditions employed, the removal of ca. 100% of Cu2+ ions was attained. The procedure was Successfully applied to the removal of copper from aqueous and different natural water samples. The adsorption mechanism is also Suggested.

Keywords: Adsorption, Adsorption Mechanism, Aqueous-Solutions, Batch, Calcite, Copper, Cu(II), Cu2+, Dubinin-Radushkevich, Flotation, Fly-Ash, Freundlich, Heavy-Metal Ions, Kinetics, Langmuir, Limestone, Models, Natural-Waters, Nonconventional Adsorbents, pH, Removal, Sorbent, Sorption, Spectrophotometric Determination, Temperature, Waste-Water, Water

? Mishra, P., Srivastava, P., Mishra, P.K. and Kundu, S. (2007), Recovery of cephalosporin C from aqueous solution using polymeric adsorbent. *Indian Journal of Chemical Technology*, **14** (6), 592-596.

Full Text: [2007\Ind J Che Tec14, 592.pdf](2007/Ind%20J%20Che%20Tec14,%20592.pdf)

Abstract: Commercially, available neutral polymeric sorbents are used for recovery of beta lactam antibiotic cephalosporin C (CPC), from aqueous solution. The objective of this work is to evaluate the separation of CPC front fermentation broth during purification process. The neutral forms of CPC are preferentially adsorbed onto the neutral sorbents. Adsorption of CPC was higher onto the aromatic (XAD 4) as compared to aliphatic ester sorbent (XAD 8). The kinetics of CPC adsorption on aromatic polymeric adsorbent has been investigated. Isopropyl alcohol solution Was Used to desorb CPC.

Keywords: Adsorption, Adsorption, Antibiotics, Cephalosporin C, Desorption, Kinetics, Polymeric Adsorbents, Recovery, Resins, Sorbent, Sorbents

? Jayswal, A. and Chudasama, U. (2007), Sorption of water soluble dyes from aqueous solutions on zirconium phosphate. *Indian Journal of Chemical Technology*, **14** (6), 597-605.

Full Text: [2007\Ind J Che Tec14, 597.pdf](2007/Ind%20J%20Che%20Tec14,%20597.pdf)

Abstract: Amorphous zirconium phosphate (ZP) ail inorganic ion exchange material of the class of tetravalent metal acid (tma) salt has been synthesized by sol-gel method. The material has been characterized for elemental analysis (ICP-AES), thermal analysis (TGA, DSC), FT-IR and X-ray diffraction studies. Chemical resistivity of the material in various media has been assessed. The sorption behaviour of dyes methylene blue (MB), crystal violet (CV), methyl violet (MV) and janus green B (JGB) towards ZP has been studied at 313, 323 and 333 K and kinetic and thermodynamic parameters evaluated. Adsorption isotherms (Langmuir and Fruendlich), breakthrough capacity and elution behaviour of dyes have also been studied. Sorption affinity of dyes towards ZP is found to be MB > CV approximate to MV > JGB.

Keywords: Acid Salts, Adsorption, Adsorption Isotherms, Analysis, Aqueous Solutions, Breakthrough, Capacity, Chitin, Color, Decolorization, Dyes, Effluents, Epichlorohydrin-Cellulose Polymer, Exchange, FT-IR, FTIR, ICP-AES, Inorganic Ion Exchanger, Ion Exchange, Isotherms, Kinetic, Langmuir, Methylene Blue, Methylene-Blue, Removal, Sol-Gel, Sorption, Tetravalent Metal Acid Salt, Thermodynamic, Thermodynamic Parameters, Waste Treatment Containing Dyes, Waste-Water, Water, X-Ray, X-Ray Diffraction, Zr (IV) Phosphate

? Gude, S.M. and Das, S.N. (2008), Adsorption of chromium(VI) from aqueous solutions by chemically treated water hyacinth Eichhornia crassipes. *Indian Journal of Chemical Technology*, **15** (1), 12-18.

Full Text: [2008\Ind J Che Tec15, 12.pdf](2008/Ind%20J%20Che%20Tec15,%2012.pdf)

Abstract: The adsorption potential of water hyacinth Eichhornia crassipes for the removal of Cr(VI) from aqueous solutions has been stidied. The influence of various parameters including contact time, temperature, solution pH, initial adsorbate and adsorbent concentrations and effect of competing anions Were studied. Results obtained indicate that the treated weed Eichhornia crassipes has remarkable adsorption capacity for Cr(VI) at pH below 4. The rate of adsorption was rapid and equilibrium attained within 2 h. The method followed first order kinetics. The adsorption process does exhibit a Langmuir type behaviour which is affected by the temperature. The maximum Cr(VI) removal was found to be 7.5 mg/g of dry weight weed at pH of 3.0 in 120 min at 25 degrees C. The calculated activation energy for the method studied was around 54.6 kJ/mol. About 500 mg weed could remove Cr(VI) successfully from 100 mL of chromite mine water containing 2.8 mg/L Cr(VI) at normal conditions.

Keywords: Activation Energy, Adsorption, Adsorption Capacity, Aqueous Solutions, Biomass, Biosorption, Capacity, Chromium(VI), Contact Time, Cr(VI), Cr(VI) Removal, Equilibrium, Hexavalent Chromium, Kinetics, Langmuir, Mine Water, pH, Removal, Temperature, Water, Water Hyacinth, Weight

? Arivoli, S., Sundaravadivelu, M. and Elango, K.P. (2008), Adsorption of Fe(II), Co(II), Ni(II) and Cu(II) ions onto a low cost activated carbon: Equilibrium, kinetic and thermodynamic studies. *Indian Journal of Chemical Technology*, **15** (1), 19-28.

Full Text: 2008\Ind J Che Tec15, 19.pdf

Abstract: Batch sorption system using activated carbon from Aegle marmelos fruits source as an adsorbent was investigated to remove Fe(II), Co(II), Ni(II) and Cu(II) ions from aqueous solutions. The system variables studied include initial concentration of the sorbate, agitation time, adsorbent dose, pH, co-ions and temperature. The experimental data fitted well to the Langmuir and Freundlicli isotherms. The values of thermodynamic parameters such as ΔH°, ΔS° and ΔG° indicated that the adsorption was a spontaneous, endothermic and a physical process. Kinetic studies revealed that the adsorption is of first order. A two staged mechanism has been proposed for the adsorption of metal ions onto the adsorbent. FT-IR and SEM patterns of the adsorbent were used to understand the mechanism of die adsorption process. The order of adsorption of the metal ions Was found to be Fe(II) > Cu(II) > Ni(II) > Co(II) which is in agreement with the intra-particle diffusion studies.

Keywords: Activated Carbon, Adsorption, Aegle Marmelos, Aqueous Solutions, Aqueous-Solutions, Co(II), Cost, Cu(II), Diffusion, Equilibrium, Fluoride, FT-IR, FTIR, Isotherms, Kinetic, Kinetics, Langmuir, Metal Ions, Metal-Ions, pH, SEM, Sorption, System, Temperature, Thermodynamic, Thermodynamic Parameters, Zn

? Konwar, D., Gogoi, P.K., Gogoi, P., Borah, G., Baruah, R., Hazarika, N. and Borgohain, R. (2008), Esterification of carboxylic acids by acid activated Kaolinite clay. *Indian Journal of Chemical Technology*, **15** (1), 75-78.

Full Text: [2008\Ind J Che Tec15, 75.pdf](2008/Ind%20J%20Che%20Tec15,%2075.pdf)

Abstract: Esterification of carboxylic acid was carried out by using acid activated kaolinite clay. This heterogeneous catalyst, activated kaolinite clay has been found to be a mild solid catalyst for the esterification of carboxylic acid in good yields. The catalyst is recoverable and can be recycled after activation.

Keywords: Alcohols, Alpha, Carboxylic Acid, Clay, Deprotection, Derivatives, Efficient, Esterification, Esters, Hydrated Media, Kaolinite, Oxidation, Selective Gas-Adsorption, System, Water

? Arivoli, S., Sundaravadivelu, M. and Elango, K.P. (2008), Removal of basic and acidic dyes from aqueous solution by adsorption on a low cost activated carbon: Kinetic and thermodynamic study. *Indian Journal of Chemical Technology*, **15** (2), 130-139.

Full Text: [2008\Ind J Che Tec15, 130.pdf](2008/Ind%20J%20Che%20Tec15,%20130.pdf)

Abstract: Batch experiments were carried out for the sorption of Congo red (CR), Malachite green (MG), Rhodamine B (RDB) and Rose Bengal (RB) dyes onto acid activated carbon prepared from a plant material, Aloe barbadensis Mill. The operating variables Studied were initial dye concentration, pH, temperature and contact time. Equilibrium data were fitted to the Langmuir and Freundlich isotherm equations. From this, adsorption efficiency, adsorption energy, adsorption capacity, intensity of adsorption and dimensionless separation factor were calculated. The amounts of CR, MG, RDB and RB removed from a 60 mg L-1 of the dye solution at 30°C are 21.17, 26.19, 8.50 and 3.62 mg g-1, respectively. The results of these studies indicate that the adsorption is favourable. From the kinetic studies, the rate constant values for the adsorption process were calculated. The thermodynamic parameters like ΔG°, ΔH° and ΔS° indicate that the adsorption process is endothermic and spontaneous in nature. The mechanism of the adsorption of dyes onto the adsorbent has been investigated by using the experimental results and confirmed by FT IR, XRD and SEM images.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Bagasse Fly-Ash, Batch Experiments, Capacity, Congo Red, Congo-Red, Contact Time, Cost, Dye, Dyes, Equilibrium, Equilibrium Isotherm Analyses, Fluoride, Freundlich, Freundlich Isotherm, FT-IR, Isotherm, Kinetic, Langmuir, Langmuir and Freundlich Isotherm, Malachite Green, Malachite-Green, Mechanism, pH, Removal, Rhodamine B, Rhodamine-B, Rice Husk, SEM, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, XRD

? Verma, V.K. and Mishra, A.K. (2008), Removal of dyes using low cost adsorbents. *Indian Journal of Chemical Technology*, **15** (2), 140-145.

Full Text: [2008\Ind J Che Tec15, 140.pdf](2008/Ind%20J%20Che%20Tec15,%20140.pdf)

Abstract: The low cost adsorbents namely Rice Husk Carbon (RHC), Wheat Straw Carbon (WSC) and Saw Dust Carbon (SDC) have been tested for the effectiveness in decolourisation of wastewater containing a mixture of dyes. Three dyes namely crystal violet, direct orange and magenta have been used for imparting colour in the representative samples of wastewater. Effect of various parameters such as agitation time, pH, temperature and adsorbent dosage has been investigated in the study. The adsorption of dyes are best “described by pseudo first order mechanism. The rate constants of adsorption (K-ad) for the three dyes have been determined for the three adsorbents separately which are found to be 6.8×10-3, 8×10-3 and 25×10-3 min-1 for crystal violet, 8×10-3, 12×10-3 and 16×10-3 min-1 for direct orange and 10×10-3, 10.6×10-3 and 6×10-3 min-1 for magenta when treated with RHC, WSC and SDC respectively.

Keywords: Activated Carbon, Adsorbents, Adsorption, Aqueous-Solution, Basic-Dyes, Carbon, Color Removal, Cost, Decolourisation, Dyes, pH, Removal, Rice Husk Carbon, Saw Dust Carbon, Temperature, Textile Dyes, Waste-Water, Wastewater, Wheat Straw Carbon

? Prakash, A., Solanki, S. and Rao, P.T.S.R. (2008), Adsorption of dyes on sawdust phosphate: Kinetics and equilibrium studies. *Indian Journal of Chemical Technology*, **15** (2), 146-154.

Full Text: [2008\Ind J Che Tec15, 146.pdf](2008/Ind%20J%20Che%20Tec15,%20146.pdf)

Abstract: The distribution coefficients, Kd, for navy brown 3REL, direct red, procion red H8B, methylene blue, metamega chronic yellow and lanasyn green 5 GL, solar violet and procion blue H5G from their aqueous solutions, at pH 3.2 and 7.5 on sawdust phosphate (SDP) have been reported. Effect of pH and added surfactant concentration on the percent removal of lanasyn green 5 GL has been studied. Percent dye removal increases with the decrease in pH. The applicability of the Freundlich and Langmuir equation has been tested for equilibrium data of which Langmuir isotherm model is found to be most appropriate. The values of Langmuir and Freundlich constants as well as the distribution constants show that SDP is a good adsorbent for all dyes, being better for basic dyes. The kinetics of adsorption of lanasyn green 5 GL on SDP was investigated at pH 3.2 and temperatures 25, 30, 35 and 40°C. It is first order with respect to the dye and less than unity with respect to SDP. The values of k(ad), k(p) and k(f) at 30 degrees was found to be 2.18×10-4 s-1, 15.33×10-5 s-1 and 20.72×10-4 s-1 respectively.

Keywords: Activated Carbons, Adsorption, Adsorption Isotherms, Aqueous Solutions, Aqueous-Solutions, Basic-Dyes, Carbonaceous Sorbent, Color Removal, Dye, Dyes, Effect of pH, Equilibrium, Freundlich, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Low-Cost Adsorbents, Methylene Blue, Methylene-Blue, Model, pH, Removal, Sawdust Phosphate, Sorption Dynamics, Textile Dyes, Textile Effluents, Waste-Water

? Satpati, A.K., Palrecha, M.M. and Sundaresan, R.I. (2008), Electrochemical study of the mechanism of interaction of 1,2,3-benzotriazole on SS304 surface in HCl medium. *Indian Journal of Chemical Technology*, **15** (2), 163-167.

Full Text: [2008\Ind J Che Tec15, 163.pdf](2008/Ind%20J%20Che%20Tec15,%20163.pdf)

Abstract: The interaction of 1,2,3, benzotriazole (BTAH) on austenitic stainless steel in HCl medium was Studied. The results are compared with some reported results. Electrochemical Impedance Spectroscopy (EIS) at the OCP at different concentrations of BTAH and potentiodynamic polarization were also Studied to ascertain the mechanism of dissolution of SS304 ill presence and in the absence of BTAH. Parameters like, polarization resistance (R-p), double layer capacitance (C,11), percentage Of surface coverage. etc. were calculated. It was observed that the adsorption of BTAH followed Langmuir-adsorption isotherm. ISIS experiments were performed at different bias potentials. From the measured polarization resistance and capacitance value the potential of zero charge (PZC) of SS304 in 0.2 M HCl was estimated. Adsorption of the inhibitor-followed the Langmuir adsorption isotherm.

Keywords: Adsorption, Adsorption Isotherm, Benzotriazole, Benzotriazole (BTAH), Copper, Corrosion Inhibition, Corrosion Inhibitor, Efficiency, EIS, Impedance, Iron, ISI, Isotherm, Langmuir, Langmuir Adsorption Isotherm, Organic Compounds, Stainless Steel 304, Steel, Sulfuric-Acid

? Abia, A.A. and Asuquo, E.D. (2008), Sorption of Pb(II) and Cd(II) ions onto chemically unmodified and modified oil palm, fruit fibre adsorbent: Analysis of pseudo second order kinetic models. *Indian Journal of Chemical Technology*, **15** (4), 341-348.

Full Text: [2008\Ind J Che Tec15, 341.pdf](2008/Ind%20J%20Che%20Tec15,%20341.pdf)

Abstract: This study examines the sorption kinetics of Pb(II) and Cd(II) ions from aqueous solutions using unmodified and chemically modified oil palm fruit fibre. Four different models of the psuedo-second order equation were used to characterize the metal ion sorption kinetics. The results indicate that different kinetic parameters were obtained from the four forms of the pseudo-second order equations. The chemical modification of the absorbent increased the equilibrium sorption capacity with maximum values of 5.579 mg/g for Pb(II) and 7.980 mg/g for Cd(II) for the 1.0 MOPF absorbents. The coefficient of determination r2 was used to analyse the different pseudo second order equations with the best fit for each of the different metal ions.

Keywords: Aqueous-Solutions, Cadmium, Cadmium, Cassava Waste, Heavy-Metals, Kinetics, Lead, Manihot-Sculenta Cranz, Oil Palm Fibre, Pseudo, Pseudo-Second Order, Removal, Sorption, Sugarcane Bagasse Pith, Tree Fern, Waste Biomass, Zinc Ions

? Rai, S. and Gajbhiye, N.S. (2008), Adsorption of comb-type superplasticizers on calcium carbonate in alkaline medium in presence of electrolytes and rheological properties. *Indian Journal of Chemical Technology*, **15** (4), 349-354.

Full Text: [2008\Ind J Che Tec15, 349.pdf](2008/Ind%20J%20Che%20Tec15,%20349.pdf)

Abstract: Adsorption behaviour of polycarboxylate type superplasticizers (PC) on CaCO3 suspension in a basic medium has been Studied in the presence of NaCl, Na2SO4 and CaCl2 having same ionic strength. The amount of PC adsorbed was found out by determining the amount of PC present in supernatant solution with the help of total organic analyzer. It is found that the adsorption decreased when the POE chain length decreased. The adsorption was increased in presence of CaCl2 while NaCl and Na2SO4 decreased the absorption. The adsorption is not a competitive process but depends on ionic strength. Rheological measurements of suspensions have also shown that lower the POE chain length, higher the viscosity of the CaCO3 suspension.

Keywords: Absorption, Admixture, Adsorption, Behavior, Calcium Carbonate, Cement, Cement, Paste, Polycarboxylate, Superplasticizer

? Sahu, S.K., Verma, V.K., Bagchi, D., Kumar, V. and Pandey, B.D. (2008), Recovery of chromium(VI) from electroplating effluent by solvent extraction with tri-n-butyl phosphate. *Indian Journal of Chemical Technology*, **15** (4), 397-402.

Full Text: [2008\Ind J Che Tec15, 397.pdf](2008/Ind%20J%20Che%20Tec15,%20397.pdf)

Abstract: Recovery of hexavalent Chromium from a model and real electroplating effluent by solvent extraction with tri-n-butyl phosphate (TBP) was studied. In different acid media chromium(VI) extraction with TBP followed the order HCl > H2SO4 similar to HNO3. In acidic chloride medium chromium(VI) was extracted as HCrO3Cl.2TBP. The loading capacity of TBP for chromium(VI) was found to be 5.35 g/L. Stripping of chromium(VI) from loaded TBP was also studied. With 0.1 N NaOH solution chromium(VI) was stripped quantitatively from loaded organic. TBP was also used to recover chromium(VI) and zinc from electroplating effluent collected from an electroplating industry. By simultaneous extraction with TBP, and stripping with 10% H2SO4 and 1N NaOH zinc and chromium(VI) were recovered, quantitatively.

Keywords: Aqueous-Solution, Capacity, Chromium, Chromium(VI), Cr(VI), Electroplating Effluent, Hexavalent Chromium, Kinetics, Liquid-Liquid-Extraction, Metals, Model, Recovery, Removal, Solvent Extraction, Sorption, TBP, Wastes, Zinc

? Lahari, S. and Roy, K. (2008), Investigation on pH dependent uptake of Cr(III) and Cr(VI) by Baker’s yeast. *Indian Journal of Chemical Technology*, **15** (4), 417-419.

Full Text: [2008\Ind J Che Tec15, 417.pdf](2008/Ind%20J%20Che%20Tec15,%20417.pdf)

Abstract: Yeast cells of Saccharomyces cerevisiae were found to accumulate Cr-51(III) radioisotope at basic pH in trace level. There was no uptake of Cr(VI) at the same pH (similar to 10.5). An assay of the products of cell lysis reveals that Cr(III) first gets absorbed at the cell wall and then slowly enters the cytoplasm which increases with time, attains a maximum value and then release the metal ion from cytoplasm. The behavior and uptake kinetics of Cr-51(III) or Cr-51(VI) were studied using gamma-spectrometry.

Keywords: Baker’s Yeast, Biomass, Biosorption, Chromium, Cr(III), Cr(III) and Cr (VI) Uptake, Cr(VI), Hydride Generation, Kinetics, pH, Saccharomyces Cerevisiae, Saccharomyces Cervisiae, Saccharomyces-Cerevisiae, Speciation, Strains, Tolerance, Yeast

? Ghazy, S.E. and Gad, A.H.M. (2008), Separation of Zn(II) by sorption onto powdered marble wastes. *Indian Journal of Chemical Technology*, **15** (5), 433-442.

Full Text: [2008\Ind J Che Tec15, 433.pdf](2008/Ind%20J%20Che%20Tec15,%20433.pdf)

Abstract: Batch adsorption experiments were carried out to remove Zn(II) ions from aqueous solutions and water samples using powdered marble wastes (PMW) as in effective sorbent which is inexpensive, widespread, and Considered as an environmental problem. The parameters such as solution pH, sorbent and Zn(II) concentrations, stirring times, foreign ions and temperature were investigated. The Sorption of Zn(II) ions onto (PMW) is described by Langmuir model. Dubinin-Radushkevich (D-R) isotherm model was also applied to describe the nature of the adsorption of the metal. Thermodynamic parameters, viz, the Gibbs Free energy change (ΔG°), enthalpy (ΔH°) and entropy (ΔS°) were also calculated. These parameters indicated that the adsorption process OF Zn(II) ions on PMW was spontaneous and endothermic in nature. Under the optimum experimental conditions employed, the removal of similar to 100% of Zn(II) ions was attained. The procedure was successfully applied to remove Zn(II) ions from aqueous and different natural water samples. The adsorption mechanism is also suggested.

Keywords: Activated Carbons, Adsorption, Adsorption Mechanism, Aqueous Solutions, Aqueous-Solutions, Copper, Dubinin-Radushkevich Isotherm, Heavy-Metals, Ions, Isotherm, Langmuir, Langmuir Model, Marble Waste, Model, Natural Water, Natural Zeolites, pH, Removal, Separation, Sorbent, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Water, Water Samples, Zinc, Zinc(II) Sorption

? Song, Y.L., Li, J.T. and Chen, H. (2008), Removal of acid brown 348 dye from aqueous solution by ultrasound irradiated exfoliated graphite. *Indian Journal of Chemical Technology*, **15** (5), 443-448.

Full Text: [2008\Ind J Che Tec15, 443.pdf](2008/Ind%20J%20Che%20Tec15,%20443.pdf)

Abstract: Acid brown 348 dye was removed From aqueous solution using ultrasound-assisted adsorption oil exfoliated graphite. The effects of relevant parameters, namely, contact time, sorbent dosage, temperature, initial dye concentration and pH have been investigated. The results show that ultrasound irradiation significantly improves removal of acid brown 348 from aqueous solutions in presence of exfoliated graphite. The ultrasound/exfoliated graphite process yielded 90% removal rate within 120 min using 2.0 g L-1 exfoliated graphite at pH 1 and 40°C.

Keywords: Acid Brown 348, Adsorption, Aqueous Solutions, Azo Dyes, Charcoal, Contact Time, Decolorization, Decolourization, Degradation, Dye, Exfoliated Graphite, Irradiation, Methylene-Blue, Pathways, pH, Removal, Sorbent, Sorption, Temperature, Ultrasound, Waste-Water

? Gogoi, P.K. and Baruah, R. (2008), Fluoride removal from water by adsorption on acid activated kaolinite clay. *Indian Journal of Chemical Technology*, **15** (5), 500-503.

Full Text: [2008\Ind J Che Tec15, 500.pdf](2008/Ind%20J%20Che%20Tec15,%20500.pdf)

Abstract: When drinking water contains excess fluoride it causes health hazards to human beings. In the present investigation the removal of fluoride has been attempted using acid activated kaolinite clay obtained front local traditional potter of Majuli river island, Assam. The clay was characterized by chemical analysis, IR, XRD data and thermal analysis. The clay was activated with colic. H2SO4. The fluoride removal studies were done by adsorption method on raw clay and acid activated clay. The effects of contact time, approximate particle size, pH and temperature were investigated. The adsorption followed Langmuir isotherm. The results show that acid activated kaolinite clay is effective for defluoridation of water while raw kaolinite has very low defluoridation capacity due to low adsorption.

Keywords: Activated Kaolinite, Adsorption, Adsorption Isotherms, Analysis, Capacity, Clay, Contact Time, Defluoridation, Drinking Water, Drinking-Water, Fluoride, Fluoride Removal, Ions, Isotherm, Kaolinite, Langmuir, Langmuir Isotherm, Majuli Clay, Montmorillonite Clay, pH, Removal, Temperature, Water, XRD

? Karthikeyan, M. and Elango, K.P. (2008), Removal of fluoride from aqueous solution using graphite: A kinetic and thermodynamic study. *Indian Journal of Chemical Technology*, **15** (6), 525-532.

Full Text: [2008\Ind J Che Tec15, 525.pdf](2008/Ind%20J%20Che%20Tec15,%20525.pdf)

Abstract: Batch sorption system using various grades of graphite as adsorbents was investigated to remove fluoride, ions from aqueous solutions. The system variables studied include initial concentration of the sorbate, agitation time, adsorbent close, pH, co-ions and temperature. The experimental data fitted well to the Freundlich and Langmuir isotherms. Thermodynamic parameters such as Delta H degrees, Delta S degrees and Delta G degrees were calculated which indicated that the adsorption was endothermic and a physical process. Kinetic studies reveal that the adsorption follows reversible first order kinetics. XRD patterns of the adsorbent before and after adsorption were recorded to get a better in sight into the mechanism of the adsorption process.

Keywords: Activated Carbon, Adsorption, Adsorption-Kinetics, Alumina, Aqueous Solutions, Defluoridation, Dye, Earth, Equilibrium, Fluoride, Freundlich, Graphite, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Isotherms, Metal-Ions, pH, Pith, Removal, Sorption, System, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Water, XRD

? Nath, K., Thummar, M., Vaghela, M. and Jani, P. (2008), Sorption of phenol from aqueous solution using activated carbon prepared from Manilkara zapota seed. *Indian Journal of Chemical Technology*, **15** (6), 533-540.

Full Text: [2008\Ind J Che Tec15, 533.pdf](2008/Ind%20J%20Che%20Tec15,%20533.pdf)

Abstract: The potential of activated carbon prepared from the seeds of Manilkara zapota, an agricultural waste, was assessed for dephenolation from aqueous solution. ZnCl2 was used as the activating agent. Batch adsorption experiments were conducted to study the effect of various physicochemical parameters such as initial concentration, close of adsorbent, initial pH, and temperature. The precentage removal of phenol was found to increase with the decrease in initial concentration of phenol. Maximum removal efficiency of 96% was achieved with 25 mg/L of initial phenol concentration it pH 4.0 and temperature 30°C. Equilibrium modelling by linearized adsorption isotherms revealed that Freundlich isotherm could Well represent the observed data for phenol adsorption oil activated carbon as compared to Langmuir isotherm. Thermodynamic studies revealed that the sorption of pheno by activated carbon is ail endothermic process, showing increase ill sorption at higher temperature. Comparison or various kinetic models based oil correlation coefficients revealed that the pseudo second order model, an indication of chemisorption mechanism, fits better the experimental data than the pseudo first order Lagergren model.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption, Adsorption Isotherms, Agricultural, Agricultural Solid-Waste, Agricultural Waste, Aqueous Solution, Batch Adsorption, Carbon, Chemisorption, Concentration, Copper(II), Correlation, Data, Dye, Efficiency, Endothermic, Equilibrium, Experimental, Experiments, First, First Order, Freundlich, Freundlich Isotherm, Indication, Ions, Isotherm, Isotherms, Kinetic, Kinetic Models, Kinetics, Lagergren, Lagergren Model, Langmuir, Langmuir Isotherm, Mechanism, Model, Modelling, Models, NOV, Peat, pH, Phenol, Potential, Process, Pseudo, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Removal, Removal Efficiency, Second Order, Second-Order, Separation, Solution, Sorption, Temperature, Thermodynamic, Waste, Water, ZnCl2

? Khan, A.M., Gautam, S. and Ganai, S.A. (2008), Sorption studies on cresol red modified Amberlite IR400 (Cl-) resin: Binary and selective separation of Hg2+ ions. *Indian Journal of Chemical Technology*, **15** (6), 541-546.

Full Text: [2008\Ind J Che Tec15, 541.pdf](2008/Ind%20J%20Che%20Tec15,%20541.pdf)

Abstract: Strong acid anion exchange resin Amberlite IR400 (Cl-) has been modified by sorption of cresol red. Equibration studies Such as concentration, pH, time and temperature of the reagent on the adsorption of dye have been studied. The maximum uptake of cresol red was found to be 2.20 μmol per 0.3×103 g resin at pH 1.0. On the basis of K-d values in solvents having different polarity and dissociation constant, important binary separations of metal ions namely Pb2+, Bi3+, Mn-2+,Mn- Zn-2+,Zn- Ni2+, S-4, Hg2+, Mg2+, Zr4+, Ca2+, Ba2+ and Sr2+ have been achieved. To check the selectivity and the reproducibility or the method, separation of different amounts of Hg2+ has been achieved in a synthetic mixture containing Fe3+ (5.58 mg), Cu2+ (6.35 mg), Al3+ (2.69 mg) and Ni2+ (5.68 mg). The results show that the cresol red modified resin may be used for the removal of Hg2+ from industrial and domestic wastes. Results also indicate that the modified resin may also be suitable as a packing material in column chromatography for pre-concentration and recovery of some metal ions from industrial effluents and wastewater.

Keywords: Adsorption, Amberlite IR400 (Cl-), Anion Exchange Resin, Cresol Red, Cu2+, Dye, Exchange, Exchange Resin, Industrial Effluents, Mercury Separation, Metal Ions, Metal-Ions, Ni2+, Pb2+, pH, Preconcentration, Removal, Sorption, Temperature, Wastewater

? Hema, M. and Arivoli, S. (2009), Rhodamine B adsorption by activated carbon: Kinetic and equilibrium studies. *Indian Journal of Chemical Technology*, **16** (1), 38-45.

Full Text: [2009\Ind J Che Tec16, 38.pdf](2009/Ind%20J%20Che%20Tec16,%2038.pdf)

Abstract: A carbonaccous adsorbent (TPC) prepared from Thespusia populinia bark by acid treatment was tested for its efficiency in removing Rhodamine B (RDB). The parameters studied include agitation time, initial dye concentration, carbon dose, pH and temperature. The adsorption followed first order reaction equation and the rate is mainly controlled by intra-particle diffusion. Freundlich and Langmuir isotherm models were applied to the equilibrium data. The adsorption capacity (Q(m)) obtained from the Langmuir isotherm plots were 60.836, 64.239, 68.695 and 77.178 mg/g respectively at an initial pH of 7.0 at 30, 40, 50 and 60°C. The temperature variation study showed that the RDB adsorption is endothermic and spontaneous with increased randomness at the solid solution interface. Significant effect on adsorption was observed on varying the pH of the RDB solutions. Almost 79% removal of RDB was observed at 60°C. The Langmuir and Freundlich isotherms obtained, positive Delta H degrees value, pH dependent results and desorption of dye in mineral acid suggest that the adsorption of RDB on TPC involved physisorption mechanism.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Adsorption Isotherm, Agricultural Waste, Aqueous-Solution, Basic Dye, Capacity, Desorption, Diffusion, Dye, Equilibrium, Freundlich, Husk, Intraparticle Diffusion, Isotherm, Isotherm Models, Isotherms, Kinetic, Kinetic and Thermodynamic Parameters, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Isotherm, Models, Peel, pH, Removal, Rhodamine B, Rhodamine B (RDB), Temperature, Thespusia Populinia Bark Carbon (TPC), Treatment

? Ćurković, L., Trgo, M., Mioč, A.R. and Medvidović, N.V. (2009), Removal of Cu and Pb ions from aqueous solutions by electric furnace slag: Kinetic and thermodynamic aspects. *Indian Journal of Chemical Technology*, **16** (1), 84-88.

Full Text: [2009\Ind J Che Tec16, 84.pdf](2009/Ind%20J%20Che%20Tec16,%2084.pdf)

Abstract: Electric furnace slag, instead of deposition as a non-toxic metallurgical waste material, can be used as a valuable secondary raw material in many industrial processes. In this paper, removal of copper and lead ions from aqueous solutions by sorption on electric furnace slag (EFS) has been investigated. Experiments were performed at three temperatures of 23, 40 and 55°C. The results of sorption kinetics are tested by kinetic model that describes intraparticle diffusion, and diffusion coefficients have been calculated. Diffusion rate of both systems increases with temperature, in dependence of time is constant for copper ions, while for lead decreases. The energy of activation (E-a), activation enthalpy (ΔH°), activation entropy (ΔS°) and free energy of activation (ΔG°) have been calculated based on kinetic data. Values of E-a characterize binding of lead and copper ions on EFS as activated chemisorption, whereas positive values of ΔH°, ΔG° and negative values of ΔS° describe process as endothermic, nonspontaneous and without changes in the structure of the solid particle. The studies showed that this low cost waste material Could be used as an efficient sorbent material for the removal of lead and copper from aqueous solutions.

Keywords: Activated Slag, Adsorption, Aqueous Solutions, By-Product, Clinoptilolite, Column Operations, Copper, Cost, Diffusion, Electric Furnace Slag, Equilibrium Uptake, Kinetic, Kinetic Model, Kinetics, Lead, Lead Removal, Model, Parameters, Removal, Sorbent, Sorption, Sorption Dynamics, Sorption Kinetics, Temperature, Thermodynamic, Thermodynamic Parameters, Waste-Water

? Singh, A.P., Srivastava, K.K. and Shekhar, H. (2009), Arsenic(III) removal from aqueous solutions by mixed adsorbent. *Indian Journal of Chemical Technology*, **16** (2), 136-141.

Full Text: [2009\Ind J Che Tec16, 136.pdf](2009/Ind%20J%20Che%20Tec16,%20136.pdf)

Abstract: The removal of As(III) from its aqueous solutions by adsorption on homogeneous mixture of china clay and fly ash in equal proportions has been found to be dependent on various operating parameters such as concentration, temperature and pH. The As(III) removal is favourable at low concentration, high temperature and slightly basic condition at pH 8.0. The applicability of Langmuir isotherm in present system suggests the formation of monolayer coverage of As(III) molecules at the outer surface of the adsorbent. Thermodynamic parameters indicate the spontaneous and endothermic nature of the process. Adsorption kinetics studied using the model suggested by Lagergren infers a first order rate expression.

Keywords: Activated Carbon, Adsorption, Adsorption Kinetics, Aqueous Solutions, Arsenic, As(III) Adsorption, Cadmium(II), China Clay, Clay, Fly Ash, Fly-Ash, High Temperature, Interface, Ions, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Model, Molecules, Operating Parameters, pH, Removal, System, Temperature, Thermodynamic, Thermodynamic Parameters

? Uddin, M.T., Rukanuzzaman, M., Khan, M.M.R. and Islam, M.A. (2009), Jackfruit (*Artocarpus heterophyllus*) leaf powder: An effective adsorbent for removal of methylene blue from aqueous solutions. *Indian Journal of Chemical Technology*, **16** (2), 142-149.

Full Text: [2009\Ind J Che Tec16, 142.pdf](2009/Ind%20J%20Che%20Tec16,%20142.pdf)

Abstract: Batch sorption experiments were carried out using jackfruit leaf powder (JLP), for the removal of methylene blue (MB) from aqueous solutions. Effects of process parameters pH, adsorbent mass, concentration and contact time were studied. The amount of MB adsorbed per unit weight of the adsorbent increased with the increase of pH, concentration and contact time. The pH at the point of zero charge (pHpzc) of the adsorbent was found to be 3.9. Adsorption of M B was found highly pH dependent. The FTIR of the adsorbent was done to find the potential adsorption sites for interaction with the cationic MB dye. Equilibrium data were fitted to Langmuir and Freundlich isotherms. The equilibrium data were best represented by both the isotherms. Maximum dye uptake was found to be 326.32 mg/g, indicating that JLP call be used as ail excellent low-cost adsorbent for removal of MB dye. From experimental data it was found that adsorption of MB onto JLP followed Pseudo second order kinetics. The desorption studies showed that most of the MB call be recovered by decreasing the pH of the solution. The experimental result inferred that electrostatic attraction between the surface and the dye is one of the major adsorption mechanisms for binding MB to JLP surface.

Keywords: Adsorption, Adsorption Characteristics, Basic-Dyes, Behavior, Biosorption, Isotherms, Jackfruit Leaf Powder, Kinetics, Kinetics, Methylene Blue, Palm-Fruit Bunch, Solid-Waste, Sorption, Waste-Water, Water-Hyacinth

? Dave, P.N., Subrahmanyam, N. and Sharma, S. (2009), Kinetics and thermodynamics of copper ions removal from aqueous solution by use of activated charcoal. *Indian Journal of Chemical Technology*, **16** (3), 234-239.

Full Text: [2009\Ind J Che Tec16, 234.pdf](2009/Ind%20J%20Che%20Tec16,%20234.pdf)

Abstract: A study on the adsorption of copper from aqueous solutions on activated charcoal has been carried out with an aim to obtain information on treating effluents from metal finishing industries. The effects of various experimental parameters like contact time, dosage of activated charcoal, initial concentration of metal ions, pH etc. have been investigated. The percentage removal of metal ions increased with the decrease in initial concentration and increase in contact time, dosage of adsorbent and initial pH. Adsorption data were modeled with the Freundlich and Langmuir adsorption isotherms, various first order kinetic equations viz. Lagergren, Natarajan-Khalaf and Bhattacharya and Venkobachar equations and intra particle diffusion model. These isotherms, first order equations and models were found to be applicable. The kinetics of adsorption is found to be first order with intra particle diffusion as the rate determining step. Removal of metal ions using activated charcoal is found to be favourable and hence it could be used as an adsorbent for the treatment of effluents from metal finishing industries, especially for the removal of metal ions.

Keywords: Activated Charcoal, Adsorbent, Adsorption, Adsorption, Adsorption Isotherms, Adsorption Model, Aqueous Solutions, Basic-Dyes, Carbon, Contact Time, Copper, Diffusion, Equilibrium, Freundlich, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Metal Ions, Model, Models, pH, Pore, Removal, Thermodynamics, Treatment

? Kant, R. and Rattan, V.K. (2009), Adsorption of dye Green B from a textile industry effluent using two different samples of activated carbon by static batch method and continuous process. *Indian Journal of Chemical Technology*, **16** (3), 240-244.

Full Text: [2009\Ind J Che Tec16, 240.pdf](2009/Ind%20J%20Che%20Tec16,%20240.pdf)

Abstract: Removal of dye Green B using two different samples of activated carbon by static-batch method and continuous process was studied. Experimental data on optical density of blank solutions of different concentrations ranging from 10 to 100mg/L and optical density of solutions after adsorption on activated carbon samples were taken and analyzed. Calibration curves were plotted and the amount of dye adsorbed was calculated. The data was fitted to Langmuir and Freundlich isotherms for two different carbon samples and concentration values. Constants were calculated from the slope and intercept values of the isotherm. Coefficient of correlation R-2 and standard deviation SD were also noted. The data fitted well to the isotherms. Carbon sample C-1 showed considerably higher potential to adsorb the dye Green B as compared to carbon sample C-2. Adsorption was better in batch process in respect to continuous flow method. From the analysis of the data it is shown that both activated carbon samples had a good capacity to remove the textile dye from the residue wastewater.

Keywords: Activated Carbon, Adsorption, Analysis, Batch, Capacity, Carbon, Density, Dye, Freundlich, Green B, Isotherm, Isotherms, Langmuir, Langmuir and Freundlich Isotherms, Removal, Textile Industry Effluent, Wastewater

? Tharanitharan, V. and Srinivasan, K. (2009), Removal of Ni(II) from water and wastewater using modified Duolite XAD-761 resin. *Indian Journal of Chemical Technology*, **16** (3), 245-253.

Full Text: [2009\Ind J Che Tec16, 245.pdf](2009/Ind%20J%20Che%20Tec16,%20245.pdf)

Abstract: Complete mixing of cross-linked 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. FT-IR studies showed that the immobilization of the extractants results from hydrophobic interaction between the alkyl group of the extractants and phenyl group of the support, and also from other mechanisms like polar or electrostatic forces. The modified resin was used in batch adsorption experiments for the removal of Ni(II) were carried out as a function of agitation time, pH, adsorbent dosage and adsorption capacity. Adsorption data could be interpretated by Langmuir and Freundlich equations. The results showed that the adsorption kinetics of Ni(II) on modified XAD-761 resin could be best described by the pseudo-second-order model. SEM studies revealed the morphological observations of the pure resin, modified resin and Ni(II) adsorbed modified resin. The adsorbent was also tested for the removal of Ni(II) from synthetic wastewater.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Amberlite XAD-4, Aqueous-Solution, Atomic-Absorption Spectrometry, Biosorption, Chromium(VI), Duolite XAD-761, EDTA, Extraction, FT-IR, Kinetics, Metal Ions, Ni(II) Adsorption, SDOSS, SEM, Wastewater, XAD7 Impregnated Resins

? Mohapatra, M., Khatun, S. and Anand, S. (2009), Adsorption behaviour of Pb(II), Cd(II) and Zn(II) on NALCO plant sand. *Indian Journal of Chemical Technology*, **16** (4), 291-300.

Full Text: [2009\Ind J Che Tec16, 291.pdf](2009/Ind%20J%20Che%20Tec16,%20291.pdf)

Abstract: Present investigation evaluates the adsorption of Pb(II), Cd(II) and Zn(II) ions on plant sand of National Aluminum Company, Orissa, India. The XRD pattern and FTIR spectra showed goethite, alumina and silica as the major phases in the sand. Effects of various parameters such as time, pH, temperature, metal ions and adsorbent concentrations were studied. The adsorption followed pseudo second order kinetics for all the three cations. The proton stoichiometry was dependent on the nature of the metal ion showing the order Zn(II)>Cd(II)>Pb(II). The adsorption was found to be in the order Zn(II)>Cd(II)> Pb(II) with loading capacities of 47.79, 42.2 and 22.8 mg g-1 of plant sand sample. The adsorption data was fitted to various models. The thermodynamic parameters Δ*G*°, Δ*H*° and Δ*S*° have been evaluated. The XRD patterns of Pb(II) adsorbed plant sand sample showed that the crystallinity of silica phase was affected with the appearance of (110) plane and disappearance of (011) plane. It also disturbed the (110) plane of goethite. Cd(II) adsorbed sample showed disappearance of (011) plane of silica phase and transformation of alumina phase Al2O3 to sigma-Al2O3. The adsorption of Zn(II) showed. prominence of (110) plane of goethite with disappearance of sigma-Al2O3 phase.

Keywords: Adsorbent, Adsorption, Alumina, Behaviour, Cadmium, Cd(II), Crystallinity, Data, Fly-Ash, FTIR, FTIR Spectra, Goethite, Goethite Alpha-Feooh, Heavy Metal Ions, India, Investigation, Ions, Isotherms, Kinetics, Kinetics, Loading, Metal, Metal Ion, Metal Ions, Models, Pattern, Pb(II), pH, Plant, Plant Sand, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Removal, Retention, Sand, Second Order, Second Order Kinetics, Second-Order, Silica, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Transformation, XRD, Zinc, Zn(II), Zn(II) Ions

? Sivakumar, P. and Palanisamy, P.N. (2009), Packed bed column studies for the removal of Acid blue 92 and Basic red 29 using non-conventional adsorbent. *Indian Journal of Chemical Technology*, **16** (4), 301-307.

Full Text: [2009\Ind J Che Tec16, 301.pdf](2009/Ind%20J%20Che%20Tec16,%20301.pdf)

Abstract: The adsorptive removal of Acid blue 92 and Basic red 29 dyes was achieved using a packed column prepared by Euphorbia antiquorum L activated carbon. The effects of various factors like influent concentration, flow rate and bed height were analysed. The column experiments using Euphorbia antiquorum L activated carbon showed that adsorption efficiency increases with increase in the influent concentration and bed depth and decreases with increasing flow rate. Column adsorption performance was evaluated using Thomas and Yoon-Nelson kinetic models. The adsorption capacity calculated by Thomas and Yoon-Nelson models were compared with the experimental adsorption capacity. The Yoon-Nelson model describes the adsorption behaviour of the selected adsorbent-adsorbate system more reasonably than Thomas model and Basic red 29 adsorption behaviour fits exceptionally well with the Yoon-Nelson model.

Keywords: Acid Blue 92, Activated Carbon, Activated Carbons, Adsorption, Adsorption, Adsorption Capacity, Aqueous-Solution, Basic Red 29, Biosorption, Capacity, Column, Dried Rhizopus-Arrhizus, Dye, Dyes, Euphorbia Antiquorum L, Fixed Bed Column, Ions, Kinetic, Kinetic Models, Methylene-Blue, Model, Models, Removal, Rice Husk, Sorption, System, Thomas Model

? Kumar, P.R., Rao, M.V., Babu, N.C., Kumar, P.V.R. and Venkateswarlu, P. (2009), Utilization of Erythrina variegata orientalis leaf powder for the removal of cadmium. *Indian Journal of Chemical Technology*, **16** (4), 308-316.

Full Text: [2009\Ind J Che Tec16, 308.pdf](2009/Ind%20J%20Che%20Tec16,%20308.pdf)

Abstract: Removal of cadmium, a priority pollutant, is carried out by abundantly and freely available Erythrina variegata orientalis (Indian coral tree) leaf powder. The extent of removal depends on initial concentration of cadmium in the solution, pH of the solution, temperature, etc. A significant increase in percentage removal of cadmium is observed as pH is increased from 2 to 4. The percentage removal of cadmium increases marginally for pH of 4 to 7. As the initial concentration of cadmium is increased from 23 to 188 mg/L, the % removal is decreased from 98.8 to 86.1%. Freundlich and Langmuir isotherm models well describe the data indicating favourable biosorption. The biosorption is endothermic, irreversible and follows pseudo-second-order kinetics, and rate constant is 0.23 g/(mg-min) for a dosage of 40 g/L. The equilibrium agitation time is 50 min.

Keywords: Adsorption, Agitation, Aqueous-Solutions, Biosorbent, Biosorption, Cadmium, Cd(II), Concentration, Data, Endothermic, Equilibrium, Erythrina Variegata Orientalis, Freundlich, Ions, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Models, pH, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Rate Constant, Removal, Solution, Temperature, Thermodynamics, Waste-Water

? Borah, L. and Dey, N.C. (2009), Removal of fluoride from low TDS water using low grade coal. *Indian Journal of Chemical Technology*, **16** (4), 361-363.

Full Text: [2009\Ind J Che Tec16, 361.pdf](2009/Ind%20J%20Che%20Tec16,%20361.pdf)

Abstract: Defluoridation of ground water using low grade Assam coal as an adsorbent is studied by batch sorption experiments. Effect of the variables, like quantity of adsorbent, contact time, particle size of the adsorbent are examined to establish the optimum conditions. The results show that the low grade Assam coal, collected from Tirap colliery of the North Eastern coalfield, after pretreatment, can be used as an effective adsorbent in removing fluoride from ground water. The optimum conditions for the efficient removal of fluoride are observed to be (i) quantity of adsorbent = 1.25 g in 100 mL water, (ii) contact time = 60 min, (iii) particle size of adsorbent = -72 BSS or lower.

Keywords: Adsorption, Adsorption, Batch, Contact Time, Defluoridation, Defluoridation, Fluoride, Fluorosis, India, Low Grade Coal, Pretreatment, Removal, Sorption, Water

? Tharanitharan, V. and Srinivasan, K. (2009), Removal of Pb(II) from aqueous solutions by using dioctyl sodium sulphosuccinate-EDTA modified Amberlite XAD-7HP rein. *Indian Journal of Chemical Technology*, **16** (5), 417-425.

Full Text: [2009\Ind J Che Tec16, 417.pdf](2009/Ind%20J%20Che%20Tec16,%20417.pdf)

Keywords: Acid, Activated Carbon, Adsorbent, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Amberlite XAD-7HP Resin, Aqueous Solution, Aqueous Solutions, Atomic-Absorption Spectrometry, Cationic Surfactant, Changes, Chelating Resins, Contact Time, Dioctyl Sodium Sulphosuccinate, EDTA, Equilibrium, Freundlich, FTIR, FTIR Studies, Function, Heavy Metal, Heavy Metal Ions, Impregnation, Interaction, Ions, Isotherm, Isotherm Equations, Isotherms, Kinetics, Langmuir, Lead, Lead(II), Lead(II) Removal, Metal, Metal Ions, Mixing, Model, Models, Modified, NaCl, Pb(II), pH, Polymeric, Precious Metals, Preconcentration, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Resin, Resins, SEM, Sodium, Solid-Phase Extraction, Solution, Solutions, Support, Trace-Metal Ions, Treatment, Wastewater, XAD7 Impregnated Resins

? Sen Gupta, S. and Bhattacharyya, K.G. (2009), Treatment of water contaminated with Pb(II) and Cd(II) by adsorption on kaolinite, montmorillonite and their acid-activated forms. *Indian Journal of Chemical Technology*, **16** (6), 457-470.

Full Text: [2009\Ind J Che Tec16, 457.pdf](2009/Ind%20J%20Che%20Tec16,%20457.pdf)

Abstract: Removal of Pb(II) and Cd(II) from spiked water samples by adsorption on clays was studied in this work as a model for water treatment. Kaolinite and montmorillonite were used as the clay adsorbents and they were further activated by treating with 0.25 M H2SO4. All the adsorbents were characterized with respect to surface area, cation exchange capacity and structural features as revealed with XRD and FTIR measurements. The adsorption experiments were carried out in a batch process with the variation of initial concentration of metal ions, amount of clay, pH, time and temperature. The adsorption was favoured at higher pH. The clay-Pb(II) interactions attained equilibrium at 180 min, whereas clay-Cd(II) system required 240 min to reach the same. Both the systems follow second order kinetic model. Montmorillonite and its acid-treated form had better adsorption properties. The Langmuir monolayer capacity varied from 11.1 to 34.0 mg/g and from 9.9 to 33.2 mg/g for Pb(II) and Cd(II) ions, respectively depending on the clay. Pb(II) adsorbed exothermally while the processes were endothermic with Cd(II). Kaolinite, montmorillonite and their acid activated forms have good potential for taking up Pb(II) and Cd(II) from aqueous medium.

Keywords: Acid-Activated Clays, Adsorbents, Adsorption, Adsorption Properties, Aqueous Medium, Aqueous-Solution, Batch, Batch Process, Bed Sediments, Cadmium Adsorption, Capacity, Cation, Cation Exchange, Cd(II), Cd(II) Ions, Clay, Clays, Concentration, Endothermic, Equilibrium, Experiments, Forms, FTIR, Heavy-Metals, Ions, Kaolinite, Kinetic, Kinetic Model, Kinetics, Langmuir, Lead(II) Ions, Metal, Metal Ions, Model, Monolayer, Montmorillonite, NOV, Pb(II), pH, *Pinus-sylvestris*, Potential, Removal, Second Order, Second-Order, Surface, Surface Area, Systems, Temperature, Treatment, Waste-Waters, Water, Water Samples, Water Treatment, Work, XRD

? Subha, R. and Namasivayam, C. (2009), Zinc chloride activated coir pith carbon as low cost adsorbent for removal of 2,4-dichlorophenol: Equilibrium and kinetic studies. *Indian Journal of Chemical Technology*, **16** (6), 471-479.

Full Text: [2009\Ind J Che Tec16, 471.pdf](2009/Ind%20J%20Che%20Tec16,%20471.pdf)

Abstract: Activated carbon prepared from coir pith (ZnCPC) using ZnCl2 was investigated to find the feasibility of its application for removal of 2,4-dichlorophenol (2,4-DCP) in aqueous Solution through adsorption process. Batch mode kinetics and isotherm studies were carried out to evaluate the effects of contact time, initial concentration, adsorbent dose, pH, and temperature. Lagergren, Second order, and Banghams were used to fit the experimental data. Langmuir, Freundlich, Dubinin-Radushkevich and Temkin isotherm models have been employed to analyse the adsorption equilibrium data. The Langmuir adsorption capacity, Q(o) was found to be 131.6 mg/g of the adsorbent. The pH effect and desorption studies showed that ion exchange mechanism was involved in the adsorption process. Adsorption of 2,4-DCP by ZnCPC was spontaneous. The results indicated that ZnCPC was an effective adsorbent for removing 2,4-DCP from water.

Keywords: 2,4-DCP, 2,4-Dichlorophenol, Activated Carbon, Adsorption, Adsorption Capacity, Agricultural Solid-Waste, Aqueous-Solutions, Capacity, Chemical Activation, Chlorophenols, Coir Pith, Contact Time, Cost, Desorption, Dyes, Equilibrium, Equilibrium Isotherms, Exchange, Freundlich, Heavy-Metals, Ion Exchange, Isotherm, Isotherm Models, Kinetic, Kinetics, Langmuir, Low Cost Adsorbent, Models, Pentachlorophenol, pH, Phenol, Removal, Temkin, Temperature, Water, Zinc

? Badii, K., Ardejani, F.D., Saberi, M.A., Limaee, N.Y. and Shafaei, S.Z.E.D. (2010), Adsorption of Acid blue 25 dye on diatomite in aqueous solutions. *Indian Journal of Chemical Technology*, **17** (1), 7-16.

Full Text: [2010\Ind J Che Tec17, 7.pdf](2010/Ind%20J%20Che%20Tec17,%207.pdf)

Abstract: The adsorption of Acid blue 25 (AB 25) dye from aqueous medium on diatomite was studied. The effects of pH, contact time, initial dye concentration, calcinations and sorbent dosage on the adsorption process were examined and optimum experimental conditions were identified. The maximum removal of dye was obtained under acidic conditions, in particular, at pH 2, but pH 8 was more suitable for industrial purposes. The percentage removal of dye decreased with an increase in initial concentration. Also, the results indicated that an increase in temperature raised the percentage removal of dye. The maximum percentage removal of AB 25 dye from aqueous solution using raw diatomite at pH 2, temperature 25±1ºC, agitation speed of 200 rpm, initial dye concentration of 50 mg/L, and for a mixing time period of 300 min was 72.81% (64.22% at pH 8). Furthermore, under same conditions, the maximum adsorption of dye on calcined diatomite was 54.5%. The experimental data showed that the adsorption of dye on raw diatomite follows the Langmuir model, but its adsorption on calcined diatomite followed the Freundlich model. The kinetics effect of the adsorbent was pseudo-second-order.

Keywords: Acid Blue 25, Adsorbent, Adsorption, Agitation, Anionic Dyes, Aqueous Medium, Aqueous Solution, Aqueous Solutions, Basic Dye, Calcinations, Calcined, Color Removal, Concentration, Congo-Red, Data, Diatomite, Direct Red-80, Dye, Dye Removal, Equilibrium, Experimental, Freundlich, Freundlich Model, Industry Waste-Water, Isotherms, Kinetics, Langmuir, Langmuir Model, Mixing, Model, Orange Peel, pH, Pseudo Second Order, Pseudo-Second-Order, Removal, Solution, Solutions, Sorbent, Sorption, Temperature, Textile Dyes, Time

? Bajpai, A.K. and Rai, L. (2010), Removal of chromium ions from aqueous solution by biosorption on to ternary biopolymeric microspheres.  *Indian Journal of Chemical Technology*, **17** (1), 17-27.

Full Text: [2010\Ind J Che Tec17, 17.pdf](2010/Ind%20J%20Che%20Tec17,%2017.pdf)

Abstract: Ternary biopolymeric microspherers of chitosan, yeast and gelatin were prepared and characterized by FTIR spectral analysis, particle size measurements and scanning electron micrograph techniques. Static and dynamic adsorption studies of chromium ions were performed onto the surface of the prepared microspheres at fixed pH and ionic strength of the aqueous solution. The adsorption data were supplied to Langmuir and Freundlich isotherm equations and various static parameters were calculated. The dynamic nature of the adsorption was quantified in terms of several kinetic constants such as rate constants for adsorption. Lagregreen rate constant, and interparticle diffusion rate constant and pore diffusion coefficient. The influence of various parameters such as solid to liquid ratio, pH, temperature, and chemical composition of biopolymeric microspheres were investigated on the adsorption of dichromate ion. Various thermodynamic parameters were also calculated.

Keywords: Adsorption, Alginate, Analysis, Biomass, Biosorbent, Biosorption, Chemical Composition, Chitosan, Chromium, Chromium Removal, Copper(II), Cr(VI) Ions, Diffusion, Equilibrium, Freundlich, Freundlich Isotherm, FTIR, Gelatin, Heavy-Metals, Isotherm, Kinetic, Langmuir, Langmuir and Freundlich Isotherm, pH, Pore, Removal, Saccharomyces-Cerevisiae, Sorption, Temperature, Ternary Biopolymer Microspheres, Thermodynamic, Thermodynamic Parameters, Yeast

? Gopal, V. and Elango, K.P. (2010), Studies on defluoridation of water using magnesium titanate. *Indian Journal of Chemical Technology*, **17** (1), 28-33.

Full Text: [2010\Ind J Che Tec17, 28.pdf](2010/Ind%20J%20Che%20Tec17,%2028.pdf)

Abstract: Batch sorption system using magnesium titanate as an adsorbent was investigated to remove fluoride ions from the aqueous solution. The amount of fluoride adsorbed from 4 mg L-1 of fluoride solution at 30°C was found to be 0.029 mg g-1. The system variables studied include initial concentration of the sorbate (2-10 mg L-1), adsorbent dose (0.5-5 g/50 mL), agitation time (5-60 min), pH (3-11), co-ions (Cl-, SO42-, NO3-, and HCO3-) and temperature (30-50°C). The experimental data fitted satisfactorily (r>0.97) to the Langmuir isotherms. Thermodynamic parameters such as Delta H degrees, Delta S degrees and Delta G degrees concluded the adsorption is endothermic. The magnitude of the enthalpy change (20-45 kJ mol-1) indicated that the mechanism of adsorption process involves physisorption.

Keywords: Activated Carbon, Adsorption, Adsorption, Defluoridation, Equilibrium, Fluoride, Fluoride Removal, Isotherms, Langmuir, Langmuir Isotherms, Magnesium Titanate, pH, Sorption, System, Temperature, Thermodynamic, Thermodynamic Parameters, Water

? Nath, S.K. and Dutta, R.K. (2010), Fluoride removal from water using crushed limestone. *Indian Journal of Chemical Technology*, **17** (2), 120-125.

Full Text: [2010\Ind J Che Tec17, 120.pdf](2010/Ind%20J%20Che%20Tec17,%20120.pdf)

Abstract: An examination of defluoridation by industrial grade limestone indicated that a combination of precipitation and adsorption of fluoride can be more effective for defluoridation of water. Pre-acidified fluoride water using two edible acids, viz., acetic acid (AA) and citric acid (CA) have been used for treatment by crushed limestone of diameter 3-4 mm to precipitate fluoride as CaF2 in addition to adsorption of fluoride on limestone. The study has been carried out in batches by varying the acid concentration and contact time. Addition of the acids to the water before treatment with the crushed limestone in batch tests significantly improved the fluoride removal and this increased with the increase in the concentrations of the acids. The concentration of CA and AA required bringing down the fluoride concentration from 10 to 1.5 mg/L, are 0.05 M and 0.033 M, respectively, when the crushed limestone chips sample was used for the first time with contact time of 12 h. The acids are neutralized by limestone during the defluoridation process and the resulting final pH of the treated water was found lobe in the ranges of 6.2 and 7.0 for CA and 5.7 and 7.0 for AA.

Keywords: Acetic Acid, Adsorption, Assam, Batch, Batch Tests, Brackish-Water, Calcite, Calcite, Citric Acid, Contact Time, Defluoridation, Defluoridaton, Donnan Dialysis, Drinking-Water, Electrodialysis, Fluoride, Fluoride Removal, India, Limestone, pH, Precipitation, Removal, Treatment, Water

? Li, J.T., Bai, B. and Song, Y.L. (2010), Degradation of Acid orange 3 in aqueous solution by combination of fly ash/H2O2 and ultrasound irradiation. *Indian Journal of Chemical Technology*, **17** (3), 198-203.

Full Text: [2010\Ind J Che Tec17, 198.pdf](2010/Ind%20J%20Che%20Tec17,%20198.pdf)

Abstract: An efficient and convenient method for degradation of Acid orange 3 (AO3) dye from aqueous solution by combination of Fly ash/H2O2 and ultrasound irradiation is reported. The effects of the relevant operating conditions (pH value, dye concentration, H2O2 concentration, dosage of Fly ash and different reaction system) on the degradation of AO3 were also observed. The combination method was found to be effective and could yield better results than either sonolysis or Fenton-like oxidation individually. Removal of 96% was obtained under the optimum conditions (dye concentration, 100 mg/L; H2O2, 5.4 mM; Fly ash, 2.5 g/L; pH 3, ultrasonic irradiation frequency of 25 kHz, room temperature). The process of the degradation follows Behnajady’s kinetic mathematical model.

Keywords: Acid Orange 3 Dye, Adsorption, Ash, Degradation, Dye, Fenton-Like Oxidation, Fly Ash, Irradiation, Kinetic, Model, Operating Conditions, Oxidation, pH, Red, Removal, System, Temperature, Ultrasound Irradiation, Water

? Anirudhan, T.S. and Suchithra, P.S. (2010), Equilibrium, kinetic and thermodynamic modeling for the adsorption of heavy metals onto chemically modified hydrotalcite. *Indian Journal of Chemical Technology*, **17** (4), 247-259.

Full Text: [2010\Ind J Che Tec17, 247.pdf](2010/Ind%20J%20Che%20Tec17,%20247.pdf)

Abstract: The adsorption of heavy metals (Cu(II), Zn(II) and Cd(II)) from aqueous solutions with tannin-immobilized calcined hydrotalcite (TA-HTC) was studied using batch experiment technique. The surface characterizations of the adsorbent were investigated. Kinetic modeling of removal of metals was done using a pseudo-second-order rate expression. The intraparticle mass transfer diffussion of metals on adsorbent represented the rate-limiting step, with the activation energy of 27 05, 24 22 and 21.96 kJ/mol for Cu(II), Zn(II) and Cd(II), respectively Experimental results showed that the adsorption of metals was selective to be in the order of Cu(II)>Zn(II)>Cd(II). Equilibrium isotherm data for metal ions were analyzed by the Langmuir, Freundlich, Dubinin-Radushkevich and Scatchard equations. The Langmuir adsorption isotherm described the adsorption data very well at all studied temperatures. Thermodynamic parameters such as standard enthalpy (ΔH\*), standard entropy (ΔS\*), standard free energy (ΔG\*), activation energy and isosteric enthalpy and entropy were calculated and the results are discussed in detail.

Keywords: Activation, Activation Energy, Adsorbent, Adsorption, Adsorption Isotherm, Adsorption of Metals, Aqueous Solutions, Aqueous-Solutions, Batch, Cadmium, Calcined, Calcined Hydrotalcite, Cation-Exchanger, Cd(II), Characterizations, Cu(II), Data, Energy, Enthalpy, Entropy, Equilibrium, Equilibrium Isotherm, Experiment, Expression, Freundlich, Heavy Metals, Hydrotalcite, Ions, Ions Removal, Isotherm, Isotherms, Kinetic, Kinetic Modeling, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Layered Double Hydroxides, Mass Transfer, Metal, Metal Ions, Metals, Modeling, Modified, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Rate Limiting Step, Rate-Limiting Step, Removal, Solutions, Sorption, Standard, Surface, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Waste, Zn, Zn(II)

? Khan, G.M.A., Arafat, S.M.Y., Reza, M.N., Razzaque, S.M.A. and Alam, M.S. (2010), Linde Type-A zeolite synthesis and effect of crystallization on its surface acidity. *Indian Journal of Chemical Technology*, **17** (4), 303-308.

Full Text: [2010\Ind J Che Tec17, 303.pdf](2010/Ind%20J%20Che%20Tec17,%20303.pdf)

Abstract: An alumino-silicate zeolite, Linde Type-A (LTA) has been prepared from aluminium powder and sodium metasilicate by hydrothermal process. The zeolite was characterized by FTIR and X-ray diffraction (XRD) analysis and by measuring the surface acidity using KOH as adsorbate. The surface acidity of LTA zeolite varied greatly with varying synthesized conditions such as crystallization temperature, crystallization time and K+ ion adsorption period The Bronsted acid site on the zeolite surface increased with increasing crystallization temperature and the maximum surface acidity was obtained at 100°C. Crystal growth was also dependent on the crystallization time. The surface acidity increased with increasing crystallization time. The maximum surface acidity due to the maximum consumption of the K+ ion was observed at 48 h adsorption time and the value was found to be 0 9 meq/g when Si.Al was 50 50 It was seen that the surface acidity was more pronounced when ammonium hydroxide solution as adsorbate and agitated crystallization condition were used The surface acidity of the commercial LTA zeolite was compared with the surface acidity of the synthesized LTA zeolite It was found that the surface acidity of synthesized LTA zeolite is slightly greater than commercial LTA zeolite.

Keywords: Adsorption, Al-MCM-41, Aluminium, Alumino Silicate, Aluminosilicate, Aluminum, Analysis, FTIR, FTIR Spectroscopy, Growth, LTA Zeolite, Molecular-Sieves, Surface Acidity, Synthesis, Temperature, X-Ray, X-Ray Diffraction, XRD, XRD Measurement, Zeolite

? Rao, K.S., Anand, S. and Venkateswarlu, P. (2010), Equilibrium and kinetic studies for Cd(II) adsorption from aqueous solution on *Terminalia catappa* Linn leaf powder biosorbent. *Indian Journal of Chemical Technology*, **17** (5), 329-336.

Full Text: [2010\Ind J Che Tec17, 329.pdf](2010/Ind%20J%20Che%20Tec17,%20329.pdf)

Abstract: Terminalia catappa Linn, (TCL) leaf (almond leaf) powder was tested as a biosorbent in a batch adsorption system. The samples with and without Cd(II) adsorption were characterized using FTIR and SEM-EPMA techniques. Loading of Cd(II) onto to TCL powder resulted in shift of various band positions (5 to 51 cm-1) in the FTIR spectrum. The EPMA of Cd(II) loaded powder showed that Cd(II) was not uniformly distributed on the surface but only on specific sites. The experimental parameters chosen for adsorption studies were: pH (2.0 to 6.0), contact time (5 to 120 min), adsorbate concentration (50 to 500 mg L-1), adsorbent concentration (0.25 to 5.0 g per 50 mL adsorbate), anions and Pb(II) concentration. With the increase in pH from 2.0 to 4.0, Cd(II) adsorption increased from 0.86 to 13.79 mg g-1 and with the further increase in pH to 5.5 only marginal increase to 14.12 mg g-1 was observed. Presence of chloride, sulphate or Pb(II) adversely affected Cd(II) adsorption onto TCL. The kinetics of adsorption could be best described by the pseudo-second-order equation. The three equilibrium models namely, Langmuir, Freundlich and Redlich-Peterson fitted well to the isothermic experimental data for TCL with regression coefficients of > 0.97. The maximum uptake capacity of the biosorbent was estimated to be 35.83 mg g-1.

Keywords: Activated Carbon, Adsorbent, Adsorption, Batch, Biosorbent, Biosorption, Cadmium Adsorption, Cadmium(II), Capacity, Cd(II), Contact Time, Data, Equilibrium, Freundlich, FTIR, Heavy-Metals, Ions, Isotherms, Kinetic, Kinetics, Langmuir, Leaf, Low-Cost Adsorbents, Models, Pb(II), pH, Pseudo Second Order, Pseudo-Second-Order, Removal, Sorption, System, Terminalia Catappa Linn Leaf Powder, Uptake, Waste, Water

? Bai, M.T., Komali, K. and Venkateswarlu, P. (2010), Equilibrium, kinetic and thermodynamic studies on biosorption of copper and zinc from mixed solution by *Erythrina variegata orientalis* leaf powder. *Indian Journal of Chemical Technology*, **17** (5), 346-355.

Full Text: [2010\Ind J Che Tec17, 346.pdf](2010/Ind%20J%20Che%20Tec17,%20346.pdf)

Abstract: Present investigation is undertaken to explore the feasibility of biosorption for the removal of copper and zinc from aqueous Cu-Zn solution using *Erythrina variegata orientalis* leaf powder. Batch investigations indicate that biosorption of Cu-Zn mixture is gradually increased with increase in pH from 1 to 6 (38.25 to 44.77 mg/g). The biosorption of Cu-Zn mixture is increased from 86.3 to 91.9% (86.27 to 45.93 mg/g) with increase in biosorbent dosage from 1 to 2 g/L. 91.9% (45.93 mg/g) of Cu-Zn mixture is removed from the solution containing 100 mg/L of Cu and Zn agitated with 2 g/L of 45 mu m size adsorbent for an equilibrium agitation time of 30 min. The experimental data are well described by Langmuir (R-2=0.99), Freundlich (R-2=0.98) and Temkin (R-2=0.98) isotherms. The sorption studies follow the second order rate expression (R-2 = 0.99) and rate constant is 9.39 g/mg-min. The biosorption is found to increase with decrease in temperature of the solution. From the thermodynamic parameters, sorption is found to be exothermic and reversible.

Keywords: Adsorbent, Adsorption, Aqueous-Solutions, Biomass, Biosorbent, Biosorption, Cadmium, Copper, Cu, Cu-Zn Mixture, Data, Equilibrium, Erythrina Variegata Orientalis, Freundlich, Ions, Isotherms, Kinetic, Kinetics, Langmuir, Leaf, Leaves, pH, Rate Constant, Removal, Second-Order, Sorption, Temkin, Temperature, Themodynamic Parameters, Thermodynamic, Thermodynamic Parameters, *Ulva-fasciata* sp, Zinc, Zn

? Ćurković, L., Trgo, M., Rožić, M. and Medvidović, N.V. (2011), Kinetics and thermodynamics study of copper ions removal by natural clinoptilolite. *Indian Journal of Chemical Technology*, **18** (2), 137-144.

Full Text: [2011\Ind J Che Tec18, 137.pdf](2011/Ind%20J%20Che%20Tec18,%20137.pdf)

Abstract: The process of-removal of copper ions by means of clinoptilolite type natural zeolite has been studied as a function of the particle size and temperature. Results indicate that increase in temperature and decrease of particle size improves the removal of copper from aqueous solutions. The parabolic diffusion model is well described process in all examined range of time and it shows that the calculated diffusion coefficient increases with temperature. This increase is more visible at higher particle sizes what assume diffusion through zeolite particle as main mass transfer mechanism. The film diffusion model provides calculation of initial sorption rate (K’) and dimensionless parameter proportional to the diffusion film thickness (x(i)), in relation of particle size and temperature. Diffusion from the surface of zeolite particles through the micro and macro pores is well described with homogenous diffusion model, where change of the calculated overall rate constant is observed at approximate to 60 min of the process. This indicates the change of mass transfer rate through porous zeolite particle.

The activation energy (E-a), activation enthalpy (Delta H), activation entropy (AS) and free energy of activation (Delta G) have been calculated based on kinetic data. These thermodynamic parameters characterize process as diffusion dependent, weakly endothermic and nonspontaneous, where structural changes in structure of natural zeolite particle are not observed.

Keywords: Clinoptilolite, Copper, Diffusion, Kinetic Models, Thermodynamic Parameters, Aqueous-Solutions, Exchange Kinetics, Modified Zeolites, Waste-Water, Adsorption, Equilibrium, Cu2+, Clay, Chromium, Pb2+

? Sivakumar, P. and Palanisamy, P.N. (2011), Non-conventional low-cost adsorbent from Euphorbia antiquorum *L* for the removal of Direct Blue 53 from its aqueous solution. *Indian Journal of Chemical Technology*, **18** (3), 188-196.

Full Text: [2011\Ind J Che Tec18, 188.pdf](2011/Ind%20J%20Che%20Tec18,%20188.pdf)

Abstract: This paper reports the adsorption potential of activated carbon prepared from Euphorbia antiquarian L wood by H3PO4 impregnation in batch mode experiments. The effects of various process controlling parameters such as solution pH. adsorbate concentration and temperature are analyzed. Maximum of 58.40 mg/g of dye adsorbed at a pH of 2.0 and the adsorption decreases with increase in pH. Various kinetic and isotherm models are employed to analyze the feasibility and mechanism of adsorption. The prepared adsorbent removed 145.45 mg/g of dye at an initial dye concentration of 100 mg/L, and the kinetics obeys pseudo second order. Freundlich isotherm fits exceptionally well with good r(2) value. Thermodynamic parameters like Delta G degrees, Delta H degrees and Delta S degrees are evaluated. The positive enthalpy proves that the adsorption process is endothermic in nature. Experiments arc also performed for recovery of dye loaded carbon through regeneration as a function of OH, the maximum desorption occurs at a pH of 10 is only 19.29%. The prepared sorbent can be conveniently employed for the colour removal as its adsorptive capacity is comparable with commercial adsorbents.

Keywords: Acid Dyes, Activated Carbon, Activated Carbons, Adsorption, Adsorption, Agricultural Wastes, Biosorption, Desorption, Euphorbia Antiquorum L, Gases, Isotherm, Isotherm Models, Kinetics, pH, Pseudo-Second-Order, Sorption, Surface Area, Surfaces, Thermodynamic, Thermodynamic Parameters

? Nagashanmugam, K.B. and Srinivasan, K. (2011), Removal of chromium(VI) from aqueous solution by chemically modified gingelly oil cake carbon. *Indian Journal of Chemical Technology*, **18** (3), 207-219.

Full Text: [2011\Ind J Che Tec18, 207.pdf](2011/Ind%20J%20Che%20Tec18,%20207.pdf)

Abstract: An activated carbon is prepared from gingelly oil cake (GOC) by using sulphuric acid treatment and its Cr(VI) removal capacity is compared with that of commercial activated carbon (CAC). The effect of experimental parameters such as pH. initial concentration, contact time and adsorbents close for Cr(VI) removal are studied. Langmuir, Freundlich and Temkin models are tested to describe the equilibrium isotherms. The maximum adsorption capacity of the adsorbents calculated from Langmuir isotherm is found to be 30.58 mg/g and 25.13 mg/g for sulphuric acid treated gingelly oil cake carbon (STGOC) and CAC respectively. R(2) values show that both Langmuir and Freundlich models fit well to explain the adsorption phenomenon for STGOC and CAC. The kinetic data fits best to pseudo second-order model. FTIR analysis is used to obtain information on the nature of possible interaction between adsorbents and metal ions. SEM images confirmed the adsorption of Cr(VI) onto these adsorbents through morphological observations. Gibbs free enemy values showed the feasibility of process and spontaneous nature of the adsorption. The adsorbents are also tested for the removal of Cr(VI) from chrome plating wastewater and found to remove Cr(VI) effectively.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Biosorption, Cac, Chrome Plating Wastewater, Cr(VI), Cr(VI) Removal, Equilibrium, Ftir Analysis, Gingelly Oil Cake Carbon, Hazelnut Shell, Hexavalent Chromium, Information, Ions, Isotherm, Isotherms, Kinetics, Kinetics, Langmuir and Freundlich Models, Langmuir Isotherm, Model, pH, Pseudo-Second-Order, Rice-Husk, Waste-Water, Wastewater

? Dave, P.N., Kaur, S. and Khosla, E. (2011), Removal of basic dye from aqueous solution by biosorption on to sewage sludge. *Indian Journal of Chemical Technology*, **18** (3), 220-226.

Full Text: [2011\Ind J Che Tec18, 220.pdf](2011/Ind%20J%20Che%20Tec18,%20220.pdf)

Abstract: Sorption experiments are carried out using sewage sludge for the removal of basic dye basic red-12 from aqueous solution. Effects of process parameters such as initial pH, adsorbent dosage. initial dye concentration, contact time and effect of temperature are investigated. The biosorbent is characterized by FTIR. SEM and XRD. The adsorption of dye is pH dependent. The rate of sorption increases with increase in temperature, and the process is found to be endothermic. Equilibrium is established in 120 min. The pseudo first-order equation, pseudo second-order equation and intraparticle diffusion models are tested. The results showed that the process followed pseudo first order equation very well and intraparicle diffusion plays an important role in the sorption process. The Langmuir and Freundlich equations arc applied to the data related to adsorption isotherm and the observed maximum adsorption capacity was found to be 295.85 mg/g. Thermodynamic parameters: Delta H degrees, Delta G degrees and Delta S degrees are also evaluated. Column experiments are also carried Out to evaluate the hulk removal of color from effluents. The effects of inlet concentration and bed height are evaluated.

Keywords: Adsorbent, Adsorption, Biosorption, Column, Column Operation, Diffusion, Equilibrium, Industry, Ions, Isotherm, Kinetics, Malachite Green, Methylene-Blue, pH, Pseudo-First-Order, Pseudo-Second-Order, Recovery, Sewage Sludge, Sorption, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Waste-Water

? Krishna, B. and Venkateswarlu, P. (2011), Influence of *Ficus religiosa* leaf powder on bisorption of cobalt. *Indian Journal of Chemical Technology*, **18** (5), 381-390.

Full Text: [2011\Ind J Che Tec18, 381.pdf](2011/Ind%20J%20Che%20Tec18,%20381.pdf)

Abstract: The batch-wise biosorption of cobalt by *Ficus religiosa* (peepul) leaf powder has been carried out. The optimum biosorbent dosage is 60 g/L for an equilibrium agitation time of 90 min. Percentage removal of cobalt is increased from 70.9 to 97.2 (0.96 to 1.45 mg/g) with decrease in acidity in the pH range from 2 to 7. The experimental data are. well represented by Freundlich (n=0.42, K(f)=0.83 L/g, R2 = 0.948), Langmuir (R(L)=0.566, q(m)=3.60 mg/g, R2 = 0.991), Redlich-Peterson(R2 = 0.98) and Temkin (R2 = 0.98, b(T) =784.52) isotherms, indicating favourable biosorption. The biosorption of Co(II) is described by the pseudo-second order rate equation (K=0.418 g/mg-min, R2 = 0.99) preferably than first order rate equation (R2 = 0.89). The biosorption is exothermic, irreversible and spontaneous.

Keywords: Adsorption, Aqueous-Solution, Bioremediation, Biosorbent, Biosorption, Co(II), Cobalt, Equilibrium, Ficus Religiosa, Freundlich, Ions, Isotherms, Kaolinite, Langmuir, pH, Pith, Removal, Sorption, Thermodynamics

? Nagashanmugam, K.B. and Srinivasan, K. (2011), Hexavalent chromium removal by gingelly oil cake carbon activated with zinc chloride. *Indian Journal of Chemical Technology*, **18** (5), 391-402.

Full Text: [2011\Ind J Che Tec18, 391.pdf](2011/Ind%20J%20Che%20Tec18,%20391.pdf)

Abstract: An activated carbon has been prepared from gingelly oil cake (GOC) by zinc chloride treatment and its Cr(VI) removal capacity is compared with that of commercial activated carbon (CAC). The effect of experimental parameters such as pH, initial concentration, contact time and adsorbents dose for Cr(VI) removal has been studied. Langmuir, Freundlich and Temkin models are tested to describe the equilibrium isotherms. The maximum adsorption capacity of the adsorbents calculated from Langmuir isotherm is found to be 62.5 mg/g and 25.13 mg/g for zinc chloride treated gingelly oil cake carbon (ZTGOC) and CAC respectively. R2 values show that both Langmuir and Freundlich models fit well to explain the adsorption phenomenon for ZTGOC and CAC. The kinetic data fits best to pseudo-second order model. FT-IR analysis has been used to obtain information on the nature of possible interaction between carbon adsorbents and metal ions. SEM images confirm the adsorption of Cr(VI) onto these adsorbents through morphological observations. Thermodynamic study shows the feasibility of process and spontaneous nature of the adsorption. The carbon adsorbents have also been tested for the removal of Cr(VI) from chrome plating wastewater and are found to remove Cr(VI) effectively.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Isotherms, Aqueous-Solutions, Bagasse Fly-Ash, Chrome Plating Wastewater, Chromium, Chromium(VI), Coir Pith Carbon, Commercial Activated Carbon, Concentration, Cr(VI), Equilibrium, Freundlich, FT-IR, FTIR, Gingelly Oil Cake Carbon, Hazelnut Shell, Hexavalent Chromium, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Low-Cost Adsorbent, Metal Ions, pH, Sugar-Industry Waste, Thermodynamic, Vi Adsorption, Wastewater, Water, Zinc Chloride

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? Mehta, O.P. (1974), Effect of pH on kinetics of adsorption of iodide and cobalt(II) ions on metallic and glass surfaces. *Indian Journal of Chemistry*, **12** (3), 315-319.

? De, D.K., Daskanungo, J.L. and Chakravarty, S.K. (1974), Adsorption of Methylene-blue, crystal violet and malachite green on bentonite, vermiculite, kaolinite, asbestos and feldspar. *Indian Journal of Chemistry*, **12** (11), 1187-1189.

# Title: Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry

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? Singhal, J.P., Khan, S. and Bansal, O.P. (1978), Kinetics and mechanism of adsorption of oxamyl on kaolinite. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **16** (11), 945-948.

? Jain, K.K., Prasad, G. and Singh, V.N. (1980), Application of Langmuir isotherm for oxalic-acid adsorption by fly-ash and activated carbon. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **19** (2), 154-156.

? Bansal, V., Khan, S. and Singhal, J.P. (1980), Kinetics and mechanism of dimecron adsorption on acid and base saturated synthetic montmorillonite. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **19** (3), 256-257.

? Abouromia, M.M. (1980), Adsorption of thiophene at dropping mercury-electrode and its effect on the kinetics of electrode process. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **19** (4), 374-376.

McKay, G., Blair, H.S. and Findon, A. (1989), Equilibrium studies for the sorption of metal ions onto Chitosan. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **28** (5), 356-360.

? Mishra, J.K., Sahay, A.K. and Mishra, B.K. (1991), Behavior of a surface-active cyanine dye in water and surfactant solutions. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **30** (10), 886-889.

Full Text: 1991\Ind J Che Sec A30, 886.pdf

Abstract: N-Cetyl-4-(p-N,N-dimethylamino)styrylpyridinium bromide (I) has been used as a probe to study the effect of hydrophobic chain in organising the dye molecule in water medium. (I) forms a condensed monolayer on water surface covering 65 angstrom 2/molecule. An L-L type of aggregation has been proposed on the basis of the calculated area of the molecule. A hyposochromic shift in the absorption of (I) in aqueous medium in the presence of CTAB (below CMC) suggests formation of a dimer. But above the CMC of CTAB, (I) forms aggregates with CTAB leading to a mixed micelle formation. However, in reversed micelle, a bathochromic shift is observed with increasing water concentration. This shift reveals a J-type aggregation of the dye at the interface.

Keywords: Micelles

? Desai, M., Dogra, A., Vora, S., Bahadur, P. and Ram, R.N. (1997), Adsorption of some acid dyes from aqueous solutions onto neutral alumina. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **36** (11), 938-944.

Abstract: The kinetics and isotherm studies on the adsorption of five acid dyes, viz., Acid Orange 6, Acid Orange 7, Ethyl Orange, Acid Red 88 and Acid Blue 113 on neutral alumina have been carried out spectrophotometrically. In each case the absorption process follows first order kinetics. For all the five dyes the rate of adsorption shows an increase with increase in dye concentration (0.5 - 6.0×10-5), decrease in pH (4 - 8.5), decrease in temperature (30 -50 degrees C) and amount of adsorbent (0.1 - 0.6g). The adsorption shows the order : Acid Orange 6 > Acid Orange 7 > Ethyl Orange > Acid Red 88 > Acid Blue 113. The dye adsorption follows the Langmuir and Freundlich isotherms; the various isotherm constants and thermodynamic parameters for the adsorption of dyes have been calculated and discussed.

Keywords: Basic-Dyes, Equilibrium, Isotherms, Effluent, Peat

? Vivekanandan, S., Jaya, S. and Lakshmi, S. (1999), Adsorption characteristics of chloramine-T on activated carbon. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **38** (7), 708-711.

Abstract: The adsorption behaviour of chloramine-T (CAT) from aqueous solutions on activated carbon is studied at 298, 303, 310 and 315.5K. The obedience to Langmuir (LAI) and Freundlich(FAI) adsorption isotherms is good while the obedience to Harkins Jura (HJAI) and Temkin(TAI) adsorption isotherms is poor. The specific adsorption is found to decrease with increase in temperature. From kinetic studies kinetic parameters such as rate constant at each of the above temperatures, energy of activation for the adsorption process, half life period and Elovich constants have been evaluated. Calorimetric enthalpy of adsorption is determined and other enthalpies of adsorption have been evaluated. The specific surface area of AC determined by BET method is lower than that determined by Langmuir method. A probable mechanism of adsorption is suggested.

Keywords: Mechanism, Oxidation, Kinetics

? Abraham, B.T. and Anirudhan, T.S. (1999), Influence of organic ligands on kinetics of adsorption of lead(II) by kaolin under various pH conditions. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **38** (10), 1029-1034.

Abstract: Adsorption of lead(II) from aqueous solution in presence of nitrilotriacetic acid(NTA) and ethylenediaminetetraacetic acid(EDTA) by kaolin has been studied using the batch equilibrium method. The study shows that Pb(II) adsorption by kaolin at different concentrations of NTA and EDTA obeys multiple first-order kinetics. The rate constants of Pb(II) adsorption for both fast and slow processes in presence and absence of organic ligands at different pH values have also been determined. With increase in pH the adsorption of NTA and EDTA decreases. In the absence of organic ligands the rate constants of initial fast process were 18-27 times higher than the slow process in the pH range of 2.0 to 9.0. Maximum adsorption of organic ligands takes place at pH 2.0. NTA and EDTA have a significant promoting effect on the adsorption of Pb on to kaolin at pH 2.0 whereas the ligands have a significant retarding effect on the adsorption at pH 4.0 and 9.0. The kaolin surface carries a net positive charge at pH 2.0, thus negatively charged Pb-NTA or Pb-EDTA complexes can be readily adsorbed. Adsorbed NTA and EDTA at kaolin surface provide new adsorption sites for Pb(II) ions.

Keywords: Chelating-Agents, Hydrous Oxides, Desorption, Sediments, Surface, Charge, NTA

? Singla, M.L. and Jain, D.V.S. (2000), Adsorption of Eriochrome Black T on polyaniline from aqueous and methanolic solutions. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **39** (6), 603-610.

Abstract: The adsorption bf Eriochrome Black T (EBT) has been studied on acidic and basic forms of polyaniline from aqueous and methanolic solutions. The adsorption has been studied as a function of adsorbate concentration (2-40×10-4 M), adsorbent particle size (30 - 140 mesh) and temperature (293.15-313.15 K). The data have been fitted to Langmuir isotherm and its parameters have been obtained. Langmuir parameter b has large magnitude and increases with temperature suggesting that the adsorption is endothermic and entropy dominated. Kinetic studies have been performed to calculate rate constants for adsorption processes. The first order kinetics in the initial stages confirms that the rate controlling step is the diffusion of the dye molecules through a stagnant layer formed around the adsorbent particles. This mechanism is overtaken at later stages by the rearrangement of the dye molecules on the surface of the adsorbent and finally by intraparticle diffusion. The energetics of the adsorption process have been obtained.

Keywords: Conducting Polyaniline, Self-Association, Methylene Blue, Waste-Water, Basic Dye, Adsorbent, Removal, Polymers, Equilibrium, Corrosion

? Sumanjit, P.N. (2001), Adsorption of dyes on rice husk ash. Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry, **40** (4), 388-391.

Abstract: Rice Husk Ash, a waste from rice mills has been used as an adsorbent for the removal of chemical oxygen demand from aqueous solutions of textile dyes. The adsorption capacity of rice husk ash for five aqueous acid dye solutions has been determined by adsorption isotherm. The adsorption data have been fitted to Freundlich isotherm and Langmuir isotherm by the least square method and the values of the constants k, n, C-m and b have been obtained. The effect of contact time, pH, adsorbent concentrations and rate constants for each dye have been calculated.

Keywords: Aqueous-Solutions, Fly-Ash, Removal

? Murugkar, A., Karve, M., Padhye, S. and Narayanaswamy, R. (2002), Immobilization of dithiooxamide in biopolymer and synthetic films for possible use in optical fibre copper probe. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **41** (7), 1397-1401.

Abstract: Dithiooxamide (DTO), a metallochromogenic reagent, has been immobilized in a composite biopolymer matrix for the quantitative determination of Cu(II) by an optical fibre method. The suitability of the biopolymer matrix for immobilization purposes has been determined from its stability in acid and basic media and absence of leaching of the immobilized DTO and its copper complex. Immobilization of DTO in poly(methyl)methacrylate (PMMA) alone shows characteristics comparable to that of the biopolymer matrix, while polyvinyl alcohol (PVA), polyvinyl chloride (PVC and Nafion(R) membranes are found to be unsuitable. A linear response is obtained for Cu(II) concentrations between 1 to 5 ppm.

Keywords: Carbon-Paste Electrode, Potentiometric Determination, Electrochemical Sensors, Membrane, Nickel, Ion, Biosensors

? Anbalagan, K. and Juliet, J.C. (2002), Adsorption of chromium(VI) ion onto activated amla dust: Adsorption isotherms and kinetics. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **43** (1), 45-50.

Abstract: The adsorption efficiency of a low cost adsorbent, amla dust (Indian gooseberry, Emblica Officinalis) in removing chromium(VI) ion from aqueous solution has been investigated in batch experiments. The effects of hexavalent chromium concentration, particle size, adsorbent dosage, temperature and pH have been studied. Removal is found to be most effective at pH 4 and at the low temperature and Cr(VI) ion concentration. Therefore, the uptake capacity has been investigated in buffered solutions of pH 4 maintaining a constant ionic strength with 0.01 M NaClO4. The batch adsorption isotherms have been studied in terms of Langmuir and Freundlich isotherm models. Adsorption of Cr(VI) on amla dust is found to follow first order kinetics. The mechanism of Cr(VI) removal on the adsorbent is complex and both the surface adsorption as well as intraparticle diffusion contribute to the rate determining step. Amla dust, the low cost adsorbent is found to be efficient in the removal of Cr(VI) ion in acidic medium, hence, the development of such materials can be applied for the removal of metal ions from industrial waste waters.

Keywords: Removal, Cr(VI), Water, Clay

? Nayak, P.S. and Singh, B.K. (2007), Sorption studies on clay for the removal of phenol and p-nitrophenol from aqueous solution. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry*, **46** (4), 620-623.

Abstract: Sorption of phenol and p-nitrophenol from aqueous solution has been investigated using clay sorbent. The effect of particle size of sorbent, pH, phenol concentration and temperature on sorption capacity has been studied by batch experiments. Langmuir adsorption isotherm constants show that the sorption data for phenols onto clay fits well in this model. The sorption of phenols studied follows pseudo second-order kinetics. This study shows that clay can be used as an efficient sorbent material for the sorption of phenols from aqueous solution.

Keywords: Adsorption, Adsorption Isotherm, Aqueous Solution, Batch, Batch Experiments, Capacity, Chlorophenols, Clay, Concentration, Isotherm, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Model, Particle, Particle Size, pH, Phenol, Phenols, Pseudo-Second-Order, Removal, Second-Order Kinetics, Sorption, Sorption Capacity, Temperature, Waste-Water

# Title: Indian Journal of Dermatology Venereology & Leprology

Full Journal Title: Indian Journal of Dermatology Venereology & Leprology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Singh, S. (2009), Criteria for authorship. *Indian Journal of Dermatology Venereology & Leprology*, **75** (2), 211-213.

Full Text: [2009\Ind J Der Ven Lep75, 211.pdf](2009/Ind%20J%20Der%20Ven%20Lep75,%20211.pdf)

Keywords: Gift Authorship

? Singh, S. and Chaudhary, R. (2009), Accuracy of references cited in articles published in *Indian Journal of Dermatology, Venereology and Leprology*: A pilot study. *Indian Journal of Dermatology Venereology & Leprology*, **75** (5), 488-491.

Full Text: 2009\Ind J Der Ven Lep75, 488.pdf

Abstract: Background: Progress in science takes place when investigators build on the work of others. Therefore, in scientific communications, it is very important that others work is correctly noted and understood. Cited references have been found to be inaccurate in every journal in which they have been examined. Aim: To analyze references cited in articles published in Indian Journal of Dermatology, Venereology and Leprology for their citation and quotation precision as an indicator of the quality of articles. Methods: Twelve citation and five quotation errors were identified and defined. Fifty cited references were selected randomly from the May-June 2008 issue of the journal. For these citations, we obtained 44 full texts of papers and two abstracts. In one case, only citation errors could be verified from the Internet. Three citations of books could not be verified. Thus, citation errors were examined in 47 and quotation errors in 46 citations. Results: Thirteen cited references (28.3; 95 confidence interval [CI] 15.3-41.3) were error-free. Twenty-eight citations (59.6; 95 CI 45.5-73.6) contained citation errors and 20 (43.5; 95 CI 29.2-57.8) quotation errors. Conclusion: Results of this pilot study suggest that improving accuracy of the references is important. Solutions to this problem are suggested.

Keywords: Accuracy, Citation, Citation Errors, Citations, Cited References, Communications, Confidence, Errors, Indicator, Internet, Interval, Journal, Papers, Pilot, Precision, Quality, Quality of, Quotation, Quotation Errors, Reference Accuracy, References, Science, Work

# Title: Indian Journal of Engineering and Materials Sciences

Full Journal Title: Indian Journal of Engineering and Materials Sciences

ISO Abbreviated Title: Indian J. Eng. Mat. Sci.

JCR Abbreviated Title: Indian J Eng Mater S

ISSN: 0971-4588

Issues/Year: 6

Journal Country/Territory: India

Language: English

Publisher: Natl Inst Science Communication

Publisher Address: Dr K S Krishnan Marg, New Delhi 110 012, India

Subject Categories:

Engineering Materials Science: Impact Factor

? Bhargava, D.S. and Killedar D.J. (1995), Relationship in fluoride adsorption on fish-bone charcoal. *Indian Journal of Engineering and Materials Sciences*, **2** (4), 157-162.

Full Text: 1995\Ind J Eng Mat Sci2, 157.pdf

Abstract: Batch adsorption studies have been conducted to determine the effects of some parameters such as contact time, initial solute concentration and dose of adsorbent on the adsorption of fluoride on the fish-bone charcoal. To simulate field conditions, the test fluoride solutions of different concentrations are prepared by using the tap water. The percentage fluoride removal is found to be function of the dose of adsorbent and time at a given initial concentration. Empirical relationship has been attempted to predict the percentage fluoride removal at any time for known values of dose of adsorbent and initial solute concentration under observed test conditions.

? Raji, C., Manju, G.N. and Anirudhan, T.S. (1997), Removal of heavy metal ions from water using sawdust-based activated carbon. *Indian Journal of Engineering and Materials Sciences*, **4** (6), 254-260.

Full Text: 1997\Ind J Eng Mat Sci4, 254.pdf

Abstract: The removal of Pb(II), Hg(II) and Cd(II) by activated carbon prepared from bicarbonate-treated rubber wood sawdust has been found to be concentration, pH and temperature dependent. The percentage adsorption of metal ions increased with decrease in initial concentration of metal ions, increase in adsorbent dosage and temperature. The optimum pH range for the removal of Pb(II) and Hg(II) is 4-8 whereas maximum uptake for Cd(II) is in the pH range 5-9. The applicability of Lagergren kinetic model has also been investigated. The equilibrium data at different temperatures fit well with the Langmuir isotherm. Thermodynamic constant (K-o) and standard free energy (Delta G degrees), enthalpy (Delta H degrees) and entropy (Delta S degrees) changes were calculated for predicting the nature of adsorption. The surface mass transfer coefficient as a function of initial adsorbate concentration has been determined. Desorption studies revealed that spent adsorbent can be regenerated and reused by 0.2 M HCl.

Keywords: Activated Carbon, Adsorbent, Adsorption, Aqueous-Solution, Heavy Metal, Kinetic, Langmuir Isotherm, Mass Transfer, Mass Transfer Coefficient, Mercury(II), Metal Ions, Removal, Sawdust, Titanium-Dioxide, Wollastonite, Wood

? Shubha, K.P., Raji, C. and Anirudhan, T.S. (1998), Batch metal removal by modified hydrous titanium(IV) oxide gel: Kinetics and thermodynamics. *Indian Journal of Engineering and Materials Sciences*, **5** (2), 65-71.

Full Text: 1998\Ind J Eng Mat Sci5, 65.pdf

Abstract: The adsorption ability of polyacrylamide grafted hydrous titanium(IV) oxide gel for heavy metals in aqueous solutions has been investigated by means of batch adsorption tests. The adsorbent material on IR spectral characterization showed the presence of peripheral-COOH-group and exhibits a very high adsorption potential for Pb(II), Hg(II) and Cd(II). Kinetic measurements have been made as a function of agitation time, initial metal concentration, adsorbent dose, pH and temperature. The process follows a first-order kinetics. The intraparticle diffusion of metal ions through pores in the adsorbent was shown to be the main rate limiting step. The sorbent is effective for the quantitative removal of metal ions at pH 6.0. Temperature dependence indicates the endothermic nature of the process. A Langmuir isotherm model fits the equilibrium data well. Thermodynamic parameters were calculated for predicting the nature of adsorption. The method was applied for synthetic wastewaters. Acid regeneration of the adsorbent has been tried.

Keywords: Ion-Exchange Materials, Aqueous-Solution, Bituminous Coal, Silica-Gel, Adsorption, Sorption, Preconcentration, Pb(II), Water

? Dimitrova, S.V. (1998), Removal of lead(II) from aqueous solutions by blast-furnace metallurgical slags. *Indian Journal of Engineering and Materials Sciences*, **5** (4), 189-193.

Full Text: 1998\Ind J Eng Mat Sci5, 189.pdf

Abstract: The possibility for Pb(II) removal from aqueous solutions by ungranulated and granulated blast-furnace slags from the ferrous metallurgy is studied. The sorpion capacities for Pb(II) of both slags (size 0.25-0.50 mm) in solutions with initial metal ion concentration of 50 mg/L are compared. The effect of contact time (5-240 min), the dose of slags (0.25-15 g/L) and pH (3-10) are studied. The data obtained from the kinetic experiments show that the process of Pb (LI) removal by metallurgical slags is mainly controlled by the internal diffusion. The values of rate constants and internal diffusion constants are determined. The maximum capacities of these two materials are determined from the sorption isotherms, obtained for various doses of the slags. When the pH is 5, these maximum capacities are respectively 75 mg/g for ungranulated slag and 71 mg/L for granulated slag. The efficiency of Pb(II) removal from the solution increases with the rise of pH and for both materials the maximum removal (95-97 %) is observed at pH 5.9-6.0. The comparative study for the sorption capacity of the blast-furnace slags shows that the ungranulated slag is almost two times more effective than granulated slag.

Keywords: Heavy-Metals, Waste-Water, Adsorption, Carbon, Ions

? Sreedhar, M.K., Madhukumar, A. and Anirudhan, T.S. (1999), Evaluation of an adsorbent prepared by treating coconut husk with polysulphide for the removal of mercury from wastewater. *Indian Journal of Engineering and Materials Sciences*, **6** (5), 279-285.

Full Text: 1999\Ind J Eng Mat Sci6, 279.pdf

Abstract: Polysulphide treated coconut husk can be used as an effective adsorbent for the removal of Hg(II) from aqueous systems. The parameters affecting Hg(II) adsorption such as Hg(II) concentration, agitation time, pH, sorbent dose, ionic strength and temperature were studied to estimate optimum conditions. Maximum adsorption capacity was observed in the pH range 5.5-10.0. The adsorption isotherm was also affected by temperature since the adsorption capacity was increased by raising the temperature form 30 to 60 degrees C. Lagergren equation and Langmuir and Freundlich isotherm models have been used to determine rate constants of adsorption and capacity of treated coconut husk. Different reagents were tested for extracting Hg(II) from the spent adsorbent. High extraction efficiency was obtained with 0.5M HCl solution. Hg(II) can be successfully removed from synthetic and industrial wastewaters. The results obtained point towards viable adsorbent which is both effective as well as economically attractive for Hg(II) removal from wastewater.

Keywords: Aqueous-Solution, Adsorption, Water, Carbon, Ions

? Vinod, V.P. and Anirudhan, T.S. (2002), Treatment of phenol rich aqueous solutions using surface modified pillared clay. *Indian Journal of Engineering and Materials Sciences*, **9** (2), 128-136.

Full Text: 2002\Ind J Eng Mat Sci9, 128.pdf

Abstract: The efficacy of humic acid treated zirconium pillared clay (HA-PILC) in the removal of phenol from aqueous solution has been investigated using batch adsorption technique at different sorbate concentrations, rate of agitation, pH and temperature. The maximum removal of 98.0, 84.0 and 73.2% has been noted at pH 5.0 for an initial concentration of 25, 50 and 100 mg/L respectively. The maximum adsorption capacity has been observed at pH 5.0. The process of uptake follows a first-order reversible kinetic expression. The removal process has also been found to be diffusion controlled. The adsorption capacity has been increased from 78.2 to 92.6% with an increase in agitation speed from 100 to 400 rpm at an initial concentration of 50 malL. The adsorption isotherm for phenol removal may be classified as L-type of the Giles classification, which suggests a favourable adsorption, and the adsorbent has a high affinity for phenol. The adsorption data points have been fitted to both Langmuir and Freundlich isotherm equations. The maximum adsorption capacity (Q0) decreases from 179.86 mg/g at 10degreesC to 126.69 mg/g at 40degreesC. Lower temperature has been found to be more effective in the removal of phenol. Thermodynamic parameters such as DeltaG(0), DeltaH(0) and DeltaS(0) for the adsorption process have been calculated to predict the nature of adsorption process. Cost of the HA-PILC and its adsorption capacity with other adsorbent materials reported in the literature, have also been presented.

Keywords: Adsorption Characteristics, Tannic-Acid, Bentonite, Sorption, Removal, Water

? Aziz, H.A., Adlan, M.N., Hui, C.S., Zahari, M.S.M. and Hameed, B.H. (2005), Removal of Ni, U, Pb, Zn and colour from aqueous solution using potential low cost adsorbent. *Indian Journal of Engineering and Materials Sciences*, **12** (3), 248-258.

Full Text: [2005\Ind J Eng Mat Sci12, 248.pdf](2005/Ind%20J%20Eng%20Mat%20Sci12,%20248.pdf)

Abstract: A study was conducted to determine the removal efficiency of heavy metals (Ni, Cd, Ph and Zn) and colour from wastewater using cheap available materials in Malaysia such as charcoal, coconut shell carbon and a mixture of these carbons with limestone. As activated carbon is quite expensive, this study attempts to investigate the possibility of mixing activated carbon with these materials for cost saving. The suitability of using coconut shell after heating at 500 degrees C in treating wastewater also formed the basis of the study. Batch studies were carried out in the laboratory with an initial concentration of heavy metals generally found in final effluents at 2 mg/L and colour at 400-ptCo. The results indicated that a mixture of activated carbon and limestone had removed 92% of heavy metals and 85% of colour from synthetic wastewater at a wide range of pH. When activated carbon was only used, 85% of heavy metals and 99% of colour were removed. For a mixture of charcoal with limestone, the removal efficiencies for heavy metals and colour were at 65% and 35%, respectively. The removal efficiency for heavy metals was further improved to 80% when charcoal was used, but for colour removal it was only 30%. The results of the study suggested that a mixture of activated carbon with limestone had significantly removed the amount of heavy metals and colour. Thus, the cost of the overall process can be reduced. This study also indicated that there is possibility of using coconut carbon and charcoal as an alternative absorbents for removing heavy metals and colour from wastewater. However, improvement on activation process is required.

Keywords: Activated Carbon, Adsorption, Basic-Dyes, Charcoal, Column Operations, Equilibrium Uptake, Filtration Technique, Fly-Ash, Heavy-Metals, Removal, Sorption Dynamics, Waste-Water, Wastewater

? Hema, M. and Srinivasan, K. (2010), Uptake of toxic metals from wastewater by activated carbon from agro industrial by-product. *Indian Journal of Engineering and Materials Sciences*, **17** (5), 373-381.

Full Text: [2010\Ind J Eng Mat Sci17, 373.pdf](2010/Ind%20J%20Eng%20Mat%20Sci17,%20373.pdf)

Abstract: Activated carbon prepared from neem oilcake, by pyrolysis accompanied with microwave oven activation is evaluated for the adsorption of Cd(II) and Ni(II) from wastewater. Parameters such as pH, agitation time, metal ion concentration and adsorbent dose are studied. The percent removal increased with pH from 2.0 to 7.0. The adsorption data fit well with Langmuir, Freundlich and Temkin isotherm models. The adsorption capacity (q(e)) calculated from Langmuir isotherm are 54.95 mg Ni(II)/g and 23.70 mg Cd(II)/g at an optimal pH of 7.0 at 30 degrees C for the particle size 0.120-0.075 mm. Adsorption of Cd(II) and Ni(II) by activated carbon from neem oilcake follows pseudo-second-order kinetic model. Desorption studies with dilute hydrochloric acid indicate that quantitative recovery of cadmium and nickel ions are possible. The mechanism of adsorption seems to follow ion exchange process. As neem oilcake is discarded as waste from oil processing industries, the carbon could be exploited for metal ions recovery from wastewater.

Keywords: Activated Carbon, Activation, Adsorbent, Adsorbent Dose, Adsorption, Adsorption Capacity, Agitation, Aqueous-Solution, Cadmium, Capacity, Carbon, Cd(II), Chemical-Properties, Concentration, Data, Desorption, Equilibrium, Freundlich, Ion Exchange, Ion-Exchange, Ions, Isotherm, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Mechanism, Mechanism of Adsorption, Metal, Metal Ions, Metals, Microwave, Model, Models, Neem Oilcake, Ni(II), Nickel, Particle Size, pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Pyrolysis, Recovery, Removal, Rice Husk, Si, Size, Temkin Isotherm, Toxic, Toxic Metal, Toxic Metals, Waste, Wastewater

? Suganthi, N. and Srinivasan, K. (2010), Phosphorylated tamarind nut carbon for the removal of cadmium ions from aqueous solutions. *Indian Journal of Engineering and Materials Sciences*, **17** (5), 382-388.

Full Text: [2010\Ind J Eng Mat Sci17, 382.pdf](2010/Ind%20J%20Eng%20Mat%20Sci17,%20382.pdf)

Abstract: Activated carbon prepared from phosphoric acid treatment of Tamarind nuts (seeds) is investigated for the removal of cadmium ions from aqueous solutions. Carbon granules of 300 to 800 mu m particle size are chosen for all studies. The characteristics of the phosphorylated tamarind nut carbon (PTNC) are evaluated for porosity, surface area, iodine number, phenol number, moisture content and decolorizing power. PTNC is subjected to the adsorption of cadmium ions from aqueous solution. The effects of pH, contact time, metal ion concentration and carbon dosage are studied to evaluate the potential applicability of carbon produced as an adsorbent for wastewater treatment. The adsorption data are modeled by using Langmuir and Freundlich classical adsorptions isotherms. Kinetic studies fitted best with pseudo-second order model. Desorption studies indicated that ion-exchange mechanism is operating. Column studies are conducted in 2.5 cm diameter columns. Under optimum conditions of flow rate and bed height, breakthrough capacities are found out. The mechanism of adsorption for cadmium on PTNC is found to follow ion exchange process predominantly and supported by FTIR. The cadmium removal and the surface modification are also confirmed by SEM studies.

Keywords: Acid Activation, Acid Treatment, Acid-Treatment, Activated Carbon, Activated Carbon, Adsorbent, Adsorption, Aqueous Solution, Aqueous Solutions, Biosorbent, Breakthrough, Cadmium, Cadmium Ions, Carbon, Carbon Granules, Characteristics, Column, Concentration, Data, Desorption, Flow, Flow Rate, Freundlich, FTIR, Ion Exchange, Ion-Exchange, Ionexchange, Ions, Isotherms, Kinetic, Kinetic Studies, Langmuir, Mechanism, Mechanism of Adsorption, Metal, Model, Modification, Moisture, Particle Size, Peat, pH, Phenol, Phosphoric Acid, Phosphorylated Tamarind Nut Carbon, Porosity, Potential, Power, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Removal, SEM, Si, Size, Solution, Solutions, Sorption, Surface, Surface Area, Surface Modification, Treatment, Wastewater, Wastewater Treatment

# Title: Indian Journal of Environment & Ecoplanning

Full Journal Title: Indian Journal of Environment & Ecoplanning

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kumar, K.V., Sivanesan, S. and Ramamurthi, V. (2004), Dynamic studies for the sorption of Methylene blue onto fly ash. *Indian Journal of Environment & Ecoplanning*, **8** (1), 59-62.

# Title: Indian Journal of Environmental Health

Full Journal Title: Indian Journal of Environmental Health

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0367-8318

Issues/Year: 12

Journal Country/Territory: India

Language: English

Publisher: Indian Counc Agricultural Res

Publisher Address: Icar Bhawan Pusa, New Delhi 110 012, India

Subject Categories:

Agriculture: Impact Factor

Dairy & Animal Science: Impact Factor

Bulusu, K.R., Kulkarni, D.N. and Lutade, S.L. (1978), Phoaphate removal by Sepentine mineral. *Indian Journal of Environmental Health*, **20**, 268-271.

Full Text: [I\Ind J Env Hea20, 268.pdf](I/Ind%20J%20Env%20Hea20,%20268.pdf)

Kumar, P. and Dara, S.S. (1980), Modified barks for scavenging toxic heavy metal ions. *Indian Journal of Environmental Health*, **22** (3), 196-202.

Periasamy, K., Srinivasan, K. and Murugan, P.K. (1988), Studies on chromium removal by rice husk carbon. *Indian Journal of Environmental Health*, **30**, 376-387.

Full Text: [I\Ind J Env Hea30, 376.pdf](I/Ind%20J%20Env%20Hea30,%20376.pdf)

Periasamy, K., Srinivasan, K. and Murugan, P.K. (1991), Studies on chromium(VI) removal by activated groundnut husk carbon. *Indian Journal of Environmental Health*, **33**, 433-439.

Full Text: [I\Ind J Env Hea33, 433.pdf](I/Ind%20J%20Env%20Hea33,%20433.pdf)

? Singh, D.K. and Lal, J. (1992), Removal of chromium(VI) from aqueous solutions using waste tea leaves carbon. *Indian Journal of Environmental Health*, **34** (2), 108-113.

Full Text: Ind J Env Hea34, 108.pdf

Abstract: The waste tea leaves have been converted into cheap carbonaceous adsorbent material by sulfuric acid treatment. This product exhibits a good adsorption potential for chromium (VI) with a peak value at pH apprx 2. IR data indicate that Cr-2O-72- is the major Cr(VI) species involved in surface association of tea leaves carbon (TLC). Some column studies have been performed with a view of removal/recovery of Cr(VI) and chemical regeneration of the adsorbent material. The breakthrough capacity was found to be 39.3 mg/g for Cr(VI). The column packed with developed carbon has been reported to remove Cr(VI) from the waste effluent of the chromium plating shop.

Singh, D.K., Tiwari, D.P. and Saksena, D.N. (1993), Removal of lead from aqueous solution by chemically treated used tea leaves. *Indian Journal of Environmental Health*, **35** (3), 169-177.

Full Text: [I\Ind J Env Hea35, 169.pdf](I/Ind%20J%20Env%20Hea35,%20169.pdf)

Abstract: Used tea leaves powder treated with formaldehyde and sulphuric acid has been studied as a sorbent for removal of Pb2+ from aqueous solutions. Effect of contact time, initial concentration, pH and temperature has been studied. Sorption capacities by batch and column experiments have been estimated. Sorption on treated tea leaves (TTL) powder followed langmuir and Freundlich adsorption models. The sorption capacity determined for different heavy metal ions resulted in the selectivity order: Pb2+ > Hg2+ > Cd2+ > Ni2+ > Cu2+. Design application for batch sorber has also been suggested.

? Swamy, M.M., Mall, I.D., Prasad, B. and Mishra, I.M. (1998), Sorption characteristics on o-cresol on bagasse fly ash and activated carbon. *Indian Journal of Environmental Health*, **40** (1), 67-78.

Full Text: Ind J Env Hea35, 67.pdf

Abstract: Bagasee flyash, a waste generated in sugar industry from bagasse fired boilers, was found to be a good adsorbent for o-Cresol in aqueous solutions. Batch studies indicated that the percent removal decreased with increasing initial concentration of O- Cresol. At the initial concentration of 100 mg dm-3, 81 percent removal of o-Cresol was obtained. Adsorption confirmed to both Freundlich and Langmuir isotherms. Kinetic modelling of the removal of o-Cresol was obtained. Adsorption confirmed to both Freundlich and Langmuir isotherms, kinetic modelling of the removal of o-Cresol was done using Lagergren first order rate expression. Column experiments indicated that the adsorbed amount of o-Cresol decreased with increasing flow rate and decreased bed height. The BDST model was found applicable.

# Title: Indian Journal of Environmental Protection

(Indian J. Environ. Prot.; Indian J. Environ. Protection)

Full Journal Title: Indian Journal of Environmental Protection

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kannan, N. and Vanangamudi, A. (1991), A study on removal of chromium(VI) by adsorption on lignite coal. *Indian Journal of Environmental Protection*, **11** (4), 241-245.

Vaishya, R.C. and Prasad, S.C. (1991), Adsorption of copper(II) on sawdust. *Indian Journal of Environmental Protection*, **11** (4), 284-289.

Kaur, A., Malik, A.K., Verma, N. and Rao, A.L.J. (1991), Removal of copper and lead from wastewater by adsorption on bottom ash. *Indian Journal of Environmental Protection*, **11**, 433-435.

? Deo, N. and Ali, M. (1992), ??. *Indian Journal of Environmental Protection*, **12** (1), 439-??.

? Neo, N. and Ali, M. (1993), ??. *Indian Journal of Environmental Protection*, **13**, 496-??.

? Praveen, K.A. and Bhatia, S. (1994), ??. *Indian Journal of Environmental Protection*, **14**, 490-496.

? Sulochana, N., Inbaraj, B.B. and Selvarani, K. (1998), Removal efficiency of copper and nickel by plant materials. *Indian Journal of Environmental Protection*, **18**, 185-188.

? Kannan, N. and Karuppasamy, K. (1998), Status of ground water in a remote village near Tirunelveli in Tamil Nadu. *Indian Journal of Environmental Protection*, **18** (9), 683-??.

? Sulochana, N., Inbaraj, B.B. and Selvarani, K. (1998), Status of ground water in a remote village near Tirunelveli in Tamil Nadu. *Indian Journal of Environmental Protection*, **18**, 739-744.

? Sulochana, N., Inbaraj, B.B. and Selvarani, K. (1999), Monitoring, correlation and possibilities of contamination of ground water in Thuvakudi Village, Tiruchirappalli District. *Indian Journal of Environmental Protection*, **19**, 290-295.

? Kumar, K.V. and Bhagavanulu, D.V.S. (2003), A new model to predict the film transfer constant during the adsorption of basic dye onto bioorganic waste. *Indian Journal of Environmental Protection*, **23** (4), 388-391.

? Kumar, K.V. (2003), Studies on adsorption of basic dye onto agrobased waste: Part 2: Equilibrium and diffusion studies. *Indian Journal of Environmental Protection*, **23** (4), 392-395.

# Title: Indian Journal of Fibre & Textile Research

Full Journal Title: Indian Journal of Fibre & Textile Research

ISO Abbreviated Title: Indian J. Fibre Text. Tes.

JCR Abbreviated Title: Indian J Fibre Text

ISSN: 0971-0426

Issues/Year: 4

Journal Country/Territory: India

Language: English

Publisher: Natl Inst Science Communication

Publisher Address: Dr K S Krishnan Marg, New Delhi 110 012, India

Subject Categories:

Materials Science, Textiles: Impact Factor 0.157, / (2000)

? Gulrajani, M.L., Bhaumik, S., Oppermann, W. and Hardtmann, G. (2002), Kinetic and thermodynamic studies on red sandalwood. *Indian Journal of Fibre & Textile Research*, **27** (1), 91-94.

Abstract: Red sandalwood (Pterocarpus santalinus) has been used as a dye for wool and nylon with and without mordant. Ethanol extract of red sandalwood has been used for carrying out thermodynamic and kinetic studies on wool and nylon. The diffusion coefficients; rate of dye uptake, adsorption isotherms, standard affinity, enthalpy and heat of dyeing have been calculated. It is observed that the red sandalwood dye has higher rate of dyeing and more affinity for nylon than those for wool.

Keywords: Kinetic Stud, Natural Dye, Pterocarpus Santalinus, Red Sandal Wood, Thermodynamic Study

Keywords: Adsorption, Adsorption Isotherms, Kinetic, Kinetic Stud, Natural Dye, Pterocarpus Santalinus, Red Sandal Wood, Thermodynamic Study

# Title: Indian Journal of Marine Sciences

Full Journal Title: Indian Journal of Marine Sciences

ISO Abbreviated Title: Indian J. Mar. Sci.

JCR Abbreviated Title: Indian J Mar Sci

ISSN: 0379-5136

Issues/Year: 4

Journal Country/Territory: India

Language: English

Publisher: Natl Inst Science Communication

Publisher Address: Dr K S Krishnan Marg, New Delhi 110 012, India

Subject Categories:

Oceanography: Impact Factor

? Senthilnathan, S. and Balasubramanian, T. (1999), Heavy metal distribution in Pondicherry harbour, southeast coast of India. *Indian Journal of Marine Sciences*, **28** (4), 380-382.

Abstract: Attempt was made to evaluate the extent of distribution of selected heavy metals (Cu, Zn; Cd and Pb) in water, sediment and plankton over a period of two years from Pondicherry harbour (lat.11 degrees 47’ N, Iong.79 degrees 50’E). A distinct seasonal variation in the distribution of metals in the ambient water,, sediment and plankton was observed. The metals were high during monsoon and low during summer. The order of metal abundance in water, sediment and plankton was Zn>Cu>Pb>Cd. Plankton showed greater adsorption and absorption capacity for most of the heavy metal as revealed by the concentration fatter. A significant linear relationship was also observed between metal level in the ambient water and plankton. Salinity plays an important role in the distribution of metal in the study area.

Keywords: Marine

# Title: Indian Journal of Medical Research

Full Journal Title: [Indian Journal of Medical Research](http://www.icmr.nic.in/ijmr/ijmr.htm)

ISO Abbrev. Title: Indian J. Med. Res.

JCR Abbrev. Title: Indian J Med Res

ISSN: 0971-5916

Issues/Year: 12

Language: English

Journal Country/Territory: India

Publisher: Indian Council Medical Res

Publisher Address: Po Box 4911 Ansari Nagar, New Delhi 110029, India

Subject Categories:

Immunology: Impact Factor 1.516, 109/128 (2009)

Medicine, General & Internal: Impact Factor 1.516, 49/133 (2009)

Medicine, Research & Experimental: Impact Factor 1.516, 61/93 (2009)

? Borse, N.N. and Hyder, A.A. (2009), Call for more research on injury from the developing world: Results of a bibliometric analysis. *Indian Journal of Medical Research*, **129** (3), 321-326.

Full Text: [2009\Ind J Med Res129, 321.pdf](2009/Ind%20J%20Med%20Res129,%20321.pdf)

Abstract: Background & objectives: Injury prevention is a daunting health challenge as public health systems particularly in the developing world are least prepared to respond to this issue. In 2005, an estimated 5.4 million people worldwide died from injuries over 90 per cent in low- and middle-income countries. The main objective of this bibliometric analysis was to document injury literature published on low- and middle-income countries, and also to quantify literature on road traffic injuries by countries before and after the World Health Day on Road Safety celebrated in April 2004. Methods: A systematic search was done using MeSH terms on PubMed. Papers on road traffic injuries were assessed by country/cluster and by publication date for two periods (March 2001 - March 2004) and (April 2004 - April 2007). The rate of articles published per million population was calculated. Finally, a comparison was made between disease burden in disability adjusted life years (DALYs) and quantum of papers published. The search was performed on April 29, 2007. Results: PubMed had 8.26 million articles listed; of which, 72 per cent were in English and only 2 per cent were on unintentional injuries. For papers in all languages including English on road traffic injuries, 41 per cent were from US, 36 per cent from Europe (other than Eastern Europe). Two most populous countries, China and India contributed only 0.9 and 0.7 per cent papers on road traffic injuries, respectively. On neoplasm there were 280 articles published per million population whereas for road traffic injuries, rate was 4 articles per million population. Northern Africa, India and China had less than one article on road traffic injuries per 1,000 road traffic related deaths. The percentage change in English papers on road traffic injuries for the period 2004-2007 in comparison to period 2001-2004 was +191 per cent for China, +118 per cent for India, and +106 per cent for Middle East. Unintentional injuries overall represented 18 per cent of the burden in terms of DALYs and represented only 2 per cent of all published articles. Interpretation & conclusion: The results noticeably reflected the small proportion of papers on injuries, the dominance of US, and the apparent increase in percentage of road traffic injuries papers from low- and middle-income countries after World Health Day on Road Safety in 2004. Policies on injury prevention and safety in developing countries will be effective if based on local evidence and research, and designed to suit the social, political, and economic circumstances found in developing countries.

Keywords: Bibliometric, Bibliometric Analysis, Burden of Disease, Countries, Developing Countries, Developing-Countries, Disease Burden, Eastern Europe, Europe, Injury Prevention, Literature, Papers, Public Health, PUBMED, Research, Road Traffic Injuries, Unintentional Injuries, US

? Satyanarayana, K. (2010), Plagiarism: A scourge afflicting the Indian science. *Indian Journal of Medical Research*, **131** (3), 373-376.

Full Text: [2010\Ind J Med Res131, 373.pdf](2010/Ind%20J%20Med%20Res131,%20373.pdf)

Keywords: Plagiarism

? Mony, P.K. and Srinivasan, K. (2011), A bibliometric analysis of published non-communicable disease research in India. *Indian Journal of Medical Research*, **134** (2), 232-234.

Full Text: [2011\Ind J Med Res134, 232.pdf](2011/Ind%20J%20Med%20Res134,%20232.pdf)

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Disease, Epidemiologic Transition, India, Prevention, Research

# Title: Indian Journal of Medical Research Section A-Infectious Diseases

Full Journal Title: Indian Journal of Medical Research

ISO Abbreviated Title: Indian J. Med. Res.

JCR Abbreviated Title: Indian J Med Res

ISSN: 0971-5916

Issues/Year: 12

Journal Country/Territory: India

Language: English

Publisher: Indian Council Medical Res

Publisher address: PO Box 4911 Ansari Nagar, New Delhi 110029, India

Subject Categories:

Immunology Medicine, General & Internal Medicine, Research & Experimental: Impact Factor

? Ramteke, P.W., Gaur, A., Pathak, S.P., Bhattacharjee, J.W. (1990), Antibiotic resistance of coliforms in drinking water in rural areas. *Indian Journal of Medical Research Section A-Infectious Diseases*, **91**, 185-188.

Abstract: The antibiotic sensitivity of 197 coliform sp. isolated from drinking water in five rural areas was studied. Twelve strains (6.1%) showed multiple antibiotic resistance, three (1.5%) of which were able to transfer the resistances to an *Escherichia coli* K-12 recipient. It seems unlikely that the occurrence of transmissible multiple antibiotic resistance among coliforms in drinking water in the areas studied poses a significant public health risk.

# Title: Indian Journal of Ophthalmology

Full Journal Title: [Indian Journal of Ophthalmology](http://www.ijo.in/backissues.asp)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kumaragurupari, R., Sieving, P.C. and Lalitha, P. (2010), A bibliometric study of publications by Indian ophthalmologists and vision researchers, 2001-06. *Indian Journal of Ophthalmology*, **58** (4), 275-279.

Full Text: Ind J Oph58, 275.pdf

Abstract: Objective: The objective was to conduct a bibliometric analysis of Indian ophthalmic papers published from 2001 to 2006 in the peer-reviewed journals, to assess productivity, trends in journal choice, publication types, research funding, and collaborative research. Materials and Methods: We searched PubMed for articles indicating both vision-related content and author affiliation with an Indian research center. We identified research collaborations and funding from indexing for research support, and classified articles as reporting basic science, clinical science, or clinically descriptive research. Impact factors were determined from Journal Citation Reports for 2006. Results: The total number of published articles that were retrieved for the years 2001 to 2006 was 2163. During the six-year period studied, the annual output of research articles has nearly doubled, from 284 in 2001 to 460 in 2006. Two-thirds of these were published in international journals; 41% in vision-related journals with 2006 impact factors; and 3% in impact factor journals which were not vision-related. Fifty percent of the publications came from nine major eye hospitals. Clinical science articles were most frequently published whereas basic science the least. Publications resulting from international collaborations increased from 3% in 2001 to 8% in 2006. The focus of the journal with the highest number of publications corresponds to the most common cause of bilateral blindness in India, cataract. Conclusion: This bibliometric study of publications of research from India in the field of ophthalmic and vision research shows that research productivity, as measured in both the number of publications in peer-reviewed journals and qualitative measures of those journals, has increased during the period of this study.

Keywords: Author, Bibliometric, Bibliometric Analysis, Bibliometrics, Citation, India, Journals, Ophthalmic Research, Ophthalmology, Publication, Publications, PubMed, Research, Researchers, Science, Vision Research

# Title: Indian Journal of Pharmaceutical Education and Research

Full Journal Title: Indian Journal of Pharmaceutical Education and Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Peddireddy, M.K.R. (2011), Pharmacological tools for the correction of gastrointestinal motility disorders. *Indian Journal of Pharmaceutical Education and Research*, **45** (1), 15-24.

Full Text: [2011\Ind J Pha Edu Res45, 15.pdf](2011/Ind%20J%20Pha%20Edu%20Res45,%2015.pdf)

Abstract: A recent bibliographic survey in three reputed pharmacology journals during 2007 indicated that gastrointestinal (GI) pharmacology is the leading fields of pharmacological research. This led to undertake a bibliographic search for various pharmacological tools in exploring the common mechanisms involved in GI motility, which would help in suggesting corrections for its deranged state. 5-HT tools: Peristaltic and secretory reflexes are initiated by submucosal intrinsic primary afferent neurons through 5-HT. Discovery of 5-HT3 receptor antagonists (Ondansetron and granisetron) led to a major breakthrough in the control of chemotherapy-induced emesis. Cholinergic tools: Parasympathetic nervous system is the major one for maintaining normal intestinal motility by releasing acetylcholine (ACh) which stimulate cholinoceptors-muscarini (M) and nicotinic receptors. Contraction can also be induced by M receptor agonists (carbachol, oxotremorine) and with nicotinic agonists (nicotine, dimethylphenyl piperazinium iodide (DMPP)). These effects can be identified by muscarinic antagonists (atropine) and ganglionic blockers (mecamylamine). Tachykinin tools: TK antagonists (Aprepitant, SR140333) could counteract the most significant symptoms characterizing gut diseases. Nitric oxide(NO) tools: The gas, NO is considered as one of the important inhibitory mediators of non-adrenergic non-cholinergic (NANC) transmission in gut. Neuronal nitric oxide synthase inhibitors (Methyl arginine, nitroarginine) are used to identify NO actions. Vasoactive intestinal polypeptide (VIP) tools: VIP plays an important role in the mediation of NANC relaxation of smooth muscles and in inhibitory regulation of GI motility. ATP and its tools: ATP acts on purinergic receptors on intestinal smooth muscle and nerve endings that causes relaxation or contraction. Pyridylisatogen, a specific ATP antagonist blocks the relaxation induced by ATP in guinea pig taenia caeci.

Keywords: 5-Ht Release, Bibliographic, Enterochromaffin Cells, Experimental Tools, Guinea-Pig Intestine, Journals, Motor Activity, Muscarinic Receptors, Myenteric Plexus, Nicotinic Acetylcholine-Receptors, Nitric-Oxide, Peristalsis, Peristaltic Reflex, Primary, Rat Small-Intestine, Research, Scientometric Study, Smooth-Muscle, Survey

# Title: Indian Journal of Pediatrics

Full Journal Title: [Indian Journal of Pediatrics](http://www.springerlink.com/content/120545/?p=2b13b8da9b8941ff923a0dd87be7ee9b&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Teotia, M., Teotia, S.P. and Singh, K.P. (1998), Endemic chronic fluoride toxicity and dietary calcium deficiency interaction syndromes of metabolic bone disease and deformities in India: Year 2000. *Indian Journal of Pediatrics*, **65** (3), 371-381.

Full Text: [1998\Ind J Ped65, 371.pdf](1998/Ind%20J%20Ped65,%20371.pdf)

Abstract: Epidemiological studies during 1963-1997 were conducted in 45,725 children exposed to high intake of endemic fluoride in the drinking water since their birth. Children with adequate (dietary calcium > 800 mg/d) and inadequate (dietary calcium < 300 mg/d) calcium nutrition and with comparable intakes of fluoride (mean 9.5±1.9 mg/d) were compared. The toxic-effects of fluoride were severe and more complex and the incidence of metabolic bone disease (rickets, osteoporosis. PTH bone disease) and bony leg deformities (genu valgum, genu varum, bowing, rotational and wind-swept) was greater (> 90%) in children with calcium deficiency as compared to < 25% in children with adequate calcium who largely had osteosclerotic form of skeletal fluorosis with minimal secondary hyperparathyroidism. The syndrome of skeletal fluorosis and associated metabolic bone disease and deformity is a unique clinical entity classified as a variant of osteosclerotic form of skeletal fluorosis. This syndrome chiefly results from the biological impact of excess fluoride, low calcium, high PTH and 1, 25 (OH)2D3 separately and through their interactions on bone structure and metabolism as studied by radiology, bone scanning, bone histomorphometry and relevant metabolic and endocrine laboratory investigations. Metabolically active and vascular bones of children accumulate fluoride at faster and greater rate than adults (at the sites of active growth). In calcium deficient children the toxic effects of fluoride manifest even at marginally high (> 2.5 mg/d) exposures to fluoride. Fluoride toxicity also exaggerates the metabolic effects of calcium deficiency on bone. The findings strongly suggest that children with calcium deficiency rickets reported in the literature should be re-investigated for possible fluoride interactions. Deep bore drinking water supply with fluoride < 0.5 ppm and improvement of calcium nutrition provide 100% protection against the toxic effects of fluoride and are recommended as the cost effective and practical public health measures for the prevention and control of endemic fluorosis.

# Title: Indian Pediatrics

Full Journal Title: [Indian Pediatrics](http://indianpediatrics.net/)

ISO Abbrev. Title: Indian Pediatrics

JCR Abbrev. Title: Indian Pediatr

ISSN: 0019-6061

Issues/Year: 12

Language: English

Journal Country/Territory: India

Publisher: Indian Acad Pediatrics

Publisher Address: Maulana Azad Medical College, Dept Pediatrics, New Delhi 110 002, India

Subject Categories:

Pediatrics: Impact Factor

? Gupta, P., Yadav, M., Mohta, A. and Choudhury, P. (2005), References in Indian pediatrics: Authors need to be accurate. *Indian Pediatrics*, **42** (2), 140-145.

Full Text: [2005\Ind Ped42, 140.pdf](2005/Ind%20Ped42,%20140.pdf)

Abstract: To determine the accuracy of references published in Indian Pediatrics, we reviewed the reference lists appended to the original articles published in Indian Pediatrics during the year 2002 (volume 39) for citation and quotation accuracy. A total of 176 references out of 322 cited in 17 original articles could be retrieved from available resources. Errors of citation were found in 69 (39.2%) references while errors of quotation were found in 15 (8.6%) references. The most common errors were those in the name of authors and title of the article. Contributors should make serious efforts to check the accuracy of the references cited in their manuscripts.

Keywords: Accuracy, Anesthesia, Citation, Error Rate, Errors, Indian Pediatrics, Journals, Pediatrics, Quality, Quotation, Quotation Accuracy, Reference, Volume

? Gupta, P., Sharma, B. and Choudhury, P. (2007), Limiting authorship in Indian pediatrics: An initiative to curb gift authorship. *Indian Pediatrics*, **44** (1), 37-39.

Full Text: [2007\Ind Ped44, 37.pdf](2007/Ind%20Ped44,%2037.pdf)

Abstract: Indian Pediatrics limited the number of authorship to 5, 4 and 2 for Brief Reports (BR), Case Reports (CR), and Letters to the Editor (LE), respectively from January 2003, to curb gift authorship. To analyze the impact of this policy, a comparative analysis was conducted for years 2002-2004. Mean (SD) number of authors was comparable for the three categories over 2002-2004 [BR: 4.2(1.7), 3.8(1.4), 3.9(1.5); CR: 3.3(0.8), 3.3(0.8), 3.2(0.8); LE: 2.1(1.3), 1.9(0.9), 1.8(0.5); P >0.05]. There was a signifcant reduction in the number of Senior authors during 2003-2004, as compared to 2002 (P <0.05). The policy resulted in fewer authorship credits for Senior authors.

Keywords: Gift Authorship, Indian Pediatrics

# Title: Indian J Public Health

(Indian J. Public Health)

? Bhatta, N.V. (1966), A Study of coli-aerogenes contaminations of drinking water from human hands. *Indian J Public Health*, **10** (4), 129-132.

? Sen, D.K., Adhya, A.K. and Das, K.K. (1973), Survey of drinking water supply and excreta disposal in slums in a selected urban locality in Calcutta-1970. *Indian J Public Health*, **17** (1), 33-41.

? Rao, S.V. (1982), A review of WHO drinking water and sanitation decade-1981-1990. *Indian J Public Health*, **26** (1), 60-61.

? Ray, S.K., Ghosh, S., Tiwari, I.C., Nagchaudhuri, J., Kaur, P. and Reddy, D.C. (1982), Prevalence of dental fluorosis in relation to fluoride in drinking water in two villages of Varanasi (U.P.). *Indian J Public Health*, **26** (3), 173-178.

? Kaphalia, B.S., Chandra, H., Bhargava, S.K., Seth, T.D. and Gupta, B.N. (1983), Lead in drinking water. *Indian J Public Health*, **27** (2), 64-69.

? Ray, S.K., Reddy, D.E., Kaur, P., Chaudhuri, J.N. and Tiwari, I.C. (1989), An epidemiological study of goitre in two rural communities of Varanasi. *Indian J Public Health*, **33** (1), 9-14.

Abstract: A cross sectional study was conducted in two rural communities of Varanasi during the period from January to December 1978 to find out the problem of endemic goitre. The overall prevalence of goitre was as high as 28.44% with 9.45% of adolescent (13-18 years) population having grade I enlargement. The highest prevalence was observed in 7-12 years of age group, the females being consistently more affected in all the age groups. The prevalence of goitre and iodine level of drinking water found to have an inverse relationship.

? Chakraborty, A.K. (1991), Drinking water supply and sanitation decade (1981-90) [editorial]. *Indian J Public Health*, **35** (1), 3-4.

? Lal, P., Bansal, A.K., Aggarwal, C.S., Taneja, D.K. and Gogia, V. (1996), Incidence of diarrhoea and some related environmental and behavioural factors in Jhuggis of Delhi. *Indian J Public Health*, **40** (2), 35-37.

Abstract: A total of 6285 persons residing in 1090 households in three Jhuggi clusters of Delhi were studied for incidence of diarrhoea by 2 weeks recall method and environmental and behavioural factors affecting it. Overall incidence of Diarrhoea was 29.1 per thousand persons, and was selectively predominant among under fives (60.2 per thousand). This low incidence of diarrhoea could be attributed to safe drinking water availability and common practice of handwashing by most of the people. But unsafe storage of drinking water at household level (70.5%) and peridomestic open air defaecation by children (22.9%) are potential threat for transmission of the disease.

? Chakraborty, M., Saha, J.B., Bhattacharya, R.N., Roy, A. and Ram, R. (1997), Epidemiological correlates of dental caries in an urban slum of West Bengal. *Indian J Public Health*, **41** (2), 56-60, 67.

Abstract: The overall prevalence of dental caries was found to be 57.47 percent in an urban slum irrespective of sex, with a maximum of 75.88 percent in the age group of 5-9 years. Habit of taking hard and sticky food, bad oral hygiene were some of the important epidemiological correlates. Fluoride content of drinking water did not show any significant role.

# Title: Indian Journal of Technology

Full Journal Title: Indian Journal of Technology

ISO Abbreviated Title: Indian J. Technol.

JCR Abbreviated Title: Indian J Technol

ISSN: 0019-5669

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Council Scientific Industrial Research, New Delhi

Publisher Address:

Subject Categories: Impact Factor

? Singh, B., Bhat, G.N. and Kuloor, N.R. (1965), Kinetics of adsorption of zinc acetate by charcoal from solutions. *Indian Journal of Technology*, **3** (4), 119-??.

? John, P.T. and Datta, K.K. (1971), Derivation of adsorption isotherms for different pressure ranges from a single isotherm. *Indian Journal of Technology*, **9** (6), 199-??.

? John, P.T. and Aggarwal, R.K. (1975), Adsorption-isotherm for determining monolayer capacity at any relative pressure and mean pore-size. *Indian Journal of Technology*, **13** (12), 556-560.

? Sarfare, P.S. (1976), Direct evaluation of free-energy change from a single adsorption-isotherm. *Indian Journal of Technology*, **14** (5), 219-221.

? Nagpal, K.C. and John, P.T. (1978), Comparison of isostere equation for adsorbed state with that based on John isotherm equation. *Indian Journal of Technology*, **16** (3), 123-125.

? Nagpal, K.C., Ghori, T.A.K. and John, P.T. (1979), Implication of the linearity range and the extrapolation of Johns adsorption-isotherm. *Indian Journal of Technology*, **17** (2), 73-76.

? Nagpal, K.C., Ghori, T.A.K. and John, P.T. (1979), Deduction of johns adsorption-isotherm equation from vapor diffusion equation. *Indian Journal of Technology*, **17** (9), 361-363.

? John, P.T., Suri, D.K. and Nagpal, K.C. (1980), Degree and volume of microporosity and a measure of size range of micropores of adsorbents from the parameters of Johns isotherm. *Indian Journal of Technology*, **18** (6), 225-228.

? John, P.T., Ghori, T.A.K. and Nagpal, K.C. (1980), Monolayer capacity from dye and other solutes adsorption by the application of Johns adsorption-isotherm. *Indian Journal of Technology*, **18** (6), 261-262.

Singh, V.N., Mishra, G. and Panday, K.K. (1984), Removal of Congo Red by wollastonite. *Indian Journal of Technology*, **22** (2), 70-71.

? Das, N.C. and Bandyopadhyay, M. (1993), Removal of nickel by a low-cost natural medium l. *Indian Journal of Technology*, **31** (3), 118-120.

Abstract: The efficiency of vermiculite in removing nickel from aqueous solutions has been studied in batch experiments. The sorption equilibria can be described by a linearised Freundlich isotherm. The uptake of nickel is a function of pH of the suspending medium and appreciable removal observed at both acidic and alkaline ranges. The spent vermiculite can be regenerated by acid and can be reused.

? Keerthinarayana, S. and Bandyopadhyay, M. (1993), Sorption of lindane by wood charcoal. *Indian Journal of Technology*, **31** (11), 751-757.

Abstract: The locally available wood charcoal (WC) is utilized as a sorbent to remove lindane from aqueous phase. An attempt is made to increase the sorption potentiality by treating the WC with HCl and HNO3. Continuously stirred batch reactors (CSBR) are used to understand the significant effect of process parameters, like pH, ionic strength and sorbent dose, on sorption of lindane by WC (1N HNO, treated) (here afterwards referred as WCT). The increase in sorbent dosage (from 2.5-25 g/L) increased the removal of lindane, for all sizes of WCT. However, the effect of ionic strength is least on lindane sorption. The effect of temperature on remover kinetics of lindane is also studied and the reaction rate is found to be directly proportional to the temperature. The isosteric heat of adsorption is -3.7 to -4.8 kcal/mol and hence the interaction between lindane and WCT is best explained as physi-sorption.

# Title: Indoor Air

Full Journal Title: Indoor Air

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sundell, J. and Nazaroff, W.W. (2009), The most cited articles in Indoor Air, through 18 years. *Indoor Air*, **19** (2), 91-92.

Full Text: [2009\Ind Air19, 91.pdf](2009/Ind%20Air19,%2091.pdf)

# Title: Indoor Air-International Journal of Indoor Air Quality and Climate

Full Journal Title: Indoor Air-International Journal of Indoor Air Quality and Climate

ISO Abbreviated Title: Indoor Air-Int. J. Indoor Air Qual. Clim.

JCR Abbreviated Title: Indoor Air

ISSN: 0905-6947

Issues/Year: 4

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:

Construction & Building Technology Engineering, Environmental: Impact Factor

# Title: Industrial and Corporate Change

Full Journal Title: [Industrial and Corporate Change](http://icc.oupjournals.org/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Grupp, H. (2000), Learning in a science-driven market: The case of lasers. *Industrial and Corporate Change*, **9**, 143-172.

Full Text: [I\Ind Cor Cha9, 143.pdf](I/Ind%20Cor%20Cha9,%20143.pdf)

Abstarct: Innovation literature centres more on technical advance and less on scientific change. In this paper the scientific basiscomes under specific scrutiny. The empirical part consists ofa case study of the laser market and the particularly interestinglaser medicine submarket. A new measurement concept known as‘technometrics’ measures the quality of innovative productsfrom their technological characteristics. It is found that ina knowledge-driven market in which ‘inventions are in searchof a purpose’, two stages of market formation can be discerned:a wasteful science-pushed, and a subsequent demand-led period.Pricing of the innovative products can be explained by a fewleading characteristics, but certain providers are able to createstable demand from public knowledge with non-optimal price-performanceratios.

Mahdi, S. (2003), Search strategy in product innovation process: Theory and evidence from the evolution of agrochemical lead discovery process. *Industrial and Corporate Change*, **12**, 235-270.

Full Text: [I\Ind Cor Cha12, 235.pdf](I/Ind%20Cor%20Cha12,%20235.pdf)

Abstract: This paper investigates different problem-solving strategies—hereincalled ‘search strategies’—in the processof product innovation. It takes issue with the basic assumptionof current models of the product innovation process (PIP), whichunrealistically consider that the actors of product innovation—theproduct innovators—are all hyper-rational, homogeneous and non-choice-restricted actors. In order to take into accountthe more realistic view of the product innovators—as boundedrational, heterogeneous and choice-restricted actors—thispaper proposes an alternative model of PIP based on cognitivepsychology. According to this framework, the options of searchstrategy available to each product innovator depend on certain‘problem-solving-related’ capabilities that he orshe is able or not to use. To examine the validity of this theoreticalframework, this paper investigates the phenomenon of the evolutionof discovery methods in the agrochemical lead discovery process.Data for this investigation have been gathered through chronologicalproduct innovation survey of an agrochemical product registrationdatabase as well as a patent and publications index database.Results from this investigation seem to confirm the above argument.

# Title: Industrial Crops and Products

Full Journal Title: [Industrial Crops and Products](http://www.sciencedirect.com/science/journal/09266690)

ISO Abbrev. Title: Ind. Crop. Prod.

JCR Abbrev. Title: Ind Crop Prod

ISSN: 0926-6690

Issues/Year: 6

Language: English

Journal Country/Territory: Netherlands

Publisher: Elsevier Science BV

Publisher Address: Po Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Agricultural Engineering: Impact Factor 2.103, 3/11 (2009)

Agronomy: Impact Factor 2.103, 12/61 (2009)

Harel, P., Mignot, L., Sauvage, J.P. and Junter, G.A. (1998), Cadmium removal from dilute aqueous solution by gel beads of sugar beet pectin. *Industrial Crops and Products*, **7** (2-3), 239-247.

Full Text: [I\Ind Cro Pro7, 239.pdf](I/Ind%20Cro%20Pro7,%20239.pdf)

Abstract: The metal-accumulative capabilities of polysaccharide gel entrapped microorganisms may be of interest for the treatment of waste water containing low amounts of metal ions. The cost of the gel matrix, however, seriously impedes the large-scale development of such immobilized-cell systems. We have therefore considered the use of pectin extracted from sugar beet pulp as a cost-effective alternative to commercial algal alginate and citrus pectin. A simple, inexpensive alkaline hydrolysis was sufficient to reduce by 80% the acetylation degree of sugar beet pectin (SBP) so that the rheological properties of the polymer in aqueous solution became close to those of citrus pectin. For instance, the intrinsic viscosity of saponified SBP was 157 cm3 g−1, that of citrus pectin 197 cm3 g−1. Hydrolyzed SBP was able to form gels (at concentrations of 2% w/v or higher) in the presence of divalent cations (Ca2+). The cadmium-binding capacity (*Q*a, mg Cd2+ g−1 dry gel) of SBP gel beads compared favourably to that of algal alginate but remained somewhat lower than that of citrus pectin: *Q*a SBP=4.6; *Q*a alginate=4.1; *Q*a citrus pectin=7.6. The desorption of Cd2+ ions from SBP gel beads in 0.3 M calcium chloride was easy, reaching 81% of the metal accumulated. The viability of microbial cells entrapped in SBP gel beads was maintained.

Keywords: Alginate, Biosorption, Cadmium, Heavy Metals, Immobilized Cells, Pectins, Polysaccharide Gels

? Tondi, G., Oo, C.W., Pizzi, A., Trosa, A. and Thevenon, M.F. (2009), Metal adsorption of tannin based rigid foams. *Industrial Crops and Products*, **29** (2-3), 336-340.

Full Text: [2009\Ind Cro Pro29, 336.pdf](2009/Ind%20Cro%20Pro29,%20336.pdf)

Abstract: Tannin based rigid foams are structures in which flavonoids are randomly cross-linked with furanic units throughout covalent bonds. The use of these aromatic substrates from natural materials to trap some heavy metal ions dissolved in water solutions is described. Interesting results have been achieved using different mimosa bark tannin (Acacia mearnsii formerly mollissima, De Wildt) and pine bark tannin (Pinus radiata) mixed foams. Capability to catch Pb2+ and Cu2+ ions at different concentrations has been verified throughout ICP-OES analysis of the foams. A reliable proportionality has been found between initial concentration and percentage of metal ions adsorbed. These foams were able to adsorb up to 12.5% of Cu(II) and 20.1% of Pb(II) with respect to the concentration of these ions in solution. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Adhesives, Adsorption, Bark, Furanic, Heavy Metals, Ions, Mechanism, Pollution, Removal, Rigid Foams, Sorption, Tannin, Wastewater

? Rakotondramasy-Rabesiaka, L., Havet, J.L., Porte, C. and Fauduet, H. (2009), Solid-liquid extraction of protopine from Fumaria officinalis L.-Kinetic modelling of influential parameters. *Industrial Crops and Products*, **29** (2-3), 516-523.

Full Text: [2009\Ind Cro Pro29, 516.pdf](2009/Ind%20Cro%20Pro29,%20516.pdf)

Abstract: The influences of such parameters as percentage of ethanol in solvent, solid-liquid weight ratio and pH of medium on the protopine extraction from Fumaria officinalis particles with mean radius of 0.4-0.5 mm was studied. A mathematical model, describing the importance of each parameter on the extraction of protopine with pseudo-second-order kinetics was proposed and the results were discussed. A numerical solution was obtained, which was compared with the experimental data for the increase in protopine concentration in the liquid phase. A satisfactory fit with experimental data was observed. (C) 2008 Elsevier B.V All rights reserved.

Keywords: Leaching, Kinetics, Mathematical Modelling, Fumaria Officinalis, Protopine, Mass Transfer, Tilia Sapwood, Optimization

? Oo, C.W., Kassim, M.J. and Pizzi, A. (2009), Characterization and performance of Rhizophora apiculata mangrove polyflavonoid tannins in the adsorption of copper(II) and lead(II). *Industrial Crops and Products*, **30** (1), 152-161.

Full Text: [2009\Ind Cro Pro30, 152.pdf](2009/Ind%20Cro%20Pro30,%20152.pdf)

Abstract: The wasted barks of Rhizophora apiculata mangrove from charcoal industry were explored as a potential source in producing tannins-based adsorbent for heavy metal ions. The polyflavonoid tannins extracted from these barks were subjected to FTIR and solid-state NMR analysis. The mangrove tannins contain high proportion of procyanidins to prodelphinidins with predominant C4-C8 interflavonoid linkages. The performance of mangrove tannins in removing copper(II) and lead(II) were evaluated. Effecting parameters like initial pH, initial concentrations of metal ions and contact time were investigated. The adsorption equilibrium data was fitted with Langmuir, Freundlich, Sips and Dubinin-Radushkevich isotherm models. Mangrove tannins-based adsorbent showed monolayer adsorption capacity of 8.78 mg/g for copper(II) and 31.32 mg/g for lead(II) in which the adsorption processes were found to follow pseudo second-order kinetic reaction. The metal ions could interact with the hydroxyl groups of mangrove tannins through an ion exchange and/or complexation process. (c) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Analysis, Aqueous-Solutions, Biosorption, Capacity, Characterization, Complexation, Copper, Data, Equilibrium, Freundlich, FTIR, Heavy Metal, Heavy Metal Ions, Heavy-Metals, Ion Exchange, Ion-Exchange, Ions, Isotherm, Kinetic, Langmuir, Lead, Mangrove Tannins, Metal, Metal Ions, Metal-Ions, Models, Monolayer, NMR, Performance, pH, Pinus-Pinaster Bark, Potential, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Removal, Rights, Sawdust Adsorption, Second Order, Second-Order, Solid-State NMR, Sorption, Source, Spectroscopy

? Ofomaja, A.E. (2011), Kinetics and pseudo-isotherm studies of 4-nitrophenol adsorption onto mansonia wood sawdust. *Industrial Crops and Products*, **33** (2), 418-428.

Full Text: [2011\Ind Cro Pro33, 418.pdf](2011/Ind%20Cro%20Pro33,%20418.pdf)

Abstract: Kinetic models alone are usually applied to describe adsorption onto porous materials, but little attention is given to the fact that diffusion of pollutants especially large organic pollutant molecules may also control the reaction rates. In this investigation, the kinetics and pseudo-isotherm studies of an organic pollutant, 4-nitrophenol from aqueous solution on mansonia sawdust was examined. The intraparticle diffusion particle plots revealed three distinct sections representing sorption into external diffusion, intraparticle diffusion and diffusion to a biosorption site within the particles. The fractional removal of pollutant versus square root of time plots further revealed three sectional straight lines whose slope may represent the rates of pollutant sorption into macro-, meso- and micropores. The equilibrium capacities determined using four forms of the Ho’s pseudo-second order model and the Type-1 pseudo second-order expression was also used to evaluate equilibrium concentrations and pseudo-isotherms were obtained by changing initial concentration. C-0. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Aqueous-Solution, Biosorption, Coconut Copra Meal, Dye Adsorption, Equilibrium, External Mass Transfer, Film and Pore Diffusion, Ho’s Pseudo-Second Order Model, Kinetic, Kinetic Models, Kinetics, Lead-Ion Sorption, Methylene-Blue, Nonlinear Methods, Palm Kernel Fiber, Pseudo-Isotherms, Sorption, Sphagnum Moss Peat, Tree Fern

? Mahmoodi, N.M., Hayati, B. and Arami, M. (2012), Kinetic, equilibrium and thermodynamic studies of ternary system dye removal using a biopolymer. *Industrial Crops and Products*, **35** (1), 295-301.

Full Text: [2012\Ind Cro Pro35, 295.pdf](2012/Ind%20Cro%20Pro35,%20295.pdf)

Abstract: In this paper, dye removal ability of sodium alginate (SA) as a biopolymer from ternary systems was investigated. Physical characteristics of SA were studied using Fourier transform infra-red (FTIR) and scanning electron microscopy (SEM). Three textile basic dyes were used as model compounds. The adsorption kinetics, isotherms and thermodynamics were studied. The effect of SA dosage, initial dye concentration and pH on dye removal was elucidated. It was found that adsorption kinetics of dyes followed with pseudo-second order kinetics. In addition, dyes followed with Langmuir, and extended Langmuir isotherm in single and ternary systems, respectively. The thermodynamic data showed that the dye adsorption onto SA was a spontaneous, endothermic and physisorption reaction. Based on the data of present investigation, one could conclude that the alginate being a biocompatible, eco-friendly and low-cost adsorbent might be a suitable alternative for elimination of dyes from colored aqueous solutions. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Alginate, Aqueous-Solutions, Biopolymer, Dye Removal, Equilibrium, FTIR, Isotherm, Kinetic, Kinetics, Langmuir, pH, Sepiolite, Ternary System, Thermodynamic, Waste, Water

# Title: Industrial and Engineering Chemistry

(Ind. Eng. Chem.; Ind. Engng. Chem.)

Full Journal Title: [Industrial and Engineering Chemistry](http://pubs3.acs.org/acs/journals/toc.page?incoden=iechad)

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Issues/Year:

Journal Country/Territory:

Language:

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Subject Categories:

: Impact Factor

? Reinmuth, O. and Gordon, N.E. (1923), Effect of hydrogen-ion concentration on adsorption of dyes by wool and mordants - Preliminary paper. *Industrial and Engineering Chemistry*, **15** (8), 818.

Full Text: [-1959\Ind Eng Che15, 818.pdf](-1959/Ind%20Eng%20Che15,%20818.pdf)

? Marker, R.E. and Gordon, N.E. (1924), Effect of hydrogen-ion concentration on compound formation and adsorption of dyes by mordants. *Industrial and Engineering Chemistry*, **16** (11), 1186-1188.

Full Text: [-1959\Ind Eng Che16, 1186.pdf](-1959/Ind%20Eng%20Che16,%201186.pdf)

Notes: highly cited

? Lewis, W.K. and Whitman, W.G. (1924), Principles of gas absorption. *Industrial and Engineering Chemistry*, **16** (12), 1215-1220.

Full Text: [-1959\Ind Eng Che16, 1215.pdf](-1959/Ind%20Eng%20Che16,%201215.pdf)

? Larian, M., Lavine, I., Mann, C.A. and Gauger, A.W. (1930), II Sorption of water vapor by lignite, peat, and wood. *Industrial and Engineering Chemistry*, **22** (11), 1231-1234.

Full Text: [-1959\Ind Eng Che22, 1231.pdf](-1959/Ind%20Eng%20Che22,%201231.pdf)

Abstract: A study of the sorption of water by North Dakota lignite, Minnesota peat, and birch wood shows the characteristics of the desorption and adsorption process to be the same for the three materials. Hysteresis is found to be present with the three materials investigated. Pore radii have been calculated by means of the Thompson equation and in terms of pore size we obtain the following classification in order of decreasing pore size: peat, birch wood, lignite, and brown coal.

? McKee, R.H. and Johnston, W.S. (1934), Removal of fluorides from drinking water. *Industrial and Engineering Chemistry*, **26** (8), 849-851.

Full Text: [I\Ind Eng Che26, 849.pdf](I/Ind%20Eng%20Che26,%20849.pdf)

? Saeman, J.E. (1945), Kinetics of wood *Saccharification*: Hydrolysis of cellulose and decomposition of sugars in dilute acid at high temperature. *Industrial and Engineering Chemistry*, **37** (1), 43-52.

Full Text: [I\Ind Eng Che37, 43.pdf](I/Ind%20Eng%20Che37,%2043.pdf)

Broughton, D.B. (1948), Adsorption isotherms for binary gas mixtures. *Industrial and Engineering Chemistry*, **40** (8), 1506-1508.

Full Text: [I\Ind Eng Che40, 1506.pdf](I/Ind%20Eng%20Che40,%201506.pdf)

? Eagle, S. and Scott, J.W. (1950), Liquid phase adsorption equilibria and kinetics. *Industrial and Engineering Chemistry*, **42** (7), 1287-1294.

Full Text: [I\Ind Eng Che42, 1287.pdf](I/Ind%20Eng%20Che42,%201287.pdf)

? Ray, G.C. and Box, Jr., E.O. (1950), Adsorption of gases on activated charcoal. *Industrial and Engineering Chemistry*, **42** (7), 1315-1318.

Full Text: [I\Ind Eng Che42, 1315.pdf](I/Ind%20Eng%20Che42,%201315.pdf)

? Smith, N.L. and Amundson, N.R. (1951), Intraparticle diffusion in catalytic heterogeneous systems. *Industrial and Engineering Chemistry*, **43** (9), 2156-2167.

Full Text: [-1959\Ind Eng Che43, 2156.pdf](-1959/Ind%20Eng%20Che43,%202156.pdf)

Abstract: This research was undertaken in order to determine the effect of intraparticle diffusion in catalytic heterogeneous systems and to determine its relative importance on the over-all rate process. Formulas were derived which take into consideration diffusion of reactants and products, reaction rate, and mass transfer at the particle surface for three types of reactors: well-agitated continuous flow reactor, packed tube continuous reactor, and batch reactor. The reaction assumed that A ↔ B, a simple reversible reaction, first order in each direction, takes place inside the particle. The equations obtained related the physical and chemical parameters of the system to the operating variables. In order to obtain experimental confirmation, the hydrolysis of an ester, ethyl formate, was studied using Dowex 50, a cation exchange resin, as a catalyst. Experiments performed on different sizes of particles for continuous flow and batch reactors, in general, validated the equations. The formulas should be of use in theoretical kinetic studies as well as in the design of commercial reactors. The experimental work showed that diffusion may be a factor in some heterogeneous processes.

Notes: IIsotherm

? Koble, R.A. and Corrigan, T.E. (1952), Adsorption isotherms for pure hydrocarbons. *Industrial and Engineering Chemistry*, **44** (2), 383-387.

Full Text: [I\Ind Eng Che44, 383.pdf](I/Ind%20Eng%20Che44,%20383.pdf)

? Jury, S.H. and Licht, Jr., W. (1952), Static sorption isotherm for beta-soluble anhydrite and humid air. *Industrial and Engineering Chemistry*, **44** (3), 591-594.

Full Text: [I\Ind Eng Che44, 591.pdf](I/Ind%20Eng%20Che44,%20591.pdf)

? Edeskuty, E.J. and Amundson, N.R. (1952), Effect of intraparticle diffusion: Agitated nonflow adsorption systems. *Industrial and Engineering Chemistry*, **44** (7), 1698-1705.

Full Text: [I\Ind Eng Che44, 1698.pdf](I/Ind%20Eng%20Che44,%201698.pdf)

Othmer, D.F. and Thakar, M.S. (1953), Correlating diffusion coefficients in liquids. *Industrial and Engineering Chemistry*, **45** (3), 589-593.

Full Text: [I\Ind Eng Che45, 589.pdf](I/Ind%20Eng%20Che45,%20589.pdf)

Cook, M.A. and Oblad, A.G. (1953), Dynamic mechanism of heterogeneous catalysis. *Industrial and Engineering Chemistry*, **45** (7), 1456-1461.

Full Text: [I\Ind Eng Che45, 1456.pdf](I/Ind%20Eng%20Che45,%201456.pdf)

Notes: MModel

Vermeulen, T. (1953), Theory for irreversible and constant-pattern solid diffusion. *Industrial and Engineering Chemistry*, **45** (8), 1664-1670.

Full Text: [I\Ind Eng Che45, 1664.pdf](I/Ind%20Eng%20Che45,%201664.pdf)

? Dryden, C.E. and Kay, W.B. (1954), Kinetics of batch adsorption and desorption. *Industrial and Engineering Chemistry*, **46** (11), 2294-2300.

Full Text: [I\Ind Eng Che46, 2294.pdf](I/Ind%20Eng%20Che46,%202294.pdf)

Hirschler, A.E. and Mertes, T.S. (1955), Liquid-phase adsorption studies related to the arosorb process. *Industrial and Engineering Chemistry*, **47** (2), 193-202.

Full Text: [I\Ind Eng Che47, 193.pdf](I/Ind%20Eng%20Che47,%20193.pdf)

? Keller, E. (1964), Solar energy in distillation of sea water. *Industrial and Engineering Chemistry*, **56** (2), 10-??.

Full Text: Ind Eng Che56, 10.pdf

? Gorring, R.L. and Weekman, Jr., V.W. (1966), Applied kinetics and chemical reaction engineering. *Industrial and Engineering Chemistry*, **58** (9), 18-19.

Full Text: [1960-80\Ind Eng Che58, 18.pdf](1960-80/Ind%20Eng%20Che58,%2018.pdf)

? Haden, Jr., W.L. and Schwint, I.A. (1967), Attapulgite - Its properties and applications. *Industrial and Engineering Chemistry*, **59** (9), 58-69.

Full Text: [1960-80\Ind Eng Che59, 58.pdf](1960-80/Ind%20Eng%20Che59,%2058.pdf)

# Title: Industrial & Engineering Chemistry

[Industrial & Engineering Chemistry Research](http://pubs.acs.org/journals/iecred/index.html)

[I&EC](http://pubs3.acs.org/acs/journals/toc.page?incoden=iechad) Industrial & Engineering Chemistry (1909-1970)

[I&EC Fundamentals](http://pubs3.acs.org/acs/journals/toc.page?incoden=iecfa7) (1962-1986)

[I&EC Process Design and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepdaw) (1962-1986)

[I&EC Product Research and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepra6) (1962-1986)

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McKee, R.H. and Johnston, W.S. (1934), Removal of flourides from drinking water. *Industrial & Engineering Chemistry*, **26** (8), 849-851.

Full Text: [I\Ind Eng Che26, 849.pdf](I/Ind%20Eng%20Che26,%20849.pdf)

Michaels, A.S. (1952), Simplified method of interpreting kinetic data in fix-bed ion exchange. *Industrial & Engineering Chemistry*, **44** (8), 1922-1930.

Full Text: [I\Ind Eng Che44, 1922.pdf](I/Ind%20Eng%20Che44,%201922.pdf)

Vermeulen, T. (1953), Theory for irreversible and constant-pattern solid diffusion. *Industrial & Engineering Chemistry*, **45** (8), 1664-1670.

Full Text: [I\Ind Eng Che45, 1664.pdf](I/Ind%20Eng%20Che45,%201664.pdf)

# Title: Industrial and Engineering Chemistry Fundamentals

[Industrial & Engineering Chemistry Research](http://pubs.acs.org/journals/iecred/index.html)

[I&EC](http://pubs3.acs.org/acs/journals/toc.page?incoden=iechad) Industrial & Engineering Chemistry (1909-1970)

[I&EC Fundamentals](http://pubs3.acs.org/acs/journals/toc.page?incoden=iecfa7) (1962-1986)

[I&EC Process Design and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepdaw) (1962-1986)

[I&EC Product Research and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepra6) (1962-1986)

Full Journal Title: Industrial and Engineering Chemistry Fundamentals

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Publisher Address:

Subject Categories:

: Impact Factor

Williamson, J.E., Bazaire, K.E. and Geankoplis, C.J. (1963), Liquid-phase mass transfer at low reynolds numbers. *Industrial and Engineering Chemistry Fundamentals*, **2** (2), 126-129.

Full Text: [I\Ind Eng Che Fun2, 126.pdf](I/Ind%20Eng%20Che%20Fun2,%20126.pdf)

Abstrct: Liquid-phase mass transfer coefficients were obtained for packed beds of benzoic acid spheres and water in the Reynolds number *(N”R~)* range of *0.08* to 120. All previous data were obtained with granular solids or modified spheres. The previous correlation for *J’* of Gaffney and Drew extended down to N “ R ~ of *0.8,* with considerable scatter of the data and uncertainty of the slope of the line in the range of *N “ R ~* below 50. The present data confirm the exponent on the Schmidt number in *J’* of 0.58 for liquids. The data check those of Goffney and Drew and McCune and Wilhelm above a N “ R ~ of *0.8.* Equations are proposed for the entire liquid range.

Notes: highly cited

Hall, K.R., Eagleton, L.C., Acrivos, A. and Vermeulen, T. (1966), Pore- and solid-diffuion kinetics in fixed-bed adsorption under constant-pattern conditions. *Industrial and Engineering Chemistry Fundamentals*, **5** (2), 212-223.

Full Text: [I\Ind Eng Che Fun5, 212.pdf](I/Ind%20Eng%20Che%20Fun5,%20212.pdf)

Abstract: In the favorable-equilibrium adsorption region, the constant-pattern form of the isothermal breakthrough curves is known only approximately for the solid-diffusion (or pore-surface-diffusion) mechanism, and is not soluble analytically for the pore-diffusion mechanism. Numerical solutions for both these cases, in a widely applicable dimensionless form, have been obtained for a range of Langmuir isotherms by stepwise computation on a digital computer. These numerical results merge smoothly into the respective analytic solutions for completely irreversible equilibrium; for this case, combinations of pore diffusion and external mass transfer are also analyzed.

Keywords: Adsorption, Kinetics

Stuart, F.X. and Camp, D.T. (1967), Comparison of kinetic and diffusional models for packed bed adsorption. *Industrial and Engineering Chemistry Fundamentals*, **6** (1), 156-158.

Full Text: [I\Ind Eng Che Fun6, 156.pdf](I/Ind%20Eng%20Che%20Fun6,%20156.pdf)

Abstract: The solutions to the adsorption problem with external resistance and internal diffusion controlling for linear equilibrium are compared using Fick’s second law and a kinetic model approximation for the internal portion of the resistance. A deviation between the solutions is found for low values of the bed length parameter.

Lerch, R.G. and Ratkowsky, D.A. (1967), Optimum allocation of adsorbent in stagewise adsorption operations. *Industrial and Engineering Chemistry Fundamentals*, **6** (2), 308-310.

Full Text: [I\Ind Eng Che Fun6, 308.pdf](I/Ind%20Eng%20Che%20Fun6,%20308.pdf)

Petrovic, L.J. and Thodos, G. (1968), Mass transfer in the flow of gases through packed beds. *Industrial and Engineering Chemistry Fundamentals*, **7** (2), 274-280.

Full Text: [I\Ind Eng Che Fun7, 274.pdf](I/Ind%20Eng%20Che%20Fun7,%20274.pdf)

Abstract: Mass transfer factors associated with the vaporization of water and heavy hydrocarbons from the surface of porous spheres, 0.0721 to 0.370 inch in diameter, have been established in the low Reynolds number region (3 < N R ~ < 230) taking into account a correction for axial mixing. The carrier gas used was air which flowed through packed and dispersed beds of these spheres. To produce a dispersed bed, porous spheres saturated with a liquid were placed in a matrix of dry glass spheres. The results for both types of beds have been correlated with the Reynolds number to produce a single relationship of *Ejd*vs. NR~.

Colwell, C.J. and Dranoff, J.S. (1969), Nonlinear equilibrium and axial mixing effects in intraparticle diffusion-controlled sorption by ion exchange resin beds: Computer analysis. *Industrial and Engineering Chemistry Fundamentals*, **8** (2), 193-198.

Full Text: [I\Ind Eng Che Fun8, 193.pdf](I/Ind%20Eng%20Che%20Fun8,%20193.pdf)

Abstract: The effects of nonlinear equilibrium and axial mixing on sorption processes in packed ion exchange resin beds have been studied by digital computer simulation of column performance. Results show clearly that the presence of these effects leads to false estimates of apparent intraparticle diffusivities when a linear model is used in analyzing data. A technique for estimation of true diffusivities from apparent values is presented.

van Ness, H.C. (1969), Adsorption of gasses on solids. *Industrial and Engineering Chemistry Fundamentals*, **8** (3), 464-473.

Full Text: [I\Ind Eng Che Fun8, 464.pdf](I/Ind%20Eng%20Che%20Fun8,%20464.pdf)

Abstract: It is the function of thermodynamics to relate those properties of a system required for practical or theoretical purposes to the parameters that are most readily measured, and thus to provide the maximum return of information for any investment in experiment. This paper explores how thermodynamics may most effectively serve this end in mixed-gas adsorption.

Vermeule, T. and Quilici, R.E. (1970), Analytic driving-force relation for pore-diffusion kinetics in fixed-bed adsorption. *Industrial and Engineering Chemistry Fundamentals*, **9** (1), 179-180.

Full Text: [I\Ind Eng Che Fun9, 179.pdf](I/Ind%20Eng%20Che%20Fun9,%20179.pdf)

Abstract: An equation describes the course of pore-diffusion breakthrough in fixed-bed adsorption in terms of bulk concentrations at each point in the bed.

Cooper, R.S. and Liberman, D.A. (1970), Fixed-bed adsorption kinetics with pore diffusion control. *Industrial and Engineering Chemistry Fundamentals*, **9** (4), 620-623.

Full Text: [I\Ind Eng Che Fun9, 620.pdf](I/Ind%20Eng%20Che%20Fun9,%20620.pdf)

Abstract: A general analytic solution has been obtained for the time-dependent behavior of a fixed-bed absorption or ion exchange column under the conditions of pore diffusion control and irreversible equilibrium, without the constant pattern assumption. This is a single dimensionless solution which does not depend explicitly on the column or rate parameters, but only on two dimensionless combinations of them. The constant pattern as calculated by Hall is fully developed in a finite time and finite column length.

Colwell, C.J. and Dranoff, J.S. (1971), Nonlinear equilibrium and axial mixing effects in intraparticle diffusion-controlled sorption by ion exchange resin beds: Experimental study. *Industrial and Engineering Chemistry Fundamentals*, **10** (2), 65-70.

Full Text: [I\Ind Eng Che Fun10, 65.pdf](I/Ind%20Eng%20Che%20Fun10,%2065.pdf)

Abstract: The effects of slightly nonlinear equilibria and axial dispersion on the performance of a packed bed of ion exchange resin used for the sorption of nonelectrolytes were studied. Experiments with dilute aqueous solutions of acetone and ethylene glycol show that these effects lead to false estimates of the intraparticle diffusivity of the solute within the resin beads when a linear model is used to analyze the data. However, predictions based on a representative computer model are in close agreement with data.

Bischoff, K.B. (1971), Fixed-bed adsorption kinetics with pore diffusion control. *Industrial and Engineering Chemistry Fundamentals*, **10** (2), 327.

Full Text: [I\Ind Eng Che Fun10, 327.pdf](I/Ind%20Eng%20Che%20Fun10,%20327.pdf)

Cooper, R.S. (1971), Fixed-bed adsorption kinetics with pore diffusion control. *Industrial and Engineering Chemistry Fundamentals*, **10** (2), 328.

Full Text: [I\Ind Eng Che Fun10, 328.pdf](I/Ind%20Eng%20Che%20Fun10,%20328.pdf)

Cooney, D.O. and Strusi, F.P. (1972), Analytical description of fixed-bed sorption of two Langmuir solutes under nonequilibrium conditions. *Industrial and Engineering Chemistry Fundamentals*, **11** (1), 123-126.

Full Text: [I\Ind Eng Che Fun11, 123.pdf](I/Ind%20Eng%20Che%20Fun11,%20123.pdf)

Abstract: It is shown that the concentration relationship which exists between two Langmuir solutes during nonequilibrium constant-pattern saturation of a sorbent bed is essentially the same as that for equilibrium operationwhen the ratio of the solutes’ mass transfer coefficients is near unity. Analytical expressions for column concentration profiles, derived using the equilibrium concentration relationship, are presented.

Notes: IIsotherm; highly cited

Radke, C.J. and Prausnitz, J.M. (1972), Adsorption of organic solutes from dilute aqueous solution on activated carbon. *Industrial and Engineering Chemistry Fundamentals*, **11** (4), 445-451.

Full Text: [I\Ind Eng Che Fun11, 445.pdf](I/Ind%20Eng%20Che%20Fun11,%20445.pdf)

Abstract: Experimental data are reported for adsorption of propionitrile and 2-propanol from dilute aqueous solution at 0, 25, and 70°C. Acetone, p-cresol, and p-chlorophenol were studied ut 25°C. The adsorbent was activated carbon (Filtrasorb 300) with a BET surface area of 1000 m2/g. The data cover a concentration range from 10-5to 10-1 M. p-Cresol and p-chlorophenol are adsorbed much more strongly than any of the other organic solutes. A new three-parameter empirical equation is successful for fitting the isotherms over the entire concentration range. The experimental results are used to establish a semiquantitative corresponding-states correlation.

Fleck, R.D., Kirwan, D.J. and Hall, K.R. (1973), Mixed-resistance diffusion kinetics in fixed-bed adsorption under constant pattern conditions. *Industrial and Engineering Chemistry Fundamentals*, **12** (1), 95-99.

Full Text: [I\Ind Eng Che Fun12, 95.pdf](I/Ind%20Eng%20Che%20Fun12,%2095.pdf)

Abstract: Numerical solutions of the equations describing adsorption (or ion exchange) in fixed-bed columns are presented for various combinations of mass-transfer resistances under constant pattern conditions. Breakthrough curves have been developed for pore, solid, and external diffusion acting separately and in combination for adsorption equilibrium described by the Langmuir or Freundlich isotherms.

Furusawa, T. and Smith, J.M. (1973), Fluid-particle and intraparticle mass transport rates in slurries. *Industrial and Engineering Chemistry Fundamentals*, **12** (2), 197-203.

Full Text: [I\Ind Eng Che Fun12, 197.pdf](I/Ind%20Eng%20Che%20Fun12,%20197.pdf)

Abstract: Fluid-particle and intraparticle mass transport rates were measured at 25°C and 1 atm pressure for the adsorption of benzene in aqueous slurries of activated carbon. The effects of particle size (1 61-91 2 *p) and* stirrer speed on the fluid-particle mass transfer coefficient, k,, were well correlated using a Reynolds number based upon the energy dissipation rate per unit mass of water in the slurry. These results agreed reasonably well with literature data obtained from dissolution experiments. The experimental results strongly indicated that intraparticle diffusion had a retarding effect on the adsorption rate. However, effective diffusivities for the liquid-filled pores were much larger than values predicted from the molecular diffusivity of benzene in water using a normal tortuosity factor. Assuming that surface migration explains this discrepancy, a surface diffusivity of about 0.6×10-8 cm2/sec was obtained.

? Furusawa, T. and Smith, J.M. (1973), Mass-transfer rates in slurries by chromatography. *Industrial and Engineering Chemistry Fundamentals*, **12** (3), 360-364.

Full Text: [1960-80\Ind Eng Che Fun12, 360.pdf](1960-80/Ind%20Eng%20Che%20Fun12,%20360.pdf)

Abstract: Equations are derived for response curves to pulse inputs of tracer into a well-mixed slurry adsorber. This gives relations between the rate parameters for mass transfer and adsorption and the moments of the experimentally measurable response curves. The results provide a method for measuring rate parameters in slurry systems. The method is illustrated by evaluating fluid-to-particle mass transfer coefficients from experimental data for the adsorption of benzaldehyde in slurries of activated carbon particles.

? Furusawa, T. and Smith, J.M. (1973), Dynamics of packed-bed adsorbers using cell model. *Industrial and Engineering Chemistry Fundamentals*, **12** (3), 388-389.

Full Text: [1960-80\Ind Eng Che Fun12, 388.pdf](1960-80/Ind%20Eng%20Che%20Fun12,%20388.pdf)

Abstract: Analysis of response curves to a pulse input provides a method of studying rate parameters in packed beds. The cell model of Deans and Lapidus is used here to derive relations between the moments of the response curves and the equilibrium and transporl rate coefficients for a packed-bed adsorber. The relations, which are restricted to linear adsorption rates, are obtained by adapting moment equations for a well-mixed slurry to each cell of the packed bed. When the Peclet number representing axial mixing in the void spaces is 2, the moment equations based upon the axial dispersion and cell models become identical.

Kočiřík, M., Zikánová, A. and Dubský, J. (1973), Numerical solution of adsorption kinetics with a nonlinear isotherm. *Industrial and Engineering Chemistry Fundamentals*, **12** (4), 440-443.

Full Text: [I\Ind Eng Che Fun12, 440.pdf](I/Ind%20Eng%20Che%20Fun12,%20440.pdf)

Abstract: A numerical solution of the sorption kinetics is presented for a sorbent particle of plane geometry. Sorption kinetics is treated as a diffusional process. Equilibrium is represented by the Langmuir isotherm equation. Results are compared with the approximate solution obtained by replacing the Langmuir isotherm by its tangents. It is shown that, even with the nonlinear adsorption isotherm, the *z / i* law is preserved. An empirical relation was found between the first statistical moment of the kinetic curve and ihe curvature of the isotherm.

? Komiyama, H., Furusawa, T. and Smith, J.M. (1974), Effectiveness factors for adsorption in slurries. *Industrial and Engineering Chemistry Fundamentals*, **13** (3), 293-296.

Full Text: [1960-80\Ind Eng Che Fun13, 293.pdf](1960-80/Ind%20Eng%20Che%20Fun13,%20293.pdf)

Abstract: For transient adsorption processes carried out in slurry adsorbers, both fluid-particle and intraparticle mass transport may retard the rate. It is shown that a time-dependent effectiveness factor can be simply expressed in terms of a diffusion parameter, *ksR/De,* a final fraction of an adsorbate remaining in the fluid phase, and a dimensionless time, provided that the adsorption isotherm is linear. The result should be helpful for rapid estimates of the relative importance of these two transport resistances.

Kocirik, M. and Zikanova, A. (1974), The analysis of adsorption-kinetics in materials with polydisperse pore structure. *Industrial and Engineering Chemistry Fundamentals*, **13** (4), 347-350.

Full Text: [I\Ind Eng Che Fun13, 347.pdf](I/Ind%20Eng%20Che%20Fun13,%20347.pdf)

Abstract: A model of unsteady mass transport within a polydisperse pore adsorbent is developed. The expression for the first statistical moment of kinetic curves is derived for three geometrical forms of the adsorbent particle and consists at least of two terms. The first one depends on the square of the characteristic dimension of the adsorbent particle and characterizes the mass transport rate within the space of macroporosity. The second term is independent of the dimension of the adsorbent particle and characterizes the rate mechanism in the space of microporosity. The treatment was applied to the kinetic experiments performed in the system benzene vapor-active charcoal. The analysis suggests that the overall kinetics is controlled by the rate processes in macroporosity and microporosity simultaneously.

Clifford, D. (1982), Multicomponent ion-exchange calculations for selected ion sparations. *Industrial and Engineering Chemistry Fundamentals*, **21** (2), 141-153.

Full Text: [I\Ind Eng Che Fun21, 141.pdf](I/Ind%20Eng%20Che%20Fun21,%20141.pdf)

Abstract: Equilibrium multicomponent chromatography theory with interference as developed by previous investigators, especially Helfferich, provides a very useful tool for the estimation of breakthrough curves (effluent concentration histories) and compositions of exhausted ion-exchange beds (concentration profiles). In many cases, the ideal shapes of the concentration histories and profiles may be readily calculated from a derived set of general rules and equations assuming constant separation factors. The nitrate and sulfate effluent breakthrough curves from weak-base anion beds with four-component feed (Sot-, NO3-, Cl-, HCO3-) solutions have been accurately predicted using the multicomponent equilibrium theory. The theory has been shown to be particularly useful for predicting the length of a run and the final composition of the exhausted bed at nitrate breakthrough when treating nitratecontaminated drinking water. Some deviations from theory are explained in terms of violations of the model assumptions.

? Kim, K.S., Choi, S.J. and Ihm, S.K. (1983), Simulation of phenol removal from wastewater by liquid membrane emulsion. *Industrial and Engineering Chemistry Fundamentals*, **22** (2), 167-172.

Full Text: [1983\Ind Eng Che Fun22, 167.pdf](1983/Ind%20Eng%20Che%20Fun22,%20167.pdf)

Abstract: A model has been proposed for the removal of phenol from wastewater by use of a liquid membrane during the initial stage when the emulsions do not show any breakage, and a computer simulation of the model’s equations has been performed by estimating the appropriate values of the parameters. The model is based on the assumptions that the aqueous NaOH solution is confined within the radius, Ri, of a water-indl emulsion with a constant volume fraction and that the core radius shrinks as phenol diffuses in. The computed results are found to be in good correlation with the experimental data. It has been shown that the mass transfer resistance for phenol removal exists mainly in the outer liquid membrane layer and that the value of R, obtained from the model fitting is almost the same as that determined by geometrical consideratlon.

# Title: Industrial & Engineering Chemistry Fundamentals

Full Journal Title: Industrial & Engineering Chemistry Fundamentals

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JCR Abbreviated Title:

ISSN:

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Journal Country/Territory:

Language:

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Subject Categories:

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Notes: highly cited

? Peng, D. and Robinson, D.B. (1976), New 2-constant equation of state. *Industrial & Engineering Chemistry Fundamentals*, **15** (1), 59-64.

Full Text: [1960-80\Ind Eng Che Fun15, 59.pdf](1960-80/Ind%20Eng%20Che%20Fun15,%2059.pdf)

Abstract: The development of a new two-constant equation of state in which the attractive pressure term of the semiempirical van der Waals equation has been modified is outlined. Examples of the use of the equation for predicting the vapor pressure and volumetric behavior of singie-component systems, and the phase behavior and volumetric behavior of binary, ternary, and multicomponent systems are given. The proposed equation combines simplicity and accuracy. It performs as well as or better than the Soave-Redlich-Kwong equation in all cases tested and shows its greatest advantages in the prediction of liquid phase densities.

? Gómez-Nieto, M. (1979), Comments on “new 2-constant equation of state”. *Industrial & Engineering Chemistry Fundamentals*, **18** (2), 197.

Full Text: [1960-80\Ind Eng Che Fun18, 197.pdf](1960-80/Ind%20Eng%20Che%20Fun18,%20197.pdf)

? Robinson, D.B. (1979), New 2-constant equation of state - Reply. *Industrial & Engineering Chemistry Fundamentals*, **18** (2), 197.

Full Text: [1960-80\Ind Eng Che Fun18, 197.pdf](1960-80/Ind%20Eng%20Che%20Fun18,%20197.pdf)

# Title: Industrial & Engineering Chemistry Process Design and Development

[Industrial & Engineering Chemistry Research](http://pubs.acs.org/journals/iecred/index.html)

[I&EC](http://pubs3.acs.org/acs/journals/toc.page?incoden=iechad) Industrial & Engineering Chemistry (1909-1970)

[I&EC Fundamentals](http://pubs3.acs.org/acs/journals/toc.page?incoden=iecfa7) (1962-1986)

[I&EC Process Design and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepdaw) (1962-1986)

[I&EC Product Research and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepra6) (1962-1986)

Full Journal Title: Industrial & Engineering Chemistry Process Design and Development

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Blumenth, J.L. and Nobe, K. (1966), Catalytic combustion and adsorption kinetics of carbon monoxide on cupric oxide. *Industrial & Engineering Chemistry Process Design and Development*, **5** (2), 177-183.

Full Text: [I\Ind Eng Che Pro Des Dev5, 177.pdf](I/Ind%20Eng%20Che%20Pro%20Des%20Dev5,%20177.pdf)

Hurst, F.J., Crouse, D.J. and Brown, K.B. (1972), Recovery of uranium from wet-process phosphoric acid. *Industrial & Engineering Chemistry Process Design and Development*, **11** (1), 122-128.

Full Text: [I\Ind Eng Che Pro Des Dev11, 122.pdf](I/Ind%20Eng%20Che%20Pro%20Des%20Dev11,%20122.pdf)

? Mavis, J.D. and Checkovich, A. (1975), Sea-water softening with lime-magnesium carbonate (LMC) process. *Industrial & Engineering Chemistry Process Design and Development*, **14** (3), 204-209.

Full Text: [1960-80\Ind Eng Che Pro Des Dev14, 204.pdf](1960-80/Ind%20Eng%20Che%20Pro%20Des%20Dev14,%20204.pdf)

Abstract: A pilot plant to remove 70% of the calcium from sea water using the lime-magnesium carbonate (LMC) process was tested and improved. The calcium-deficient LMC product water was used as feed to a distillation desalting plant which was operated scale-free at 335’F and above. LMC pretreatment is estimated to cost 5.1&/1000 gal of treated water for a plant sized to supply a 50 million gal/day desalting plant. The process may find use with desalting processes using feed water more saline than the oceans.

Notes: highly cited

? Hayden, J.G. and Oconnell, J.P. (1975), Generalized method for predicting 2nd virial-coefficients. *Industrial & Engineering Chemistry Process Design and Development*, **14** (3), 209-216.

Full Text: [1960-80\Ind Eng Che Pro Des Dev14, 209.pdf](1960-80/Ind%20Eng%20Che%20Pro%20Des%20Dev14,%20209.pdf)

Abstract: Expressions for predicting pure-component and cross second virial coefficients for simple and complex systems have been developed from the bound-pair formalism of Stogryn and Hirschfelder. For pure components, the generalized correlation requires the critical temperature and pressure, Thompson’s mean radius of gyration or the parachor, dipole moment, and, if appropriate, a parameter to describe chemical association which depends only in the type of group (hydroxyl, amine, ester, carboxylic acid, etc.). Mixing rules have been developed for predicting cross coefficients and solvation effects can be accounted for in a similar manner to association. Agreement with experimental data on 39 nonpolar and 102 polar and associating compounds, 119 mixed nonpolar systems, and 73 mixed systems involving polar compounds, is comparable to or better than that of several other correlations including those which require data to obtain parameters. The method should be most accurate for systems of complex molecules where no data are available.

Alexander, F., Poots, V.J.P. and McKay, G. (1978), Adsorption kinetics and diffusional mass transfer processes during color removal from effluent using silica. *Industrial & Engineering Chemistry Process Design and Development*, **17** (4), 406-410.

Full Text: [I\Ind Eng Che Pro Des Dev17, 406.pdf](I/Ind%20Eng%20Che%20Pro%20Des%20Dev17,%20406.pdf)

McKay, G. and McLain, H.D. (1980), Fluidization characteristics of cuboids. *Industrial & Engineering Chemistry Process Design and Development*, **19** (4), 712-715.

Full Text: [I\Ind Eng Che Pro Des Dev19, 712.pdf](I/Ind%20Eng%20Che%20Pro%20Des%20Dev19,%20712.pdf)

Liberti, L. and Passino, R. (1972), Simplified method for calculating cyclic exhaustion-regeneration operations in fixed-bed adsorbers. *Industrial & Engineering Chemistry Process Design and Development*, **21** (2), 197-203.

Full Text: [I\Ind Eng Che Pro Des Dev21, 197.pdf](I/Ind%20Eng%20Che%20Pro%20Des%20Dev21,%20197.pdf)

McKay, G. and Walters, J.H.R. (1984), Solution to homogeneous diffusion mass transport equation. *Industrial & Engineering Chemistry Process Design and Development*, **23** (1), 181-182.

Full Text: [I\Ind Eng Che Pro Des Dev23, 181.pdf](I/Ind%20Eng%20Che%20Pro%20Des%20Dev23,%20181.pdf)

McKay, G., Allen, S.J., McConvey, I.F. and Walters, J.H.R. (1984), External mass transfer and homogeneous solid-phase diffusion effects during the adsorption of dyestuffs. *Industrial & Engineering Chemistry Process Design and Development*, **23** (2), 221-226.

Full Text: [I\Ind Eng Che Pro Des Dev23, 221.pdf](I/Ind%20Eng%20Che%20Pro%20Des%20Dev23,%20221.pdf)

O’Brien, J.A. and Myers, A.L. (1985), Rapid calculations of multicomponent adsorption from pure isotherm dats. *Industrial & Engineering Chemistry Process Design and Development*, **24** (4), 1188-1191.

Full Text: [I\Ind Eng Che Pro Des Dev24, 1188.pdf](I/Ind%20Eng%20Che%20Pro%20Des%20Dev24,%201188.pdf)

# Title: Industrial & Engineering Chemistry Product Research and Development

Full Journal Title: [Industrial & Engineering Chemistry Product Research and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepra6)

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JCR Abbreviated Title: Ind Eng Chem Prod Res Develop

ISSN: 0196-4321

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chien, M.W., Pearson, I.M. and Nobe, K. (1975), Reduction and adsorption kinetics of nitric oxide on cobalt perovskite catalysts. *Industrial & Engineering Chemistry Product Research and Development*, **14** (2), 131-134.

Full Text: [1960-80\Ind Eng Che Pro Res Dev14, 131.pdf](1960-80/Ind%20Eng%20Che%20Pro%20Res%20Dev14,%20131.pdf)

Abstract: The catalytic activities of the perovskites, Lac003 and doped LaCoOs, for the reduction of NO with CO at 100-500°C under plug flow reactor conditions, have been investigated. Comparisons were made with other Co oxides. The order of catalytic activity after pretreatment with CO was found to be Co304 > Ce02-Co304 > La0,85Bao,~&o03 =;: CuCo2O4 > LaCoO3 = L ~ O . ~ ~ H ~ >~ .La~o.~85CCaO0.1O5C~oO 3> Lao.~&ro,l5CoO3. In all cases, the reaction rates were zero order in CO and fractional order in NO. The latter was converted principally to N2 between 380 and 500°C; at lower temperatures more N 2 0 was formed. The kinetics of the chemisorption of NO at low pressures on LaCoO3 and the Ba-doped material was studied from 21 to 400°C. Pretreatment of the adsorbents with CO increased the adsorption rates greatly.

? Bryan, W.L., Lund, E.D. and Wagner, C.J. (1977), Adsorption of flavor components from aqueous orange peel aroma solutions. *Industrial & Engineering Chemistry Product Research and Development*, **16** (3), 257-261.

Full Text: [1960-80\Ind Eng Che Pro Res Dev16, 257.pdf](1960-80/Ind%20Eng%20Che%20Pro%20Res%20Dev16,%20257.pdf)

Abstract: The usefulness of porous polymers and activated carbon as adsorbents for Concentration of aqueous solutions of orange peel aroma was evaluated. The adsorbents were saturated by batch processing, and their capacity to adsorb various aroma components was determined. Of the porous polymers, cross-linked polystyrene resin (Amberlite XAD-4) had the highest capacity, about 20% of the resin dry weight. Activated carbon, by comparison, adsorbed about 30%. Compounds with less than six carbons were adsorbed much less efficiently than those with higher molecular weights. Elution of the saturated adsorbents with 5bed volumes of ethanol removed all adsorbed material from the resins, but only 70% from carbon. Flavor of the resin eluate was similar to that of a highly concentrated orange peel oil. Amberlite XAD-4 appeared most suitable for fixed-bed applications for recovery of desirable flavor components from orange peel aroma solutions.

? Yang, T.C. and Zall, R.R. (1984), Absorption of metals by natural polymers generated from seafood processing wastes. *Industrial & Engineering Chemistry Product Research and Development*, **23** (1), 168-172.

Full Text: [1984\Ind Eng Che Pro Res Dev23, 168.pdf](1984/Ind%20Eng%20Che%20Pro%20Res%20Dev23,%20168.pdf)

Abstract: The binding of metals to naturally occurring polymers obtained from seafood processing wastes was investigated. Experimental resub show that chitin, chitosan, and scales from three species of fish such as porgy, flounder, and cod are potentlaily useful materials to remove metals from contaminated water. Such metals include copper, zinc, chromium, cadmium, and lead. Batch methods were used to study equilibrium Isotherms and adsorption kinetics. The experimental data of adsorption equilibrium from solutions of metals have been found to correlate weii with the threaparameter isotherm equation. The study of adsorption kinetics shows that the rates of adsorption of the metals toward the natural polymers are best interpreted in terms of intraparticle diffusion as a ratsiimiting step. Although the natural polymers mentioned are useful for treating waste water, it is advantageous to use the cross-linked form to counteract product solubilization in an acid environment.

? Bevia, F.R., Rico, D.P. and Gomis, A.F.M. (1984), Activated carbon from almond shells - chemical activation. 2. ZnCl2 activation temperature influence. *Industrial & Engineering Chemistry Product Research and Development*, **23** (2), 269-271.

Full Text: [1984\Ind Eng Che Pro Res Dev23, 269.pdf](1984/Ind%20Eng%20Che%20Pro%20Res%20Dev23,%20269.pdf)

Abstract: Activation temperature influence on adsorptive properties of activated carbons obtained from almond shells by chemical activation with ZnCl, is reported. A maximum in adsorption capacity is found at 500°C, a temperature lower than commercially used ones. The 77 K N, adsorption data correlate acceptably well with solution adsorption measurements.

# Title: Industrial & Engineering Chemistry Research

[Industrial & Engineering Chemistry Research](http://pubs.acs.org/journals/iecred/index.html)

[I&EC](http://pubs3.acs.org/acs/journals/toc.page?incoden=iechad) Industrial & Engineering Chemistry (1909-1970)

[I&EC Fundamentals](http://pubs3.acs.org/acs/journals/toc.page?incoden=iecfa7) (1962-1986)

[I&EC Process Design and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepdaw) (1962-1986)

[I&EC Product Research and Development](http://pubs3.acs.org/acs/journals/toc.page?incoden=iepra6) (1962-1986)

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[Guidelines for Authors](PDF-Ref/Guidelines-Ind%20Eng%20Che%20Res.pdf)

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Moon, H. and Tien, C. (1987), Further work on multicomponent adsorption equilibria calculations based on the Ideal Adsorbed Solution Theory. *Industrial & Engineering Chemistry Research*, **26** (10), 2042-2047.

Full Text: [I\Ind Eng Che Res26, 2042.pdf](I/Ind%20Eng%20Che%20Res26,%202042.pdf)

Abstract: It was found that the procedures developed previously for calculating multicomponent adsorption equilibria can be readily extended to the case where the pure component isotherm data are represented by the Langmuir expression with a first-order correction term. In contrast to the recent published work of O’Brien and Myers which considered some aspects of the same problem, the present method requires, for any N-component mixture, the solution of only one or two nonlinear algebraic equations instead of the *N* equations necessary with the O’Brien-Myers method. The saving in computation time becomes significant as the number (N) increases.

Goto, M., Smith, J.M. and McCoy, B.J. (1990), Kinetics and mass transfer for supercritical fluid extraction of wood. *Industrial & Engineering Chemistry Research*, **29** (2), 282-289.

Full Text: [I\Ind Eng Che Res29, 282.pdf](I/Ind%20Eng%20Che%20Res29,%20282.pdf)

Abstract: Rates of extraction of lignin from white fir sapwood with supercritical tert-butyl alcohol were measured dynamically in a continuous-flow system. The extraction rate increased with temperature and pressure but was independent of particle size and flow rate for our experimental conditions. A model is presented for the supercritical reaction-extraction process, accounting for the reaction of solid lignin in the particle, intraparticle diffusion, and external mass transfer of lignin derivatives. For the reaction in the particle, two parallel first-order reactions for the degradation of two lignin types satisfactorily represent the data. The kinetic parameters for the reaction were estimated from the model analysis. Model simulations supported the experimental results, which showed the extraction process was not affected by the mass transfer.

McKay, G. and Al-Duri, B. (1991), Multicomponent dye adsorption onto carbon using a solid diffusion mass transfer model. *Industrial & Engineering Chemistry Research*, **30** (2), 385-395.

Full Text: [I\Ind Eng Che Res30, 385.pdf](I/Ind%20Eng%20Che%20Res30,%20385.pdf)

Abstract: The adsorption of basic dyes onto activated carbon has been studied for single and multicomponent systems. Three single-component systems, one binary dye adsorption system, and one ternary dye adsorption system have been investigated. Equilibria and kinetic studies have been performed and the effects of varying initial dye concentration and carbon mass have been investigated during the kinetic experiments. Prediction of experimental equilibrium data has been performed by use of the ideal adsorbed solute theory, the extended Redlich-Peterson isotherm, and a modified extended Redlich-Peterson isotherm. The predictions from the modified extended Redlich-Peterson isotherm, incorporating an interaction factor, correlated experimental data well and also provided a reasonably simple format that could be incorporated into a kinetic model. The kinetic model developed for agitated batch adsorbers is based on the film solid diffusion model coupled with the modified extended Redlich-Peterson isotherm. Kinetic data for the binary and ternary systems are correlated with experimental data for up to 3 h over a wide range of dye concentrations and carbon masses.

Keywords: Binary-Liquid Mixtures, Multi-Solute Adsorption, 2 Dissolved Organics, Activated Carbon, Competitive Adsorption, Surface-Diffusion, Aqueous-Solutions, Ideal Solutions, Equilibria, Isotherm

Urano, K. and Tachikawa, H. (1991), Process development for removal and recovery of phosphorus from wastewater by a new adsorbent. 1. Preparation method and adsorption capability of a new adsorbent. *Industrial & Engineering Chemistry Research*, **30** (8), 1893-1896.

Full Text: [I\Ind Eng Che Res30, 1893.pdf](I/Ind%20Eng%20Che%20Res30,%201893.pdf)

Abstract: Alophene and activated alumina can adsorb phosphate ion, and their adsorption capacities have been increased by adding aluminum sulfate or iron sulfate, respectively, to form complex salts on their surfaces. In particular, activated alumina combined with 2.0×10-4 mol of aluminum sulfate/g has a large adsorption capacity and good characteristics. This new adsorbent adsorbs various inorganic phosphorus species in a pH range from 4 to 7. Coexistence of various inorganic and organic anions does not disturb the adsorption of phosphate ion, but coexistence nitrate and sulfate ions disturb the adsorption slightly. Phosphate is adsorbed in the early stage by the reaction with the complex salt Al4(OH)6(SO4)3, which was formed by the reaction of aluminum sulfate and aluminum hydroxide on the surface of activated alumina, and in the delay time by the reaction with the aluminum hydroxide.

Urano, K. and Tachikawa, H. (1991), Process development for removal and recovery of phosphorus from wastewater by a new adsorbent. 2. Adsorption rates and breakthrough curves. *Industrial & Engineering Chemistry Research*, **30** (8), 1897-1899.

Full Text: [I\Ind Eng Che Res30, 1897.pdf](I/Ind%20Eng%20Che%20Res30,%201897.pdf)

Abstract: Adsorption rates of biphosphate ion and tripolyphosphate ion on the newly developed adsorbent were analyzed by batchwise and flow adsorption tests. The adsorption rates were controlled by the intraparticle diffusion rates, and the diffusion coefficients were changed with the concentration of the ions in solutions. The breakthrough curves could be predicted from the Freundlich type adsorption isotherms and the intraparticle diffusion coefficients obtained by batchwise tests for the influent concentration. Therefore, the breakthrough times, namely, the regeneration cycles, could be predicted for various conditions, and the feasibility of the process using the new adsorbent was estimated for removing the recovering phosphorus from wastewater.

Kobayashi, S., Mizuno, K., Kushiyama, S., Aizawa, R., Koinuma, Y. and Ohuchi, H. (1991), Adsorption behavior of chlorofluorocarbons in zeolitic pores. 1. Adsorption isotherm. *Industrial & Engineering Chemistry Research*, **30** (10), 2340-2344.

Full Text: [I\Ind Eng Che Res30, 2340.pdf](I/Ind%20Eng%20Che%20Res30,%202340.pdf)

Abstract: The adsorption of CFC-12 on NaY, KY, and CsY zeolites was carried out by use of a conventional static adsorption apparatus, and the data were discussed in terms of the best fit adsorption isotherms. An inflection point was observed on each isotherm at the adsorption amount of ca. 10 molecules per unit cell. The heat of adsorption calculated by Clausius-Clapeyron equation between 0 and 15°C on NaY zeolite increased with increasing adsorption amount of CFC-12. These data were explained in terms of the nonlocalized equation proposed by Hill.

? Ackley, M.W. and Yang, R.T. (1991), Adsorption characteristics of high-exchange clinoptilolites. *Industrial & Engineering Chemistry Research*, **30** (12), 2523-2530.

Full Text: [1991\Ind Eng Che Res30, 2523.pdf](1991/Ind%20Eng%20Che%20Res30,%202523.pdf)

Abstract: Clinoptilolite, the most abundant natural zeolite, has been modified by ion exchange to fully exchanged forms of the monovalent cations K+, Na+, and H+ and highly exchanged forms of the bivalent cations Ca2+ (89%) and Mg2+ (72%). The Dubinin-Astakhov volume filling model was applied to the supercritical isotherm data to predict pore volume at the normal boiling temperatures of N2 and CH4-temperatures too low for practical isotherm measurement due to the slow diffusion of these gases. Adsorption isotherms and energetic heterogeneity have been discussed in terms of the various cations and their locations in the clinoptilolite channels. Adsorption characteristics have been greatly altered through cation manipulation to produce a range of CH4:N2 selectivity ratios exceeding 1 order of magnitude. In view of the difficulty of the CH4/N2 separation, these results suggest excellent potential for tailoring clinoptilolite for separation of other specific gas mixtures.

Keywords: Separation

Urano, K. and Tachikawa, H. (1992), Process development for removal and recovery of phosphorus from wastewater by a new adsorbent. 3. Desorption of phosphate and regeneration of adsorbent. *Industrial & Engineering Chemistry Research*, **31** (6), 1510-1513.

Full Text: [I\Ind Eng Che Res31, 1510.pdf](I/Ind%20Eng%20Che%20Res31,%201510.pdf)

Abstract: A superior adsorbent for removing inorganic phosphorus from wastewater was developed in previous studies. Feasible methods for desorption of phosphate and regeneration of the spent adsorbent were investigated in this study. Sodium hydroxide solution of ca. 1.0 mol/L was suitable for the desorption. Over 85% of phosphate was desorbed easily by circulating the sodium hydroxide solution in the column, and a concentrated phosphate solution was obtained. The adsorbent was regenerated sufficiently by circulating the mixed solution of aluminum sulfate and sulfuric acid in the column after the desorption. The regenerated adsorbent adsorbed over 80% of the phosphate from virgin adsorbent for 20 reuse cycles. Further, the reaction mechanisms of the desorption and the regeneration were discussed.

Urano, K., Tachikawa, H. and Kitajima, M. (1992), Process development for removal and recovery of phosphorus from wastewater by a new adsorbent. 4. Recovery of phosphate and aluminum from desorbing solution. *Industrial & Engineering Chemistry Research*, **31** (6), 1513-1515.

Full Text: [I\Ind Eng Che Res30, 1513.pdf](I/Ind%20Eng%20Che%20Res30,%201513.pdf)

Abstract: Processes were developed for recovering phosphate and reusing aluminum from alkaline solutions that have been used for desorbing phosphate from the spent adsorbent. The phosphate was completely recovered as the precipitate of calcium hydroxyphosphate, which can be used as fertilizer, by adding calcium chloride. The aluminum was also completely recovered as the dense precipitate of aluminum hydroxide, which can be reused for regenerating the adsorbent, by slowly adding sulfuric acid in the pH range from 11 to 10. A total system for removing and recovering phosphorus from wastewater by using the new adsorbent was established, and only sodium sulfate and sodium chloride were discharged from this process.

? Payne, G.F. and Maity, N. (1992), Solute adsorption from water onto a modified sorbent in which the hydrogen binding-site is protected from water - Thermodynamics and separations. *Industrial & Engineering Chemistry Research*, **31** (8), 2024-2033.

Full Text: [1992\Ind Eng Che Res31, 2024.pdf](1992/Ind%20Eng%20Che%20Res31,%202024.pdf)

Abstract: The goal of this work was to exploit the specificity of hydrogen bonding for the selective adsorption of solutes from aqueous solution. For this study a porous polycarboxylic ester sorbent was “modified” such that the pores were filled with a nonpolar solvent in order to protect the hydrogen bonding adsorption sites from the water solvent. For solutes to adsorb onto this modified sorbent, they must first partition into the nonpolar pore phase and then adsorb onto the hydrogen bonding sorption site. Using p-cresol-phenylpropanol as a model solute mixture, we observed improved separation factors due to the hydrogen bonding characteristics of the modified sorbent. Also, adsorption equilibrium for this modified sorbent was readily predicted using single solute data and simple thermodynamic relations.

Keywords: Adsorption, Adsorption Equilibrium, Energy, Equilibrium, Heat-Capacity, Hydrogen, Hydrogen Bonding, Model, Modified, Molecular Recognition, Partition, Porous, Selective, Selective Adsorption, Separation, Sites, Sorption, Specificity, Temperature-Dependence, Thermodynamic, Water

Juang, R.S. and Su, J.Y. (1992), Sorption of copper and zinc from aqueous sulfate solutions with bis(2-ethylhexyl)phosphoric acid-impregnated macroporous resin. *Industrial & Engineering Chemistry Research*, **31** (12), 2774-2779.

Full Text: [I\Ind Eng Che Res31, 2774.pdf](I/Ind%20Eng%20Che%20Res31,%202774.pdf)

Abstract: Equilibrium studies were thermodynamically made for the sorption of divalent copper and zinc ions from aqueous sulfate solutions with bis(2-ethylhexyl)phosphoric acid-impregnated hydrophobic macroporous resins, by employing either Bromley or the simplified Pitzer equations to estimate the stoichiometric activity coefficient of various species in the aqueous phase. The mechanisms of copper and zinc sorption were found to be the same as those of the solvent extraction. The operating lifetime of the impregnated resin and the influence of preparation method on the impregnation capacity, as well as the effects of aqueous ionic strength and temperature on the sorption equilibrium, were also examined.

Keywords: Perchlorate Solutions, Solvent-Extraction, Phosphoric-Acid, Separation, Equilibria, Metals, Media

Juang, R.S. and Su, J.Y. (1992), Separation of zinc and copper from aqueous sulfate solutions using bis(2-ethylhexyl)phosphoric acid-impregnated macroporous resin. *Industrial & Engineering Chemistry Research*, **31** (12), 2779-2783.

Full Text: [I\Ind Eng Che Res31, 2779.pdf](I/Ind%20Eng%20Che%20Res31,%202779.pdf)

Abstract: The separation of zinc and copper from aqueous sulfate solutions using bis(2-ethylhexyl)phosphoric acid-impregnated hydrophobic macroporous resin has been examined in either batch or continuous operation. This resin could be successfully impregnated by the modified dry method. It was found that the impregnated resin gives high selective separation of zinc to copper, and they can be satisfactorily separated from 0.5 mol/dm3 (Na, H)SO4 aqueous solution.

Keywords: Extraction, Metals

Rorrer, G.L., Hsien, T.Y. and Way, J.D. (1993), Synthesis of porous-magnetic chitosan beads for removal of cadmium ions from waste-water. *Industrial & Engineering Chemistry Research*, **32** (9), 2170-2178.

Full Text: [I\Ind Eng Che Res32, 2170.pdf](I/Ind%20Eng%20Che%20Res32,%202170.pdf)

Abstract: Chitosan is a glucosamine bipolymer capable of adsorbing transition-metal ions from aqueous solution. Highly porous chitosan beads were prepared by dropwise addition of an acidic chitosan solution into a sodium hydroxide solution precipitation bath. The gelled chitosan beads were cross-linked with glutaraldehyde and then freeze dried. Beads of 1- and 3-mm diameter were prepared. Beads of 1-mm diameter possessed surface areas exceeding 150 m2/g and mean pore sizes of 560 angstrom and were insoluble in acid media at pH 2. Well-mixed batch adsorption experiments revealed that both metal and hydronium ions compete for available adsorption sites by a chelation mechanism. Adsorption isotherms at 25-degrees-C and pH 6.5 over the concentration range 1-1690 mg Cd2+/L possessed a stepped shape and maximum adsorption capacities for the 1- and 3-mm beads were 518 and 188 mg of Cd/g of bead, respectively. The stepped shape of the isotherm was explained by a pore-blockage mechanism.

Keywords: Adsorption

Periasamy, K. and Namasivayam, C. (1994), Process development for removal and recovery of cadmium from wastewater by a low-cost adsorbent: Adsorption rates and equilibrium studies. *Industrial & Engineering Chemistry Research*, **33** (2), 317-320.

Full Text: [I\Ind Eng Che Res33, 317.pdf](I/Ind%20Eng%20Che%20Res33,%20317.pdf)

Abstract: Activated carbon prepared from peanut hulls (PHC), an agricultural waste by-product, has been used for the adsorption of Cd(II) from synthetic wastewater. The adsorption data fit better with the Freundlich adsorption isotherm. The applicability of the Lagergren kinetic model has also been investigated. An almost quantitative removal of 20 mg/L Cd(II) by 0.7 g of PHC/L of aqueous solution was observed in the pH range 3.5-9.5. A comparative study with a commercial granular activated carbon (CAC) showed that the adsorption capacity Kf of PHC was 31 times larger than that of CAC.

Keywords: Zinc

Peng, F.F. and Di, P.K. (1994), Removal of arsenic from aqueous solution by adsorbing colloid flotation. *Industrial & Engineering Chemistry Research*, **33** (4), 922-928.

Full Text: [I\Ind Eng Che Res33, 922.pdf](I/Ind%20Eng%20Che%20Res33,%20922.pdf)

Abstract: Adsorbing colloid flotation (ACF) with ferric hydroxide as the coprecipitant, anionic surfactant sodium dodecyl sulfate (SDS) as the collector, and nitrogen microbubbles has been shown to be effective in removing arsenic from low concentration of arsenic aqueous solution (approximately 10 mg/dM3). Experiments were conducted to assess the effects of pH, dosages of SDS and Fe(III), gas flow rate, foreign anions including NO3-, SO42-, and PO43-, and Al(III) addition on the efficiency of the arsenic removal by ACF. When pH is at the range of 4-5, 99.5 % arsenic removal efficiency can be achieved. The optimal operating conditions are 35 ppm SDS, 80 ppm Fe(III), 40 cm3/min gas flow rate, 500 rpm rotary speed of stirrer, and 5 min ferric hydroxide floc formation time. The analysis results indicate that foreign anions SO42-and PO43-have an inhibiting effect on the removal of arsenic, while AI(III) additions can compensate for the effect. An actual mine wastewater sample containing 10.4 ppm arsenic(V), 0.76 ppm chromium(VI), and 0.55 ppm lead was tested by adsorbing colloid flotation at the optimal operation conditions. The residual arsenic, chromium, and lead are 0.07, 0.06, and 0.04 ppm, respectively. The interaction mechanisms between Fe(OH)3-bearing arsenic floc and SDS were analyzed and interpreted by means of zeta-potential, infrared spectra analysis, and molecular orbital theory. The adsorption of SDS can occur physically and chemically on Fe(OH)3 at the pH range of 4-5.

Keywords: Water, Adsorption

Cavalcante, Jr., C.L. and Ruthven, D.M. (1995), Adsorption of branched and cyclic paraffins in silicalite. 1. Equilibrium. *Industrial & Engineering Chemistry Research*, **34** (1), 177-184.

Full Text: [I\Ind Eng Che Res34, 177.pdf](I/Ind%20Eng%20Che%20Res34,%20177.pdf)

Abstract: Gravimetric equilibrium isotherms are reported for adsorption of branched and cyclic C-6 paraffins on silicalite. In addition to the isotherms, Henry constants and heats of adsorption are reported for 2-methylpentane, 3-methylpentane,2,2-dimethylbutane,2,3-dimethylbutane, methylcyclopentane, and cylohexane. Adsorption capacities are in the range of 4-7 wt %. All isotherms are of type 1 in Brunauer’s classification. Adsorption saturation limits, estimated from the experimental results by Langmuir regression, show a deceasing trend with increasing temperature. Adsorption equilibrium constants follow the trend double-branched < single-branched < cyclic paraffins. Heats of adsorption for the single-branched paraffins increase slightly with loading, but for the double-branched and cyclic paraffins the variation of heat of adsorption with coverage is more pronounced.

Keywords: Sorption, Zeolites, Diffusion, Hydrocarbons, Zsm-5, Catalysis, Alkanes, Butane

Cavalcante, Jr., C.L. and Ruthven, D.M. (1995), Adsorption of branched and cyclic paraffins in silicalite. 2. Kinetics. *Industrial & Engineering Chemistry Research*, **34** (1), 185-191.

Full Text: [I\Ind Eng Che Res34, 185.pdf](I/Ind%20Eng%20Che%20Res34,%20185.pdf)

Abstract: Intracrystalline diffusivities in silicalite have been measured by the gravimetric sorption uptake method for several branched and cyclic C6 paraffins (2-methylpentane,3-methylpentane,2,2-dimethylbutane,2,3-dimethylbutane, methylcyclopentane and cyclohexane). The zero-length column (ZLC) method was also used to check and validate some of the results. Branching and cyclization of saturated hydrocarbon structures lead to significant changes in critical molecular diameter and hence to differences in kinetic behavior. The following general trend was observed for the diffusivities: linear > single-branched > double (ternary C)-branched > cyclic paraffins > double (quaternary C)-branched. Steric hindrance was most pronounced for compounds with a quaternary carbon atom, such as 2,2-dimethylbutane. The kinetic data conform well to a one-dimensional (slab) diffusion model, reflecting the anisotropic diffusion behavior characteristic of the silicalite/ZSM-5 structure.

Namasivayam, C. and Ranganathan, K. (1995), Removal of lead(II) by adsorption onto waste iron(III) chromium(III) hydroxide from aqueous-solution and radiator manufacturing-industry waste-water. *Industrial & Engineering Chemistry Research*, **34** (3), 869-873.

Full Text: [I\Ind Eng Che Res34, 869.pdf](I/Ind%20Eng%20Che%20Res34,%20869.pdf)

Abstract: “Waste” iron(III)/chromium(III) hydroxide has been used as an adsorbent for the effective removal of Pb(II) from aqueous solution. The parameters-studied include agitation time, Pb(II) concentration, temperature, and pH. The percent adsorption of Pb(II) increased with a decrease in concentration of Pb(II) and an increase in temperature and pH. Quantitative removal of Pb(II) was observed at pH > 7.0. The equilibrium data fit well with the Langmuir isotherm. The adsorption capacity (Q0) calculated from Langmuir isotherm was 126.55 mg/g at an initial pH of 3.5 at 30 degrees C. Desorption of Pb(II) from Pb loaded adsorbent was 56% at pH 4.0. Application of the adsorbent was successfully demonstrated using the radiator manufacturing industry wastewater.

Keywords: Heavy-Metal Cations, Water, Clay, Cu, Pb, Cd

Hwang, Y.L. (1995), Wave propagation in mass transfer processes: From chromatography to distillation. *Industrial & Engineering Chemistry Research*, **34** (8), 2849-2864.

Full Text: [I\Ind Eng Che Res34, 2849.pdf](I/Ind%20Eng%20Che%20Res34,%202849.pdf)

Abstract: This article reviews the advancement of the dynamic theories based on wave propagation phenomena for two major classes of separation processes: fixed-bed sorption processes such as chromatography and countercurrent mass-transfer processes such as distillation. Aiming at providing a common perspective, this article begins with a brief review of the fundamental physics of wave propagation in these processes with notations common to both classes. Then, for single-variance systems (with one independent component), it reviews the well-developed theories for fixed beds and, as the main focus, the recent efforts to adapt these theories to countercurrent processes, in particular, distillation. The last part reviews the equilibrium theories of multicomponent chromatography with emphasis on the coherent wave theory originated by Helfferich and briefly covers the most recent attempts to apply this theory to multicomponent countercurrent processes. The review is summarized with prospects of applying the wave propagation theory to distillation control and design.

Keywords: Continuous Countercurrent Processes, Linear Unsteady Processes, Fixed-Bed Sorption, Equilibrium-Theory, Asymmetric Dynamics, Ion-Exchange, Shock Layer, Multicomponent Chromatography, Numerical-Methods, Unifying Concepts

Polcaro, A.M., Palmas, S. and Dernini, S. (1995), Kinetics of cobalt cementation on zinc powder. *Industrial & Engineering Chemistry Research*, **34** (9), 3090-3095.

Full Text: [I\Ind Eng Che Res34, 3090.pdf](I/Ind%20Eng%20Che%20Res34,%203090.pdf)

Abstract: The kinetics of cobalt cementation on Zn powder from zinc sulfate concentrated solutions in the presence of copper and antimony ions was investigated in stirred tank reactors. The composition of the solutions was in the range usually utilized in industrial zinc electrowinning plants. The results showed that the reaction occurs by means of the formation of crystallization nuclei of noble metals on the zinc powder, followed by the cementation of cobalt ions on these newly-formed. formed nuclei. Mass transfer to the reaction surface is shown to be the controlling step in copper and antimony reduction, and an equation correlating mass transfer coefficients has been determined. A kinetic equation, which interprets the influence of stirring speed and solution composition on cobalt cementation, has also been proposed.

Keywords: Mass-Transfer

? Bertucco, A., Barolo, M. and Soave, G. (1995), Estimation of chemical-equilibria in high-pressure gaseous systems by a modified Redlich-Kwong-Soave equation of state. *Industrial & Engineering Chemistry Research*, **34** (9), 3159-3165.

Full Text: [1995\Ind Eng Che Res34, 3159.pdf](1995/Ind%20Eng%20Che%20Res34,%203159.pdf)

Abstract: This paper considers the calculation of homogeneous chemical equilibria in high-pressure gaseous systems. A modified Redlich-Kwong-Soave equation of state, which represents satisfactorily single-phase fugacity coefficients of pure fluids, is extended to mixtures. Mixture parameters are derived from the corresponding pure-component ones by means of the classical mixing rules. Equilibrium compositions are predicted for the ammonia synthesis, the water-gas shift reaction, and the methanol synthesis. In the case of ammonia, extensive experimental data between 10 and 80 MPa are reproduced with good accuracy; when the model is extrapolated up to 350 MPa, still satisfactory results can be calculated. For the water-gas shift reaction, acceptable results are obtained with limited experimental data sets. As to methanol synthesis, an interesting behavior is evidenced when operating near methanol’s critical temperature. The proposed model is shown to be superior to both the Lewis-Randall approach and the original Redlich-Kwong-Soave equation of state and can be used to predict equilibrium conversion of gas-phase reactions under high pressures.

Keywords: Methanol Synthesis, Conversions

? Bertucco, A., Barolo, M. and Soave, G. (1995), Estimation of chemical-equilibria in high-pressure gaseous systems by a modified Redlich-Kwong-Soave equation of state (vol 34, pg 3159, 1995). *Industrial & Engineering Chemistry Research*, **34** (12), 4583-4584.

Full Text: 1995\Ind Eng Che Res34, 4583.pdf

? Lin, S.H. and Wu, C.L. (1996), Ammonia removal from aqueous solution by ion exchange. *Industrial & Engineering Chemistry Research*, **35** (2), 553-558.

Full Text: [1996\Ind Eng Che Res35, 553.pdf](1996/Ind%20Eng%20Che%20Res35,%20553.pdf)

Abstract: The ammonia removal from aqueous solution by a synthetic ion-exchange resin was invesitigated. Several operating variables of the ion-exchange system, such as the pH, initial ammonia concentration, and temperature, on the exchange capacity were explored. Various ion-exchange isotherms including those of Langmuir, Freundlich, modified Langmuir, and Jossens et al. were employed to represent the experimental isotherm data. A mass-transfer model based on the squared driving force principle was adopted and found to fit well the measured mass-transfer data and the experimental mass-transfer coefficient determined.

Keywords: Ozonation

Seki, H. and Suzuki, A. (1996), Adsorption of lead ions on composite biopolymer adsorbent. *Industrial & Engineering Chemistry Research*, **35** (4), 1378-1382.

Full Text: [I\Ind Eng Che Res35, 1378.pdf](I/Ind%20Eng%20Che%20Res35,%201378.pdf)

Abstract: A fundamental study about the application of biopolymers to the recovery of lead from dilute solution was carried out. A membranous composite biopolymer adsorbent containing two kind of biopolymers, alginic acid (AA) and humic acid (HA), was prepared. HA, which has high solubility in water, was almost completely immobilized in the adsorbent by a combination of calcium alginate gel and activated carbon powder. A general model for complexation between divalent metal ions and acidic sites on biopolymers was applied to explain the adsorption mechanism of lead on the adsorbent (HA-M). The results showed that the complexation constants and the complexation capacities of lead-AA and lead-HA systems were scarcely influenced by immobilization.

Keywords: Dissolved Copper, Humic-Acid, Europium(III), Alginate

Mittal, A.K. and Venkobachar, C. (1996), Uptake of cationic dyes by sulfonated coal: Sorption mechanism. *Industrial & Engineering Chemistry Research*, **35** (4), 1472-1474.

Full Text: [I\Ind Eng Che Res35, 1472.pdf](I/Ind%20Eng%20Che%20Res35,%201472.pdf)

Abstract: Mechanistic aspects of sorption of Rhodamine B and Methylene Blue by sulfonated coal have been investigated. The coal surface before and after sulfonation has been characterized with the help of cation-exchange capacity measurements and infrared (IR) spectroscopy. These studies indicate that sulfuric acid treatment not only incorporates a SO3H group on the coal surface but also oxidizes both aliphatic and aromatic fractions. The IR spectroscopy has been extensively applied to locate the active sites on the surface of the sorbent and the participating functional groups of the dye molecule. Graphical models of the sorbate-sorbent interaction have been proposed. These models are applied to explain the variation in the uptake potential of these dyes by sulfonated coal.

Bradford, M.C.J. and Vannice, M.A. (1996), Estimation of CO heats of adsorption on metalsurfaces from vibrational spectra. *Industrial & Engineering Chemistry Research*, **35** (9), 3171-3178.

Full Text: [I\Ind Eng Che Res35, 3171.pdf](I/Ind%20Eng%20Che%20Res35,%203171.pdf)

Abstract: An empirical relationship between the bond dissociation energy at 0 K, D0, and the force constant, k, was obtained for a series of heteronuclear carbon-containing and homonuclear metal diatomic species, suggesting that the potential wells for these species have similar curvature. This D0-k relationship was then used as part of a simple mathematical formalism to calculate the metal-carbon and carbon-oxygen bond strengths of CO adsorbed on metalsurfaces directly from experimental values of A (1) vibrational modes. By assuming a rigid metal lattice, whose bonds remain unperturbed as a result of CO adsorption, it was thus possible to directly calculate the heat of adsorption of CO, Qad, from the calculated bond strengths. Although calculated values of Q ad for CO on 3d and 4d transition metals were in reasonable agreement with experimental values reported in the literature, agreement was not satisfactory for the 5d transition metals. Further analysis indicates that the discrepancy is likely due to the assumption of a rigid metal lattice and that CO adsorption on some metalsurfaces, particularly those of platinum and iridium, induces some bond relaxation on the metalsurface. It is thus suggested that metalsurfaces which have both a large curvature of the cohesive function and adsorb CO primarily via 5 sigma donation to the surface, i.e., little metal back-bonding, are strongly susceptible to bond relaxation and possible reconstruction.

Yan, T.Y. (1996), Mercury removal from oil by reactive adsorption. *Industrial & Engineering Chemistry Research*, **35** (10), 3697-3701.

Full Text: [I\Ind Eng Che Res35, 3697.pdf](I/Ind%20Eng%20Che%20Res35,%203697.pdf)

Abstract: Mercury in heavy condensate or oil causes marketing, processing and environmental concerns. We have developed an effective process to remove mercury from oil. Laboratory tests show that the process is capable of removing up to 99% of mercury. The process is based on high-temperature chemisorption for selective adsorption of mercury and uses a special CuS/C adsorbent which is effective for removal of most types of mercury compounds. The process is simple and lends itself to integration into the existing LNG plant systems. In the process, the condensate from the stabilizer at 400-500℉ and 220 psi is directly passed over the adsorbent at about 10 liquid hourly space velocity (LHSV) for mercury removal before normal heat exchange and storage. At the contemplated operating conditions, the adsorbent can last more than 1 year. Extensive laboratory tests have been conducted to verify the technical feasibility of the process. The adsorbent has been produced using a commercial process in a commercial unit and evaluated in the laboratory thoroughly.

Sun, G. and Xu, X.J. (1997), Sunflower stalks as adsorbents for color removal from textile wastewater. *Industrial & Engineering Chemistry Research*, **36** (3), 808-812.

Full Text: [I\Ind Eng Che Res36, 808.pdf](I/Ind%20Eng%20Che%20Res36,%20808.pdf)

Abstract: Sunflower stalks as adsorbents for two basic dyes (Methylene Blue and Basic Red 9) and two direct dyes (Congo Red and Direct Blue 71) in aqueous solutions were studied with equilibrium isotherms and kinetic adsorptions. The maximum adsorptions of two basic dyes on sunflower stalks are very high, i.e., 205 and 317 mg/g for Methylene Blue and Basic Red 9, respectively. The two direct dyes have relatively lower adsorption on sunflower stalks. The adsorptive behaviors of sunflower stalk components are different. The pith, which is the soft and porous material in the center of stalks, has twice the adsorptive capacity of the skin. Particle sizes of sunflower stalks also affect the adsorption of dyes. The adsorption rates of two basic dyestuffs are much higher than that of the direct dyes. Within 30 min about 80% basic dyes were removed from the solutions.

Keywords: Adsorption, Effluents, Water

Juang, R.S. and Chen, M.L. (1997), Application of the Elovich equation to the kinetics of metal sorption with solvent-impregnated resins. *Industrial & Engineering Chemistry Research*, **36** (3), 813-820.

Full Text: [I\Ind Eng Che Res36, 813.pdf](I/Ind%20Eng%20Che%20Res36,%20813.pdf)

Abstract: The sorption rates of metal ions including Fe(III), Co(II), Ni(II), Cu(II), and Zn(II) from sulfate solutions with macroporous resins containing bis(2-ethylhexyl)phosphoric acid (D2EHPA) were measured and compared in a batch stirred vessel. Experiments were carried out as a function of the pH and metal concentration in the aqueous phase, D2EHPA concentration in the resin phase, and temperature. The effect of impregnation methods of D2EHPA on the sorption rate was also investigated. It was shown that all sorption processes could be well described by the Elovich equation. For the examined systems there were similar trends of sorption rates with respect to the concentrations of metal ions and D2EHPA. With respect to the pH, however, three different trends were obtained depending on the magnitude of sorption rate. The apparent activation energy was obtained and used to discuss the rate-controlling mechanism.

Keywords: Particle Diffusion Kinetics, Macromolecular Resin, Divalent Metals, Di-(2, 4, 4-Trimethylpentyl)Phosphinic Acid, Distribution Equilibria, Organophosphorus Acids, Macroporous Resins, Phosphoric-Acid, Ion-Exchange, Extraction

Sánchez, N., Martínez, M. and Aracil, J. (1997), Selective esterification of glycerine to 1-glycerol monooleate. 1. Kinetic modeling. *Industrial & Engineering Chemistry Research*, **36** (5), 1524-1528.

Full Text: [I\Ind Eng Che Res36, 1524.pdf](I/Ind%20Eng%20Che%20Res36,%201524.pdf)

Abstract: Conversion of oleic acid has been monitored with time for the reaction with glycerine to yield selectively 1-glycerol monooleate, using a slightly basic ultrastable Y-zeolite as catalyst. Various experiments at different temperatures, catalyst concentrations, and glycerine/oleic acid molar ratios have been carried out. Results show that no significant amount of triglyceride appears in the reaction mixture during the esterification process. An approximate pseudo-second-order kinetic model has been proposed and tested, showing that it reproduces the experimental results with a maximum 10% error.

Keywords: Acid

Chanda, M. and Rempel, G.L. (1997), Chromium(III) removal by epoxy-cross-linked poly(ethylenimine) used as gel-coat on silica. 1. Sorption characteristics. *Industrial & Engineering Chemistry Research*, **36** (6), 2184-2189.

Full Text: [I\Ind Eng Che Res36, 2184.pdf](I/Ind%20Eng%20Che%20Res36,%202184.pdf)

Abstract: Poly(ethylenimine) has been gel-coated on high surface area silica and insolubilized by crosslinking with a low molecular weight diepoxide (epoxy equivalent 180 g). The resulting granular sorbent shows several times higher sorption than the commercial chelating resin Chelex-100 in chromium(III) sorption from sulfate solution, the respective saturation capacities being 3.2 and 0.95 mmol of Cr(III)/g of dry resin. The sorption of Cr(III) from its chloride solution is less on both the resins, the saturation levels being 0.62 and 0.78 mmol/g of dry resin, respectively. The sorption of Cr(III)/Cl-on both these sorbents is, however, enhanced significantly by NaCl, the effect being more marked for the gel-coated resin, which shows more than 100% increase in Cr(III) sorption from 0.5 M NaCl solution containing Cr(III) in low concentrations. Both the gel-coated PEI and Chelex-100 show fast kinetics, the t1/2 values in Cr(III) sorption being 45 and 30 s, respectively. However, the Cr(III) sorbed on Chelex-100 cannot be stripped at ambient temperature even with concentrated HCl while, in contrast, the gel-coated PEI is stripped very easily, the tilt value in 4 N HCl being only 25 s.

Keywords: Fast Kinetics, Recovery

Chanda, M. and Rempel, G.L. (1997), Chromium(III) removal by epoxy-cross-linked poly(ethylenimine) used as gel-coat on silica. 2. A new kinetic model. *Industrial & Engineering Chemistry Research*, **36** (6), 2190-2196.

Full Text: [I\Ind Eng Che Res36, 2109.pdf](I/Ind%20Eng%20Che%20Res36,%202109.pdf)

Abstract: Regenerable “gel-coat” chelating resins with fast sorption kinetics and sorption selectivity have application potential for removal of trace metal ions even in large-scale operations. Poly(ethylenimine) has been gel-coated on high surface area silica and insolubilized by cross-linking with a low molecular weight diepoxide (epoxy equivalent 180 g). The sorption of Cr(III)/SO42-on this gel-coated sorbent under vigorous agitation has characteristics of particle diffusion control (pdc) with homogeneous (gel) diffusion in the resin phase. A new mathematical model is proposed for such sorption in gel-coat resin and solved by applying operator-theoretic methods. The analytical solution so obtained shows good agreement with experimental sorption kinetics for relatively low levels of resin conversion.

Keywords: Recovery

Notes: highly cited

Gupta, V.K., Srivastava, S.K. and Mohan, D. (1997), Equilibrium uptake, sorption dynamics, process optimization, and column operations for the removal and recovery of Malachite Green from wastewater using activated carbon and activated slag. *Industrial & Engineering Chemistry Research*, **36** (6), 2207-2218.

Full Text: [I\Ind Eng Che Res36, 2207.pdf](I/Ind%20Eng%20Che%20Res36,%202207.pdf)

Abstract: The waste slurry generated in fertilizer plants and slag (blast furnace waste) have been converted into low-cost adsorbents, activated carbon and activated slag, respectively, and these are utilized for the removal of Malachite Green (a basic dye) from wastewater. In the batch experiments, parameters studied include the effect of pH, sorbent dosage, adsorbate concentration, temperature, and contact time. Kinetic studies have been performed to have an idea of the mechanistic aspects and to obtain the thermodynamic parameters of the process. The uptake of the dye is greater on carbonaceous material than on activated slag. Sorption data have been correlated with both Langmuir and Freundlich adsorption models. The presence of anionic surfactants does not affect the uptake of dye significantly. The mass transfer kinetic approach has been applied for the determination of various parameters necessary for the designing of fixed-bed contactors. Chemical regeneration has been achieved with acetone in order to recover the loaded dye and restore the column to its original capacity without dismantling the same.

Keywords: Toxic Metal-Ions, Aqueous-Solutions, Chrome Dye, Basic Dye, Adsorption, Adsorbent, Cadmium, Coal, Diffusion, Effluents

? Donlagic, J. and Levec, J. (1997), Oxidation of an azo dye in subcritical aqueous solutions. *Industrial & Engineering Chemistry Research*, **36** (9), 3480-3486.

Full Text: [1997\Ind Eng Che Res36, 3480.pdf](1997/Ind%20Eng%20Che%20Res36,%203480.pdf)

Abstract: Oxidation of aqueous solutions of a model azo dye pollutant (Orange II) was studied in a semibatch reactor operated at temperatures between 180 and 240 degrees C and oxygen partial pressures from 10 to 30 bar. The dye concentrations were in a range (100 and 1000 mg L-1) that one may encounter in an industrial wastewater stream. Orange II oxidation undergoes a parallel-consecutive reaction pathway in which it first decomposes thermally and oxidatively to aromatic intermediates and then via organic acids to the final product-carbon dioxide. The thermal and oxidative disappearance rates of Orange II were found to be first-order reactions with respect to the mother compound, while the oxidation rate of intermediates was found to be second order when lumped by means of total organic carbon. The rate of organic carbon disappearance in solution can be predicted by adding up the rate at which organic carbon in Orange II disappears and the rate of carbon disappearance in lumped intermediates. Both oxidation rates obey the first-order dependence with respect to partial pressure of oxygen. The activation energies of all three steps, i.e. thermal and oxidative decompositions of Orange II and lump oxidation, are found to be 90, 104, and 57 kJ mol-1, respectively. The last activation energy suggests that some intermediates from the lump are oxidized directly to carbon dioxide. The results show the biodegradability of solutions increases with treatment time, but complete biodegradation with nonacclimated seed was not reached. Maximum biodegradability was reached in an experiment carried out at 200 degrees C.

Keywords: Organic-Compounds, Phenol Oxidation, Degradation, Kinetics, Water

Hsien, T.Y. and Rorrer, G.L. (1997), Heterogeneous cross-linking of chitosan gel beads: Kinetics, modeling, and influence on cadmium ion adsorption capacity. *Industrial & Engineering Chemistry Research*, **36** (9), 3631-3638.

Full Text: [I\Ind Eng Che Res36, 3631.pdf](I/Ind%20Eng%20Che%20Res36,%203631.pdf)

Abstract: Chitosan, a linear biopolymer of glucosamine residues, selectively adsorbs transition-metal ions such as cadmium from dilute solution. In order to process chitosan into a more durable form, a 5 wt % chitosan solution was cast into spherical gel beads of 3 mm diameter and then reacted with glutaraldehyde at free amine sites to form imine cross-links between linear chitosan chains. The rate processes of the heterogeneous cross-linking reaction and the effect of cross-linking on the cadmium ion adsorption capacity were determined. The cross-linking reaction was complete within 48 h at 27 ºC, and the final extent of cross-linking ranged from 0.07 to 2.40 mol of glutaraldehyde consumed/mol of amine. Heterogeneous cross-linking was modeled as a shrinking core process where the molecular diffusion of glutaraldehyde through the cross-linked shell of the gel bead limited the overall rate of glutaraldehyde consumption. The effective diffusion coefficient of glutaraldehyde through the cross-linked layer was 4.7×10-8 cm2/s. The saturation adsorption capacity of cadmium ions on the cross-linked gel beads exponentially decreased from 250 to 100 mg of Cd/g of chitosan as the extent of cross-linking increased from 0 to 1.3 mol of glutaraldehyde consumed/mol of amine. At higher extents of cross-linking, the saturation adsorption capacity remained at 100 mg of Cd/g of chitosan. Highly porous chitosan beads formed by freeze-drying of cross-linked gel beads had the same cadmium ion adsorption capacity as the cross-linked gel beads over the same extents of cross-linking.

Juang, R.S. and Ju, C.Y. (1997), Equilibrium sorption of copper(II)-ethylenediaminetetraacetic acid chelates onto cross-linked, polyaminated chitosan beads. *Industrial & Engineering Chemistry Research*, **36** (12), 5403-5409.

Full Text: [I\Ind Eng Che Res36, 5403.pdf](I/Ind%20Eng%20Che%20Res36,%205403.pdf)

Abstract: The sorption equilibria of copper(II) chelates of EDTA (ethylenediaminetetraacetic acid) from an equimolar solution with cross-linked, polyaminated chitosan beads were investigated. The polyamination was done by introducing different molecular weights of water-soluble poly(ethylenimine) (PEI). Experiments were carried out as a function of the pH, concentration of Cu(II) ions, and temperature. It was shown that whether the initial aqueous phase was acidic or basic, it tended to become neutral after sorption. The amount of sorption increased with increasing the initial concentration of Cu(II) ions, temperature, and molecular weight of PEI introduced into the bead. Moreover, the measured equilibrium isotherms could be correlated by a dual sorption model containing the BET equation for a finite number of layers.

Keywords: Highly Porous Chitosan, Waste-Water, Metal-Ions, Adsorption, Removal, Recovery, Cadmium, EDTA, Ultrafiltration, Binding

Gupta, V.K., Srivastava, S.K. and Mohan, D. (1997), Equilibrium uptake, sorption dynamics, process optimization, and column operations for the removal and recovery of malachite green from wastewater using activated carbon and activated slag (vol 36, pg 2210, 1997). *Industrial & Engineering Chemistry Research*, **36** (12), 5545.

Full Text: [I\Ind Eng Che Res36, 5545.pdf](I/Ind%20Eng%20Che%20Res36,%205545.pdf)

Gupta, V.K. (1998), Equilibrium uptake, sorption dynamics, process development, and column operations for the removal of copper and nickel from aqueous solution and wastewater using activated slag, a low-cost adsorbent. *Industrial & Engineering Chemistry Research*, **37** (1), 192-202.

Full Text: [I\Ind Eng Che Res37, 192.pdf](I/Ind%20Eng%20Che%20Res37,%20192.pdf)

Abstract: Activated slag developed from blast furnace waste material has been used for the removal of copper and nickel. The effects of particle size distribution, contact time, and surface loading of these metal ions on the adsorbent for their removal have been studied at the optimum pH (5.0 for Cu2+ and 4.0 for Ni2+). Kinetic studies were performed to decide the mechanistic steps of the process and to obtain the thermodynamic parameters. Sorption data have been correlated with both Langmuir and Freundlich adsorption models. Column operations were also performed in an attempt to simulate industrial conditions. The bed-depth-service-time (BDST) model has successfully been applied to the sorptive removal of nickel and copper. experiments have been performed with a goal to recover adsorbate and chemical regeneration of the spent columns without dismantling the same.

Keywords: Toxic Metal-Ions, Fly-Ash, Industrial-Waste, Earth Elements, Adsorption, Cadmium, Water, Lead, Carbon, Chromium

Koh, J.H., Wankat, P.C. and Wang, N.H.L. (1998), Pore and surface diffusion and bulk-phase mass transfer in packed and fluidized beds. *Industrial & Engineering Chemistry Research*, **37** (1), 228-239.

Full Text: [I\Ind Eng Che Res37, 228.pdf](I/Ind%20Eng%20Che%20Res37,%20228.pdf)

Abstract: Experimental breakthrough data of L-phenylalanine were obtained from cation-exchange columns over a wide range of feed concentrations and flow rates. Simulations based on three rate models were used to analyze the data. The models include three different intraparticle diffusion mechanisms: pore diffusion, surface diffusion, or parallel pore and surface diffusion, respectively. Simulated column breakthrough curves were compared to data from both packed beds and fluidized beds. Both the pore diffusion and surface diffusion models gave reasonable fits for breakthrough curves; however, these fits required that the apparent surface diffusivities obtained from the surface diffusion model increase with increasing concentration, and the apparent pore diffusivities obtained from the pore diffusion model decrease with increasing concentration and are larger than Brownian diffusivity. These results suggest that both pore diffusion and surface diffusion are important intraparticle transport mechanisms. A systematic method was developed to estimate the pore diffusivity and the surface diffusivity independently, which were used in the parallel diffusion model for data analysis. The parallel diffusion model can accurately simulate the data over a wide range of concentrations and flow rates using concentration-independent pore and surface diffusivities. The parallel diffusion model with diffusivities estimated from packed-bed data can successfully predict the data for fluidized beds with large (>2) length to diameter ratios. Correlations for mass-transfer parameters in the bulk phase of expanded or fluidized beds were successful for simulation of breakthroughs from columns with large length to diameter ratios.

Keywords: Ion-Exchange, Adsorption, Transport, Liquid, Chromatography, Systems, Model, Simulation, Dispersion, Particles

Chern, J.M. and Huang, S.N. (1998), Study of nonlinear wave propagation theory. 1. Dye adsorption by activated carbon. *Industrial & Engineering Chemistry Research*, **37** (1), 253-257.

Full Text: [I\Ind Eng Che Res37, 253.pdf](I/Ind%20Eng%20Che%20Res37,%20253.pdf)

Abstract: The adsorption of red and yellow dyes by granular activated carbon from aqueous solution was studied. The Langmuir model, Freundlich model, and Redlich-Peterson model were found to fit the adsorption isotherm data well in different dye concentration ranges. Fixed-bed column tests were performed, and the results showed that the activated carbon was very effective in removing the dyes from aqueous solutions at low feed flow rates. The nonlinear wave propagation theory was used to predict the column dynamics, namely, the breakthrough and desorption curves. Without solving the governing equation for column dynamics, the theory used the concept of concentration wave and simple calculations to predict the breakthrough and desorption curves satisfactorily.

Keywords: Mass-Transfer, Chromatography, Dyestuffs, Removal

Matatov-Meytal, Y.I. and Sheintuch, M. (1998), Catalytic abatement of water pollutants. *Industrial & Engineering Chemistry Research*, **37** (2), 309-326.

Full Text: [I\Ind Eng Che Res37, 309.pdf](I/Ind%20Eng%20Che%20Res37,%20309.pdf)

Abstract: The paper reviews solid-catalyzed oxidation and reduction processes for the treatment of wastewater that contains small concentrations of toxic compounds and for which separation is not economical while biological treatment is not feasible. Specifically, the objectives are (1) to understand the interactions between catalytic materials and various pollutants, (2) to provide a database for catalyst selection, and (3) to assess the potential of these processes for commercialization. The review suggests tl-le following well-investigated; solutions: (1) Supported metal (Ru/CeO2, Pt/CeO2, and Ru/C) and metal oxides (CuO-ZnO-CoO, MnO2/CeO2, CoO/Bi2O3, and V2O5/AlvO3) are the most promising catalysts for the destruction of refractory organic compounds with nearly 100% selectivity to CO2; (2) CoO/CeO2 and MnO2/CeO2 are the most active catalysts for ammonia oxidation at temperatures of 263-400 degrees C; (3) activated carbon, preferably in the presence of copper ions, Is an active catalyst for the oxidation of cyanides and sulfur-containing compounds; (4) catalytic hydrodechlorination (HDC) of chloroorganics and hydrodenitrification (HDN) of nitrates emerge as promising processes for wastewater treatment. To overcome mass-transfer resistance, catalysts should be constructed as fibers, cloth, or powder. Novel processes that incorporate separation at room temperature (e.g., by adsorption) and reaction at elevated temperatures are de:scribed. Suggestions for new directions of research are made.

Keywords: Liquid-Phase Oxidation, Supercritical Water, Wet Oxidation, Organic-Compounds, Aqueous-Solutions, Waste-Water, Phenol Oxidation, Drinking-Water, Toxic Organics, Removal

Vegliò, F., Beolchini, F. and Toro, L. (1998), Kinetic modeling of copper biosorption by immobilized biomass. *Industrial & Engineering Chemistry Research*, **37** (3), 1107-1111.

Full Text: [I\Ind Eng Che Res37, 1107.pdf](I/Ind%20Eng%20Che%20Res37,%201107.pdf)

Abstract: The kinetic modeling of copper biosorption by *Arthrobacter* sp. immobilized in a hydroxyethyl methacrylate-based matrix is reported in this work. The resin-biomass complex (RBC) has been used for copper biosorption in different conditions according to a factorial experiment. Factors investigated were cross-linker (trimethylolpropane trimethacrylate) concentration, biomass concentration in the solid, and particles’ granulometry. A maximum copper specific uptake of about 7 mg of Cu/g of biomass (dry weight) has been observed, in the case of a RBC with the following characteristics: 2% (w/w) cross-linker concentration, 8% (w/w) biomass concentration, and 425-750 μm granulometry. The shrinking core model has been used for the fitting of experimental data. A good fit has been found in the case of controlling intraparticle diffusion in all experimental trials. The copper diffusion coefficient in RBC has been estimated from the slope of the regression lines. Values obtained for the diffusion coefficients do not differ from one another with respect to the estimated standard error. An average apparent copper diffusion coefficient of about 3×10−6 cm2 /s has been found.

Sun, G. and Shi, W.X. (1998), Sunflower stalks as adsorbents for the removal of metal ions from wastewater. *Industrial & Engineering Chemistry Research*, **37** (4), 1324-1328.

Full Text: [I\Ind Eng Che Res37, 1324.pdf](I/Ind%20Eng%20Che%20Res37,%201324.pdf)

Abstract: Sunflower stalks as adsorbents for the removal of metal ions such as copper, cadmium, zinc, and chromium ions in aqueous solutions were studied with equilibrium isotherms and kinetic adsorptions. The maximum adsorptions of four heavy metals are 29.3 mg/g (Cu2+), 30.73 mg/g (Zn2+), 42.18 mg/g (Cd2+), and 25.07 mg/g (Cr3+), respectively. Particle sizes of sunflower stalks affected the adsorption of metal ions; the finer size of particles showed better adsorption to the ions. Temperature also plays an interesting role in the adsorption of different metal ions. Copper, zinc, and cadmium exhibited lower adsorption on sunflower stalks at higher temperature, while chromium showed the opposite phenomenon. The adsorption rates of copper, cadmium, and chromium are quite rapid. Within 60 min of operation about 60-80% of these ions were removed from the solutions.

Keywords: Aqueous-Solutions, Adsorption, Bagasse

Yun, J.H., Choi, D.K. and Kim, S.H. (1998), Adsorption equilibria of chlorinated organic solvents onto activated carbon. *Industrial & Engineering Chemistry Research*, **37** (4), 1422-1427.

Full Text: [I\Ind Eng Che Res37, 1422.pdf](I/Ind%20Eng%20Che%20Res37,%201422.pdf)

Abstract: Adsorption equilibria of dichloromethane, 1,1,1-trichloroethane, and trichloroethylene on activated carbon were obtained by a static volumetric technique. Isotherms were measured for the pure vapors in the temperature range from 283 to 363 K and pressures up to 60 kPa for dichloromethane, 16 kPa for 1,1,1-trichloroethane, and 7 kPa for trichloroethylene, respectively. The Tóth and Dubinin-Radushkevich equations were used to correlate experimental isotherms. Thermodynamic properties such as the isosteric heat of adsorption and the Henry’s constant were calculated. It was found that the values of isosteric heat of adsorption were varied with surface loading. Also, the Henry’s constant showed that the order of adsorption affinity is 1,1,1-trichloroethane, trichloroethylene, and dichloromethane. By employing the Dubinin-Radushkevich equation, the limiting volume of the adsorbed space, which equals micropore volume, was determined, and its value was found to be approximately independent of adsorbates.

Notes: highly cited

Guibal, E., Milot, C. and Tobin, J.M. (1998), Metal-anion sorption by chitosan beads: Equilibrium and kinetic studies. *Industrial & Engineering Chemistry Research*, **37** (4), 1454-1463.

Full Text: [I\Ind Eng Che Res37, 1454.pdf](I/Ind%20Eng%20Che%20Res37,%201454.pdf)

Abstract: Chitosan is a well-known biopolymer, whose high nitrogen content confers remarkable ability for the sorption of metal ions from dilute effluents. However, its sorption performance in both equilibrium and kinetic terms is controlled by diffusion processes. Gel bead formation allows an expansion of the polymer network, which improves access to the internal sorption sites and enhances diffusion mechanisms. Molybdate and vanadate recovery using glutaraldehyde crosslinked chitosan beads reaches uptake capacities as high as 7-8 mmolg-1, depending on the pH. The optimum pH (3-3.5) corresponded to the predominance range of hydrolyzed polynuclear metal forms and optimum electrostatic attraction. While for beads, particle size does not influence equilibrium, for flakes, increasing sorbent radius significantly decreases uptake capacities to 1.5 mmolg-1. Sorption kinetics are mainly controlled by intraparticle diffusion for beads, while for flakes the controlling mechanisms are both external and intraparticle diffusions. The gel conditioning increases the intraparticle diffusivity by 3 orders of magnitude: intraparticle diffusivities range between 10-13 and 10-10 m2 min-1, depending on the sorbent size and the conditioning.

Keywords: Access, Beads, Chitosan, Crosslinked Chitosan, Diffusion, Diffusion Processes, Equilibrium, Glutaraldehyde, Intraparticle Diffusion, Kinetic, Kinetic Studies, Kinetics, Mechanisms, Metal, Metal Ions, Network, Particle Size, pH, Polymer, Recovery, Size, Sorbent, Sorption, Sorption Kinetics

Kabay, N., Demircioglu, M., Ekinci, H., Yuksel, M., Saglam, M., Akcay, M. and Streat, M. (1998), Removal of metal pollutants (Cd(II) and Cr(III)) from phosphoric acid solutions by chelating resins containing phosphonic or diphosphonic groups. *Industrial & Engineering Chemistry Research*, **37** (6), 2541-2547.

Full Text: [I\Ind Eng Che Res37, 2541.pdf](I/Ind%20Eng%20Che%20Res37,%202541.pdf)

Abstract: In this study, chelating ion exchangers containing phosphonic (-PO (OH)2) acid groups (RSPO, Diaion-CRP200) and the new chelating resins (Diphonix) containing sulfonic and gem-diphosphonic acid groups chemically bonded in a styrene-divinylbenzene polymeric network have been investigated for sorption of Cd(II) ions from phosphoric acid solutions. Comparison of acid dependencies of Cd(II) uptake measured with that obtained using a commercial sulfonic acid type ion-exchange resin (Dowex 50W (X8)) and a solvent containing resins (Actinide-CU) has been performed. The resin Diphonix has been employed for columnar sorption of Cd(II) and Cr(III) ions from phosphoric acid solutions.

Keywords: Ion-Exchange Resin, Impregnated Resins, Levextrel Resins, Zn(II), Cu(II), Cadmium, Dependencies, Extraction, Adsorption, Media

Lee, J.S., Deorkar, N.V. and Tavlarides, L.L. (1998), Adsorption of copper cyanide on chemically active adsorbents. *Industrial & Engineering Chemistry Research*, **37** (7), 2812-2820.

Full Text: [I\Ind Eng Che Res37, 2812.pdf](I/Ind%20Eng%20Che%20Res37,%202812.pdf)

Abstract: An inorganic chemically active adsorbent (ICAA), SG (1)-TEPA (tetraethylenepentaamine)-propyl, is developed for removal, recovery, and recycling of copper cyanide from industrial waste streams. Equilibrium studies are executed to determine and model adsorption of the copper cyanide complex from aqueous solutions in a batch and packed column. It appears that adsorption is dependent on anionic copper cyanide species and the basicity of the ligand. Aqueous-phase equilibrium modeling shows that monovalent (Cu(CN)2-), divalent (Cu(CN)32-), and trivalent (Cu(CN)43-) species of copper cyanide exist in the solution, depending on the pH and the concentration of total cyanide ions. Batch adsorption data are modeled using a modified multicomponent Langmuir isotherm which includes aqueous-phase speciation and basicity of the SG (1)-TEPA-propyl. This developed model is applied with a mass balance equation to describe the adsorption of copper cyanide complexes in a packed column.

Keywords: Hazardous Wastes, Packed-Bed, Destruction, Recovery, Cathode, Metal, Anode

Malakul, P., Srinivasan, K.R. and Wang, H.Y. (1998), Metal adsorption and desorption characteristics of surfactant modified clay complexes. *Industrial & Engineering Chemistry Research*, **37** (11), 4296-4301.

Full Text: [I\Ind Eng Che Res37, 4296.pdf](I/Ind%20Eng%20Che%20Res37,%204296.pdf)

Abstract: Several modified clays have been designed and created for selective removal and recovery of heavy metals such as Cd, Cu, Cr, etc. These surfactant-clay complexes were prepared using hectorite or montmorillonite as the base clay. A simple two-step approach has been developed to synthesize these modified-clay complexes through ion exchange and hydrophobic anchoring of several surfactants such as long-chain alkyldiamines, long-chain dialkylamines, and long-chain carboxylic adds onto the clay matrices. The adsorption capacities and affinity constants of the modified clays can be found to approach those of commercial chelating resin (Chelex 100, Bio-Rad). Using cadmium as a model metal and montmorillonite-cetylbenzyldimethylammonium-palmitic acid (M-CBDA-PA) as a model modified-clay complex, the maximum adsorption capacity of the modified clay is found to be 42±0.8 mg/g of clay and the affinity constant is 3.0±0.1 mg/L. The metal adsorption has been shown to be mainly through chemical complexation rather than ion exchange. The immobilization of the metal ions is pH dependent, and thus, pH can act as a molecular switch to regenerate the modified-clay complexes.

Keywords: Adsorption, Cadmium, Capacity, Chemical, Clay, Complex, Complexation, Complexes, Desorption, Heavy Metals, Immobilization, Ion, Ion Exchange, Metal Adsorption, Metal Ions, Metals, Model, Modified, Modified Clay, Montmorillonite, Organo-Clays, pH, Priority Pollutants, Recovery, Removal, Selective, Sorption, Surfactant, Surfactants

Yang, H.M. and Wu, H.E. (1998), Kinetic study for synthesizing dibenzyl phthalate via solid-liquid phase-transfer catalysis. *Industrial & Engineering Chemistry Research*, **37** (12), 4536-4541.

Full Text: [I\Ind Eng Che Res37, 4536.pdf](I/Ind%20Eng%20Che%20Res37,%204536.pdf)

Abstract: In the present study, the kinetics for synthesizing dibenzyl phthalate via solid-liquid phase-transfer catalysis under anhydrous conditions was investigated. The esterification of benzyl bromide and solid reactant dipotassium phthalate was carried out in a stirred batch reactor. The behavior of the active intermediate in solid-liquid phases was explored to understand its catalytic characteristics. The effects of agitation speeds, concentration of reactants, phase-transfer catalysts, organic solvents, amounts of catalysts used, and reaction temperatures were all investigated. A kinetic model describing the reactions in a solid-liquid system was also proposed. From the experimental results, the reaction rate increases with increasing agitation speed, polarity of organic solvent, and temperature even without adding water and can be described by the pseudo-second-order kinetics. The reaction rate was extremely slow without using catalysts even at a higher temperature. The apparent rate constants as well as the activation energies for various phase-transfer catalysts were obtained. The present study provides an insight on the catalytic behaviors of solid-liquid phase-transfer catalysis.

Namasivayam, C. and Senthilkumar, S. (1998), Removal of arsenic(V) from aqueous solution using industrial solid waste: Adsorption rates and equilibrium studies. *Industrial & Engineering Chemistry Research*, **37** (12), 4816-4822.

Full Text: [I\Ind Eng Che Res37, 4816.pdf](I/Ind%20Eng%20Che%20Res37,%204816.pdf)

Abstract: Industrial solid wastes can be recycled as nonconventional adsorbents, if they are nontoxic, to reduce the cost of wastewater treatments. “Waste” Fe(III)/Cr(III) hydroxide, generated electrolytically in the treatment of Cr(VI) containing wastewaters in a fertilizer industry was used for the adsorption of arsenic(V) from aqueous solution. Parameters studied include arsenic(V) concentration, agitation time, adsorbent dosage, adsorbent particle size, temperature, and pH. The adsorption capacity was evaluated by using both Langmuir and Freundlich isotherm models. The adsorption followed a first-order rate expression. Adsorption of As(V) was independent of the initial pH (3-10) of the aqueous solution. Temperature studies showed that the adsorption process was endothermic in nature. Desorption of As(V) from spent adsorbent was also investigated using NaOH solutions.

Keywords: Fe(III)/Cr(III) Hydroxide, Arsenate Ions, Metal-Ions, Water, Adsorbent, Cd(II), Soils

Wu, F.C., Tseng, R.L. and Juang, R.S. (1999), Role of pH in metal adsorption from aqueous solutions containing chelating agents on chitosan. *Industrial & Engineering Chemistry Research*, **38** (1), 270-275.

Full Text: [I\Ind Eng Che Res38, 270.pdf](I/Ind%20Eng%20Che%20Res38,%20270.pdf)

Abstract: The role of pH in adsorption of Cu(II) from aqueous solutions containing chelating agents on chitosan was emphasized. Four chelating agents including ethylenediaminetetraacetic acid (EDTA), citric acid, tartaric acid, and sodium gluconate were used. It was shown that the adsorption ability of Cu(II) on chitosan from its chelated solutions varied significantly with pH variations. The competition between coordination of Cu(II) with unprotonated chitosan and electrostatic interaction of the Cu(II) chelates with protonated chitosan took place because of the change in solution pH during adsorption. The maximum adsorption capacity was obtained within each optimal pH range determined from titration curves of the chelated solutions. Coordination of Cu(II) with the unprotonated chitosan was found to dominate at pH below such an optimal pH value.

Keywords: Activated Carbon, Uranyl Ions, Sorption, Removal, Equilibrium, Copper, Crosslinking, Adsorbents, Uranium, Binding

Ngah, W.S.W. and Liang, K.H. (1999), Adsorption of gold(III) ions onto chitosan and N-carboxymethyl chitosan: Equilibrium studies. *Industrial & Engineering Chemistry Research*, **38** (4), 1411-1414.

Full Text: [I\Ind Eng Che Res38, 1411.pdf](I/Ind%20Eng%20Che%20Res38,%201411.pdf)

Abstract: The adsorption of gold(III) ions onto chitosan and N-carboxymethyl chitosan (NCMC) has been investigated. Experiments were carried out as a function of pH, agitation period, and concentration of Au3+ ions. It was shown that the adsorption of Au3+ ions occurred only at the optimum pH. Kinetic studies showed a rapid adsorption of Au3+ from aqueous solution. Adsorption isothermal data could be interpreted by the Langmuir equation. Langmuir constants have been determined. The experimental data of the adsorption equilibrium from Au3+ solutions correlated well with the Langmuir isotherm equation. The uptake of Au3+ On chitosan and NCMC were 30.95 mg/g of chitosan and 33.90 mg/g of NCMC. The Au3+ ions were readily removed from chitosan and NCMC by treatment with an aqueous EDTA solution.

Keywords: Derivatives, Sorption, Kinetics, Cadmium, Removal, Chitin, Copper

Guibal, E., Larkin, A., Vincent, T. and Tobin, J.M. (1999), Chitosan sorbents for platinum sorption from dilute solutions. *Industrial & Engineering Chemistry Research*, **38** (10), 4011-4022.

Full Text: [I\Ind Eng Che Res38, 4011.pdf](I/Ind%20Eng%20Che%20Res38,%204011.pdf)

Abstract: Chitosan has proved efficient at removing platinum in dilute effluents. The maximum uptake capacity reaches 300 mg g-1 (almost 1.5 mmol g-1). The optimum pH for sorption is pH 2. A glutaraldehyde cross-linking pretreatment is necessary to stabilize the biopolymer in acidic solutions. Sorption isotherms have been studied as a function of pH, sorbent particle size, and the cross-linking ratio. Surprisingly, the extent of the cross-linking (determined by the concentration of the cross-linking agent in the treatment bath) has no significant influence on uptake capacity. Competitor anions such as chloride or nitrate induce a large decrease in the sorption efficiency. Sorption kinetics show also that uptake rate is not significantly changed by increasing either the cross-linking ratio or the particle size of the sorbent. Mass transfer rates are significantly affected by the initial platinum concentration and by the conditioning of the biopolymer. Gel-bead conditioning appears to reduce the sorption rate. While for molybdate and vanadate ions, mass transfer was governed by intraparticle mass transfer, for platinum, both external and intraparticle diffusion control the uptake rate. In contrast with the former ions, platinum does not form polynuclear hydrolyzed species, which are responsible for steric hindrance of diffusion into the polymer network.

Keywords: Acid, Adsorption, Aqueous-Solutions, Diffusion, Gel Beads, Glutaraldehyde Cross-Linking, Glutaraldehyde Crosslinking, Highly Porous Chitosan, Isotherms, Kinetics, Mercury(II), Metal-Ions, Molybdate, Particle Size, Platinum, Sorption, Uranyl Ions

Chisholm, P.N. and Rochelle, G.T. (1999), Dry absorption of HCL and SO2 with hydrated lime from humidified flue gas. *Industrial & Engineering Chemistry Research*, **38** (10), 4068-4080.

Full Text: [I\Ind Eng Che Res38, 4086.pdf](I/Ind%20Eng%20Che%20Res38,%204086.pdf)

Abstract: The simultaneous absorption of HCl and SO2 by hydrated lime in a fixed-bed reactor has been studied at conditions simulating humidified flue gas dry scrubbing. At 120 degrees C, an increase in relative humidity from 0% to 19% increased HCl removal and sorbent utilization. At 19% relative humidity (RH), the final loading of hydrated lime was 1.64 mol of HCl/mol of Ca2+. From 250 to 1000 ppm HCl, HCl removal was first order in HCl concentration. When SO2 was added to the feed gas, the total utilization of the sorbent by HCl and SO2 was not a function of gas concentration with 250-1000 ppm HCl and 0-2000 ppm SO2. However, the fraction of the hydrated lime converted by SOB increased as the SO2/HCl feed ratio increased. With oxygen present in the feed, more SO2 was absorbed. Adding 150 ppm NO2 to the gas stream increased the final SO2 loading from 0.06 to 0.17 mol of SO2/mol of Ca2+. As the reactivity of SO2 and NO2 increased, the reactivity of HCl decreased slightly as a result of the competition for alkalinity with the other acid gases. The data were modeled using semiempirical flux equations based on a modified shrinking core model. Results from the parameter estimation were used to predict the absorption of HCl and SO2 on the surface of a bag filter. The predictions indicated that, with a humidified flue gas and 50% sorbent utilization, less than 20% HCl penetration is possible. However, even at the conditions with the greatest SO2 absorption (250 ppm HCl, 150 ppm NO2, and 2.5% O2), 90% SO2 penetration is predicted at 50% sorbent utilization.

Keywords: Hydrogen-Chloride, Low-Temperatures, Kinetics, Desulfurization, Limestone, Sorbents, Removal, Sulfation

Beatty, S.T., Fischer, R.J., Hagers, D.L. and Rosenberg, E. (1999), A comparative study of the removal of heavy metal ions from water using a silica-polyamine composite and a polystyrene chelator resin. *Industrial & Engineering Chemistry Research*, **38** (11), 4402-4408.

Full Text: [I\Ind Eng Che Res38, 4402.pdf](I/Ind%20Eng%20Che%20Res38,%204402.pdf)

Abstract: The maximum Cu(II), Ni(II), and Co(II) ion capacities of a silica-poly (ethyleneimine) composite (WP-1) are compared with those of the commercially available iminodiacetic acid chelator resin Amberlite IRC-718. Under batch (static) conditions, IRC-718 exhibits better capacities for these metals than WP-1. Dynamic studies, however, revealed that WP-1 possessed a much higher capacity for all three divalent metals than IRC-718, with relative metal capacities in the order Cu(II) > Co(II) approximate to Ni(II). In the presence of the competing chelator ethylenediaminetetraacetic acid, the Cu(II) capacities of WP-1 and IRC-718 lost 48% and 45%, respectively, of their original adsorption values. Even with this decrease, however, WP-1 maintained a higher Gu(II) capacity than IRC-718. Repeated cycle testing, using Cu(II) solutions at both room temperature and 97 degrees C, was conducted to compare the long-term stability of each material. WP-1 maintained 94% of its original Cu(II) capacity and maintained structural integrity after 3000 cycles using room temperature copper solutions, while IRC-718 compressed and dropped to 64% of its original capacity. When boiling copper solutions were used, the capacity of WP-1 increased slightly over 1500 cycles, while IRC-718 lost 13% of its original copper capacity and again became compressed, indicating degradation of the polystyrene beads.

Keywords: Attached Poly (Egdma-Hema) Microspheres, Cadmium, Recovery

Ko, D.C.K., Porter, J.F. and McKay, G. (1999), Correlation-based approach to the optimization of fixed-bed sorption units. *Industrial & Engineering Chemistry Research*, **38** (12), 4868-4877.

Full Text: [I\Ind Eng Che Res38, 4868.pdf](I/Ind%20Eng%20Che%20Res38,%204868.pdf)

Abstract: The sorption of copper, zinc, and cadmium ions onto bone char in fixed-bed columns has been studied. The effects of process variables such, as bed height, now rate, initial concentration, percentage breakthrough, and particle size have been investigated. The results have been used to predict the effect of parameter changes on the system by using the bed depth service time (BDST) approach. After the BDST results are obtained, the system variables can further be optimized based on the adsorbent exhaustion rate and the empty bed residence time (EBRT). The correlations for operating lines of the EBRT plot have been proposed and tested on three metal ion sorption systems. The mechanism of the metal ion sorption on bone char was also investigated.

Keywords: Mass-Transfer Coefficients, Adsorption Systems, Diffusion, Adsorbers, Batch, Pore

Laboy, M.M., Santiago, I. and Lopez, G.E. (1999), Computing adsorption isotherms for benzene, toluene, and p-xylene in heulandite zeolite. *Industrial & Engineering Chemistry Research*, **38** (12), 4938-4945.

Full Text: [I\Ind Eng Che Res38, 4938.pdf](I/Ind%20Eng%20Che%20Res38,%204938.pdf)

Abstract: When computer simulations were performed in the grand canonical ensemble, adsorption isotherms for benzene, toluene, and p-xylene in Heulandite zeolite were constructed. Nitrogen adsorption was simulated to test a feasible computational strategy. Simulations were performed at three temperatures (200, 298, and 473 K), at pressures ranging from 0 to 200 kPa, and at water contents ranging from 0% to 4%, It was found that the adsorption of the organic species was not significantly affected by increasing the pressure over 10 kPa. Also, increasing the water content of the zeolite reduced the adsorption of these aromatics significantly. On the other hand, as the temperature was increased the amount of adsorbed material was only slightly affected. To access adsorption selectivity information, various mixtures of the aromatics were studied. Results from the simulations show that adsorption of benzene was higher than that of toluene, and toluene adsorption was higher than that of p-xylene. A relation between the electronic environment; of the molecular species and the amount of adsorbed material was established. The results obtained are compared with experimental data available on other synthetic and natural zeolites.

Keywords: Silicalite, Simulations, Prediction, Sorption

Modrzejewska, Z. and Kaminski, W. (1999), Separation of Cr(VI) on chitosan membranes. *Industrial & Engineering Chemistry Research*, **38** (12), 4946-4950.

Full Text: [I\Ind Eng Che Res38, 4946.pdf](I/Ind%20Eng%20Che%20Res38,%204946.pdf)

Abstract: Chitosan membranes were used for hexavalent chromium removal. Investigations covered membranes produced by phase inversion (wet-method). The modifications of membranes were made by acetylated and cross-linked Cu(II). In the experiments chitosan produced by the Sea Fisheries Institute, Poland, was used. The metal ions were removed on chitosan membranes during membrane processes. The modifications and the effect of the pH of the solution on the separation properties of membranes were determined. The concentration of metal ions was measured by the method of inductively coupled plasma (ICP) atomic emission spectrometry.

Keywords: Metal-Ions, Adsorption

Lin, C.C. and Liu, H.S. (2000), Adsorption in a centrifugal field: Basic dye adsorption by activated carbon. *Industrial & Engineering Chemistry Research*, **39** (1), 161-167.

Full Text: [I\Ind Eng Che Res39, 161.pdf](I/Ind%20Eng%20Che%20Res39,%20161.pdf)

Abstract: The adsorption of basic yellow dye on activated carbon from aqueous solutions under a centrifugal field was explored and interpreted by both a pseudo-first-order mechanism and intraparcticle diffusion mechanism. The adsorption process, based on the assumption of a pseudo-first-order mechanism, was developed to estimate the rate constant with the effect of centrifugal force, initial dye concentration. Also, the rate parameter based on the intraparticle diffusion model was presented. In addition, the diffusion coefficients were evaluated from both models. The results showed that the centrifugal force could enhance the rate constant, the rate parameter, and the diffusion coefficient. Therefore, better mass transfer could be provided with centrifugal force.

Keywords: Rotating Packed-Beds, Aqueous-Solution, Gas-Liquid, Contactor, Sorption, Removal

Wang, K., Qiao, S. and Hu, X. (2000), Application of IAST in the prediction of multicomponent adsorption equilibrium of gases in heterogeneous solids: Micropore size distribution versus energy distribution. *Industrial & Engineering Chemistry Research*, **39** (2), 527-532.

Full Text: [I\Ind Eng Che Res39, 257.pdf](I/Ind%20Eng%20Che%20Res39,%20257.pdf)

Abstract: This article investigates the effect of surface heterogeneity and energy-matching scheme on the prediction of adsorption equilibria on activated carbon. The ideal adsorbed solution theory (IAST) is employed to evaluate the local adsorption equilibria on each energy site while the energetic heterogeneity of the system is represented by two forms: (1) uniform energy distribution, which employs the cumulative energy scheme to match different adsorbates in the adsorbed phase; and (2) micropore size distribution, which invokes the adsorbate-pore interaction matching scheme. The adsorption equilibria of hydrocarbon gas mixtures measured on two commercial activated carbons are used to compare the two models. It is found that uniform energy distribution can be insufficient in the prediction of multicomponent adsorption equilibria. On the other hand, the model assuming micropore size distribution as adsorption energetic heterogeneity and the adsorbate-pore interaction energy-matching scheme presents relatively stable prediction results.

Silva, J.A.C., Mata, V.G., Dias, M.M., Lopes, J.C.B. and Rodrigues, A.E. (2000), Effect of coke in the equilibrium and kinetics of sorption on 5A molecular sieve zeolites. *Industrial & Engineering Chemistry Research*, **39** (4), 1030-1034.

Full Text: [I\Ind Eng Che Res39, 1030.pdf](I/Ind%20Eng%20Che%20Res39,%201030.pdf)

Abstract: Porosimetric, gravimetric, zero length column (ZLC), and fixed-bed studies on coked pellets of 5A molecular sieve zeolites were performed. From porosimetric studies it seems that the coke is located in the microporous structure of 5A zeolite or as layers covering all crystals. The gravimetric studies between 473 and 573 K using n-pentane as a probe molecule show that Henry’s constants in coked pellets are much smaller than those in fresh ones. The kinetics of sorption measured by the ZLC technique is also significantly modified. The results show that the system changes from a macropore control resistance with the reciprocal of time constant D-p/R-p(2)(1 + K) on the order of 0.002-0.02 s-1 in fresh pellets to a micropore control resistance system with reciprocal time constant D-c/r(c)(2) 1 Order of magnitude lower in coked pellets. The effect of temperature on the behavior of a fixed bed is also shown. A simple mathematical model with equilibrium and diffusivity parameters obtained from independent experiments predicts with good accuracy all fixed-bed adsorption and desorption runs.

Keywords: Diffusion

Doan, H.D. and Fayed, M.E. (2000), Entrance effect and gas-film mass-transfer coefficient in a large-diameter packed column. *Industrial & Engineering Chemistry Research*, **39** (4), 1039-1047.

Full Text: [I\Ind Eng Che Res39, 1039.pdf](I/Ind%20Eng%20Che%20Res39,%201039.pdf)

Abstract: The effects of the bed height and the entrance section below the packing support on mass transfer in a 1.2-m diameter packed bed of 50-mm ceramic Intalox saddles were investigated under various gas flow rates from 1957 to 7828 kg.h-1.m-2 and liquid flow rates from 12 200 to 46 700 kg.h-1.m-2. The entrance effect accounted for 17% of the overall water vapor transferred from moist air to a calcium chloride solution in the tower, regardless of the packing height. For a 0.91-m high bed, the average mass-transfer coefficient was directly proportional to the gas rate and was proportional to the liquid rate to the power of 0.24. For a 1.8-m high bed, the average mass-transfer coefficient was proportional to the gas rate to the power of 0.89 and appeared to be independent of the liquid rate. The height of a transfer unit (HTU) for 50-mm ceramic Intalox saddles remained relatively constant under various gas rates used in the present study. The HTU was about 0.5 m for the short bed and 0.8 m for the tall bed.

Yoshida, H. and Takatsuji, W. (2000), Parallel transport of an organic acid by solid-phase and macropore diffusion in a weakly basic ion exchanger. *Industrial & Engineering Chemistry Research*, **39** (4), 1074-1079.

Full Text: [I\Ind Eng Che Res39, 1074.pdf](I/Ind%20Eng%20Che%20Res39,%201074.pdf)

Abstract: The parallel transport of an organic acid by solid-phase and macropore diffusion within a porous ion exchanger was studied by measuring equilibrium isotherms and uptake curves for adsorption bf acetic acid and lactic acid on a weakly basic ion exchanger, DIAION WA30. Experimental adsorption isotherms were correlated by the Langmuir equation. The Langmuir equilibrium constant of acetic acid was close to that of lactic acid, and the saturation capacity of acetic acid was about 84% that of lactic acid. Intraparticle effective diffusivity Deff was determined using the homogeneous Fickian diffusion model. The value of Deff for acetic acid was about 1.5 times lactic acid. Because D-eff increased with linearly increasing bulk phase concentration C0, Deff was separated to the solid-phase diffusivity Ds and the macropore diffusivity Dp by applying the parallel diffusion model. The model agreed well with the experimental curves. The values of Ds and Dp for acetic acid were about 2 and 1.5 times those of lactic acid, respectively. The acetic acid and the lactic acid may be separated by the difference of the diffusion rates.

Keywords: Binary-Systems, Adsorption, Equilibria, Sorption, Chitosan, Resins

Ioannidis, S. and Anderko, A. (2000), Thermodynamic modeling of molecular adsorption using parameters derived from binary surface excess data. *Industrial & Engineering Chemistry Research*, **39** (4), 1095-1105.

Full Text: [I\Ind Eng Che Res39, 1095.pdf](I/Ind%20Eng%20Che%20Res39,%201095.pdf)

Abstract: A methodology for modeling molecular adsorption in multicomponent systems has been developed. The adsorption process is described using the concept of exchange reactions at the solid-liquid interface. The nonideality of the adsorbed phase is represented using the Wilson solution model. For the computation of the equilibrium bulk phase activity coefficients, the nonrandom two-liquid (NRTL) model is used. The model allows for the existence of multiple adsorbed layers at the interface. Binary surface excess data are used to derive equilibrium constants for each exchange reaction. The internal consistency of the methodology is verified by using two separate consistency tests, i.e., the triangular rule for equilibrium constants in ternary systems and the invariance of equilibrium constants with concentration. The model has been applied to a variety of concentrated or dilute systems, including mixtures with liquid-phase immiscibility. In all examined cases, accurate representation of experimental data has been obtained.

Keywords: Vapor-Liquid-Equilibria, Polynuclear Aromatic-Hydrocarbons, Benzene Plus Cyclohexane, Systems, Mixtures, Sorption, Isotherms, Soils, 1-Propanol, Sediments

Madsen, J., Pedersen, K.S. and Michelsen, M.L. (2000), Modeling of structure H hydrates using a Langmuir adsorption model. *Industrial & Engineering Chemistry Research*, **39** (4), 1111-1114.

Full Text: [I\Ind Eng Che Res39, 1111.pdf](I/Ind%20Eng%20Che%20Res39,%201111.pdf)

Abstract: A Langmuir adsorption model is used to represent the conditions at which structure H hydrates may form. The two smaller cavities of structure H hydrates are of similar size and are modeled using the same Langmuir constants. Parameters in a simple two-parameter Langmuir expression have been estimated for methane and nitrogen as guest molecules of the smaller cavities and for 12 possible guest molecules of the large cavity. The latter ones are all hydrocarbons with from 5 to 8 carbon atoms. Experimental hydrate formation temperatures are correlated with an average absolute temperature deviation of 0.15 K. Hydrate formation data for two ternary mixtures not used in the parameter estimation are modeled with approximately the same accuracy.

Keywords: Flash Calculations, Phase-Equilibrium, Methane, State

Cunill, F., Iborra, M., Fite, C., Tejero, J. and Izquierdo, J.F. (2000), Conversion, selectivity, and kinetics of the addition of isopropanol to isobutene catalyzed by a macroporous ion-exchange resin. *Industrial & Engineering Chemistry Research*, **39** (5), 1235-1241.

Full Text: [I\Ind Eng Che Res39, 1235.pdf](I/Ind%20Eng%20Che%20Res39,%201235.pdf)

Abstract: Equilibrium conversion, selectivity, and kinetics of the liquid-phase synthesis of isopropyl tert-butyl ether (IPTBE) from 2-propanol and isobutene were studied experimentally over a commercial ion-exchange resin in the temperature range 303-353 K at 1.6 MPa. The isobutene equilibrium conversion hardly changes upon varying the initial molar ratio of 2-propanol to isobutene. The IPTBE yield is very high and is independent of temperature for an initial molar ratio for 2-propanol to isobutene greater than 2. The best kinetic model stems from a mechanism in which 2-propanol, adsorbed on one center, reacts either with isobutene adsorbed on one adjacent center or with isobutene from solution to give the ether adsorbed on one center. The surface reaction is the rate-limiting step, in which three centers take part. An apparent activation energy of 75.5 kJ.mol-1 was obtained.

Keywords: Tert-Butyl Ether, Liquid-Phase Synthesis, Alcohols, Olefins, Etherification, 2-Propanol, Benzene

Serre, S.D. and Silcox, G.D. (2000), Adsorption of elemental mercury on the residual carbon in coal fly ash. *Industrial & Engineering Chemistry Research*, **39** (6), 1723-1730.

Full Text: [I\Ind Eng Che Res39, 1723.pdf](I/Ind%20Eng%20Che%20Res39,%201723.pdf)

Abstract: The injection of large quantities of pulverized activated carbon is one method used to remove elemental mercury (Hg0) from flue gas streams. The purpose of this project was to determine whether the unburned carbon that remains in coal fly ash could be used as an inexpensive and effective replacement for activated carbon. Bench-scale tests were conducted at conditions representative of those found in the flue gas trains of coal-fired power plants and municipal waste incinerators. The temperatures and concentrations ranged from 121 to 177 degrees C and from 0.019 to 11.7 mg of Hg/m3. Two types of data were obtained: equilibrium data suitable for obtaining adsorption isotherms and breakthrough data suitable for obtaining adsorption kinetics. Adsorbed-phase concentrations were as high as 600 ppm. Forward adsorption rate constants were approximate to 0.06-2.3 m3/g/s for particle sizes and carbon contents ranging from 59 to 206 µm and from 2% to 36%. Mathematical models were developed to simulate the capture of Hg0 in flue gas ducts and in baghouses. The results of the simulations indicate that a negligible amount of Hg0 can be adsorbed by a dilute suspension of fly ash. The best option for controlling Hg0 emissions using fly ash appears to be injection in pulses prior to a baghouse.

Keywords: Power-Plants

Di Blasi, C. and Branca, C. (2000), The effects of water leaching on the isothermal degradation kinetics of straw. *Industrial & Engineering Chemistry Research*, **39** (7), 2169-2174.

Full Text: [I\Ind Eng Che Res39, 2169.pdf](I/Ind%20Eng%20Che%20Res39,%202169.pdf)

Abstract: The degradation kinetics of untreated and rain-leached (wheat) straw have been investigated under isothermal conditions (500-650 K) in a weakly oxidative atmosphere. For both cases, weight loss curves follow a two reaction zone mechanism. In the first, fast volatile release results in about 20-70% solid conversion, followed by further slow solid devolatilization. A semiglobal kinetic mechanism is proposed and the kinetic constants are estimated for the two reaction zones and the formation of the volatile and the solid-phase product classes. For both cases, the activation energy of the first zone is higher than that of the second, but leaching significantly reduces the reaction rates at low temperatures for the first zone and high temperatures for the second zone.

Keywords: Pyrolysis Characteristics, Thermal-Decomposition, Biomass, Cellulose, Release

Xu, G.W., Luo, G.H., Akamatsu, H. and Kato, K. (2000), An adaptive sorbent for the combined desulfurization/denitration process using a powder-particle fluidized bed. *Industrial & Engineering Chemistry Research*, **39** (7), 2190-2198.

Full Text: [I\Ind Eng Che Res39, 2190.pdf](I/Ind%20Eng%20Che%20Res39,%202190.pdf)

Abstract: This study is devoted to examining an adaptive sorbent for the combined desulfurization/ denitration (DeSOX/DeNOX) process reported in work by Xu et al. (Trans. Inst. Chem. Eng. 1999, 77, Part B, 77-87). The so-called powder-particle fluidized bed (PPFB) is used by the process so that SOX in flue gas is absorbed by a continuously supplied fine DeSOX sorbent and NOx is reduced to N2 by ammonia under the catalysis of a coarse DeNOX catalyst, the fluidization medium particles (FMP). Experiments were conducted in a laboratory-scale PPFB reactor by using model flue gases containing SO2 and NO. It was found that the sodium carbonate supported by fine alumina particles (Na2CO3/Al2O3) had not only a high efficiency in absorbing SO2 but also little negative effect upon the simultaneous NOx reduction of the process. Using a DeNOX catalyst, such as V2O5. WO3/TiO2 or WO3/TiO2, to catalyze the DeNOX reactions, high SO2 absorption and NO reduction in excess of 95% were achieved for model gases free of CO2 at stoichiometric ratios of SO2 to sorbent (Na/S = 2.0) and NH3 to NO (NH3/NO = 1). As for the simulated flue gas SO2-NO-H2O-N2-air with an oxygen fraction of 2 vol % and a water vapor fraction of 5 vol %, such high removals of SO2 and NO were found available even in a shallow PPFB with a static catalyst packing height of 0.1 m. By using silica sand as FMP, the pure SO2 absorption by the sorbent Na2CO3/Al2O3 was also examined with respect to various influential factors, such as reaction temperature (523-673 K), flue gas composition (oxygen fraction and water vapor fraction), sorbent diameter, and operating conditions (gas velocity and FMP bed height).

Keywords: Flue-Gas, Spouted Bed, Removal, SO2, Efficiency, Nox

Beltrán, F.J., García-Araya, J.F. and Álvarez, P.M. (2000), Sodium dodecylbenzenesulfonate removal from water and wastewater. 1. Kinetics of decomposition by ozonation. *Industrial & Engineering Chemistry Research*, **39** (7), 2214-2220.

Full Text: [I\Ind Eng Che Res39, 2214.pdf](I/Ind%20Eng%20Che%20Res39,%202214.pdf)

Abstract: Ozonation experiments were conducted to investigate the sodium dodecylbenzenesulfonate (NaDBS) removal from aqueous solution and domestic wastewater. The influence of pH and tert-butyl alcohol concentration, a known scavenger of hydroxyl radicals, on the ozonation rate was observed. The degradation rate was especially fast at pH 10 in the absence of hydroxyl radical scavengers. The rate constants of the reactions NaDBS-ozone and NaDBS-hydroxyl radical were found to be 3.68 and 1.16×1010 M-1.s-1, respectively. Organic matter in wastewater competes with NaDBS for both dissolved ozone and hydroxyl radical, resulting in a decrease in the overall removal rate of the surfactant. COD and TOC were not completely removed from the wastewater due to an ozone-resistant fraction which remained after the treatment. Nevertheless, the ability of ozone to cause alteration in the molecular structures of dissolved compounds resulted in an increase of the wastewater biodegradability, demonstrated by the increase of the BOD5/COD ratio. The contributions of the direct and free radical reactions to the oxidation of NaDBS were evaluated in percentages of pollutant removal.

Keywords: Treatment-Plant, Rate Constants, Ozone, Surfactants, Biodegradation, Oxidation, Sulfonate

Beltrán, F.J., García-Araya, J.F. and Álvarez, P.M. (2000), Sodium dodecylbenzenesulfonate removal from water and wastewater. 2. Kinetics of the integrated ozone-activated sludge system. *Industrial & Engineering Chemistry Research*, **39** (7), 2221-2227.

Full Text: [I\Ind Eng Che Res39, 2221.pdf](I/Ind%20Eng%20Che%20Res39,%202221.pdf)

Abstract: A batch-activated sludge process (AS) has been applied to eliminate sodium dodecylbenzenesulfonate (NaDBS), a linear alkylbenzenesulfonate (LAS) compound, from synthetic and real domestic wastewater. The kinetics of surfactant biodegradation was best described by first-order kinetics with rate constants of 1.28 and 1.15 L.(g VSS.day)-1 for synthetic and real domestic wastewater, respectively. The effect of preozonation on the overall surfactant and COD removal rates was also studied. The results indicated that treatment by combined ozone-AS leads to negligible foam ability and low residual surfactant concentration and COD in the treated effluent. Acclimation of a mixed culture to ozonated products was beneficial to highly improve biodegradation rates after preozonation. Thus, when applying ozone at a dose of 100 mg.L-1, the first-order surfactant biodegradation rate constant increased up to 1.79 and 3.09 L (g VSS day)-1 for synthetic and real wastewater, respectively. Continuous experiments of ozonation followed by activated sludge of synthetic wastewater were also carried out, and the reactor performances were compared to those obtained from the application of the available kinetic data (derived from batch experiments) to the operating conditions. Good agreement between experimental and calculated data confirmed the reliability of the model.

Keywords: Mass-Transfer, Surfactants, Ozonation

Lee, V.K.C., Porter, J.F. and McKay, G. (2000), Development of fixed-bed adsorber correlation models. *Industrial & Engineering Chemistry Research*, **39** (7), 2427-2433.

Full Text: [2000\Ind Eng Che Res39, 2427.pdf](2000/Ind%20Eng%20Che%20Res39,%202427.pdf)

Abstract: The adsorption of three single-component acid dyes onto activated carbon has been studied using fixed-bed adsorption. Conventional simplified design methods, namely, bed depth service time (BDST) and empty-bed residence time (EBRT) models, were applied to the experimental breakthrough curve data but failed to correlate these data. Consequently, modifications have been developed that enable modified BDST and EBRT models to be applied and to correlate the experimental data very accurately. The modification is based on an expression to correlate the residence time in the adsorption bed with the time-dependent fraction degree of saturation of the bed. This model is particularly suited to predicting the performance of fixed-bed adsorbers when the system requires a long period of time to reach equilibrium or when several fixed-bed adsorbers are used in series.

Keywords: Aqueous-Solutions, Activated-Carbon, Adsorption, Removal, Equilibrium, Dyes, Optimization, Dyestuffs, Systems, Silica

Mota, J.P.B. and Rodrigo, A.J.S. (2000), Calculations of multicomponent adsorption-Column dynamics combining the potential and ideal adsorbed solution theories. *Industrial & Engineering Chemistry Research*, **39** (7), 2459-2467.

Full Text: [I\Ind Eng Che Res39, 2459.pdf](I/Ind%20Eng%20Che%20Res39,%202459.pdf)

Abstract: An efficient method for combining the Adsorption Potential and Ideal Adsorbed Solution theories in simulation models of multicomponent adsorption columns is presented. The main advantage of this dual-theory approach is that it reduces the number of equilibrium measurements required to predict the breakthrough profiles. The validity of the dual-theory equilibrium procedure is illustrated by embedding it in a dynamic-column breakthrough model of adsorption of ternary mixtures of methane, ethane, and propane on activated carbon. The resulting dynamic model was found to be computationally efficient, and good agreement was obtained between the predicted and experimental breakthrough curves. It is shown that the two theories can be coupled in such a way as to provide a simple and practically useful method of correlating multicomponent adsorption equilibrium in dynamic process modeling studies.

Keywords: Activated Carbon, Hydrocarbon Adsorption, Binary Adsorption, Myers-Prausnitz, High-Pressure, Gas-Mixtures, Equation, Equilibria, Vapors, Isotherms

Vegliò, F., Beolchini, F. and Barba, D. (2000), Experimental study and simulation on the biosorption of copper(II) in membrane reactors: A preliminary study. *Industrial & Engineering Chemistry Research*, **39** (7), 2480-2484.

Full Text: [I\Ind Eng Che Res39, 2480.pdf](I/Ind%20Eng%20Che%20Res39,%202480.pdf)

Abstract: The general and main goal of this work is the development of know-how for one of the most innovative technologies aimed toward wastewater treatment: *biosorption* is considered in the literature as an effective technology for the removal of heavy metals due to human activities (mining, metallurgy, electronic and galvanic industries, oil and petroleum, etc.). The key factors in the process development of this technology are as follows: use of economical raw biomass obtained as a byproduct of existing chemical or biotechnological processes; development of suitable systems for biomass immobilization and for regeneration, to allow further use of biomass. The present work summarizes some results obtained in this field, in particular, about the biosorption process in a membrane reactor. A mathematical model has been proposed to describe the process. Both experimental and simulated results showed the technical feasibility of the process in the wastewater treatment, even if some disagreement between experimental and simulated data has been highlighted.

Pöpken, T., Götze, L. and Gmehling, J. (2000), Reaction kinetics and chemical equilibrium of homogeneously and heterogeneously catalyzed acetic acid esterification with methanol and methyl acetate hydrolysis. *Industrial & Engineering Chemistry Research*, **39** (7), 2601-2611.

Full Text: [I\Ind Eng Che Res39, 2601.pdf](I/Ind%20Eng%20Che%20Res39,%202601.pdf)

Abstract: The reaction kinetics and chemical equilibrium of the reversible esterification of methanol with acetic acid were investigated. This system is of major importance as a model reaction for reactive distillation. The reaction has been catalyzed both homogeneously by acetic acid itself and heterogeneously by an acidic ion-exchange resin (Amberlyst 15). The chemical equilibrium composition was measured for various temperatures and starting compositions of the reactants and products. Kinetic information was obtained at temperatures between 303.15 and 343.15 K at various starting compositions covering concentration ranges from-the stoichiometric regime to the dilute regions. Both the esterification and the hydrolysis reaction were investigated to yield a model which is applicable for any starting composition. The homogeneous reaction has been described with a simple power-law model. The use of activities in the kinetic model instead of mole fractions results in a much smaller residual error. To compare pseudohomogeneous and adsorption-based kinetic models for the heterogeneously catalyzed reaction, independent binary liquid adsorption experiments were used to fit the adsorption constants to keep the number of adjustable parameters the same for each model. The use of activities instead of mole fractions results in a slight improvement of the kinetic model only, while incorporating adsorption information into the kinetic model results in a much better fit. The chemical equilibrium composition calculated from the kinetic model is in agreement with the measured chemical equilibrium.

Keywords: Distillation Column

Musmarra, D. (2000), Influence of particle size and density on the jet penetration length in gas fluidized beds. *Industrial & Engineering Chemistry Research*, **39** (7), 2612-2617.

Full Text: [I\Ind Eng Che Res39, 2612.pdf](I/Ind%20Eng%20Che%20Res39,%202612.pdf)

Abstract: Measurements of gas jet penetration length in fluidized beds were performed by using a technique previously developed, to investigate the influence of solids properties and of nozzle gas and fluidization velocities. Results show that the lighter and the finer are the solids, the larger is the jet penetration length. A nondimensional correlation is proposed because the experimental findings are not properly described by literature correlations.

Keywords: Pressure Signal Analysis, Grid Zone, Behavior, Height, Depth

Goodner, M.D., DeSimone, J.M., Kiserow, D.J. and Roberts, G.W. (2000), An equilibrium model for diffusion-limited solid-state polycondensation. *Industrial & Engineering Chemistry Research*, **39** (8), 2797-2806.

Full Text: [I\Ind Eng Che Res39, 2797.pdf](I/Ind%20Eng%20Che%20Res39,%202797.pdf)

Abstract: A model for unsteady-state solid-state polycondensation (SSP) is developed and is applied to the polymerization of poly(bisphenol A carbonate) and poly(ethylene terephthalate) (PET). The model assumes that diffusion of the reaction condensate in the solid polymer is the rate-limiting step in the overall polymerization kinetics. Therefore, the reversible polycondensation reaction is at local equilibrium throughout the polymer particle at all times. The model is applicable to the three general types of step-growth polymerization: AB, A(2), and A(2) + B-2 polycondensation. Through comparison with the predictions of a full kinetic model for polycarbonate synthesis, it is demonstrated that the equilibrium model provides an upper bound on molecular weight and its rate of increase. Model predictions are also compared to experimental data for PET SSP. These comparisons show that the equilibrium model provides a useful. tool for understanding the effects of temperature and particle size as well as for establishing a lower bound on the diffusion coefficient of the reaction condensate in the solid polymer.

Keywords: Polyethylene Terephthalate, Comprehensive Model, Ethylene-Glycol, Polymerization, Poly(Ethylene-Terephthalate), Kinetics, Polycarbonates, Reactors, Nylon-6

Torget, R.W., Kim, J.S. and Lee, Y.Y. (2000), Fundamental aspects of dilute acid hydrolysis/fractionation kinetics of hardwood carbohydrates. 1. Cellulose hydrolysis. *Industrial & Engineering Chemistry Research*, **39** (8), 2817-2825.

Full Text: [I\Ind Eng Che Res39, 2817.pdf](I/Ind%20Eng%20Che%20Res39,%202817.pdf)

Abstract: Previous kinetic modeling and bench-scale demonstration efforts using batch, percolation, or plug-flow reactors for the dilute sulfuric acid hydrolysis of cellulose have concluded that glucose yields above 70% of theoretical were not possible. This has been explained to be a result of reactions involving glucose or the cellulose itself in a destructive manner, as well as hydrolyzed soluble oligomers which have been modified chemically so as not to release glucose. However, recently, we have demonstrated that near-quantitative yields of glucose from cellulose can indeed be obtained using a bench-scale shrinking-bed percolation reactor in which an internal spring compresses the biomass as the reaction progresses; The present study was initiated to gain a fundamental understanding of the kinetic sequences involved in these high yields. Three reactor configurations (batch, percolation, and shrinking-bed percolation) were studied using similar hydrolysis severities to begin addressing chemical, physical, and hypothesized boundary layer phenomenon governing rate-limiting steps of glucose release from two prehydrolyzed yellow poplar cellulosic substrates. The characteristics of the logarithmic release of glucose as well as the logarithmic disappearance of cellulose as a linear function of time were found to be reactor dependent. Use of a percolation reactor was described where the initial hydrolysis rate constant for cellulose using 0.07% w/w sulfuric acid at 225 degrees C is enhanced Et-fold compared to a batch reactor. Additionally, when lower hydrolysis severities are used for hydrolyzing yellow poplar cellulose in batch mode, biphasic kinetics were observed. Several hypothesized boundary layer resistances, such as structured water, viscosity, and re-hydrogen bonding of released glucose, will be suggested as diffusion resistances for released glucose to the bulk medium, which would be a function of the reactor configuration and define potential glucose yields.

Keywords: Plug Flow Reactor, Sulfuric-Acid, Biomass, Saccharification, Lignocellulose, Fermentation

Prasad, M., Saxena, S., Amritphale, S.S. and Chandra, N. (2000), Kinetics and isotherms for aqueous lead adsorption by natural minerals. *Industrial & Engineering Chemistry Research*, **39** (8), 3034-3037.

Full Text: [I\Ind Eng Che Res39, 3034.pdf](I/Ind%20Eng%20Che%20Res39,%203034.pdf)

Abstract: The low grade (<15% P2O5) carbonatic rock phosphate and hydroxy aluminosilicate based mineral (pyrophyllite) of Madhya Pradesh (India) were investigated as adsorbents for their possible application for the removal of aqueous lead under static system. The kinetics and effect of temperature on adsorption of lead ions on the above two natural minerals have been studied. The adsorption process follows first-order kinetics and the rate of adsorption and film transfer coefficients are observed to decrease with increase in initial concentration of lead ions in solutions. It has been found that these natural minerals are effective in removing 65-99% of lead ions from 5.0 to 500 mg/L lead solutions. The Langmuir adsorption isotherm was used to represent experimental data for carbonatic rock phosphate whereas the Freundlich adsorption isotherm was found suitable to represent data for pyrophyllite. The adsorption process is found to be endothermic in the case of pyrophyllite and exothermic in the case of carbonatic rock phosphate.

Keywords: Heavy-Metals, Immobilization, Removal

Lu, H.L., Bie, R.S., Liu, W.T., Li, B.X. and Yang, L.D. (2000), Computations of a circulating fluidized-bed boiler with wide particle size distributions. *Industrial & Engineering Chemistry Research*, **39** (9), 3212-3220.

Full Text: [I\Ind Eng Che Res39, 3212.pdf](I/Ind%20Eng%20Che%20Res39,%203212.pdf)

Abstract: A steady-state model of a coal-fired circulating fluidized-bed (CFB) boiler considering the hydrodynamics, heat transfer, and combustion is presented. This model predicts the flue gas temperature, the chemical gas species (O2, H2O, CO, CO2, and SO2), and char concentration distributions in both, the axial and radial location along the furnace including the bottom and upper portion. The model of the gas-solid flow in the dilute regime calculates solid volume concentrations and local solid velocity. The model was validated against experimental data generated in a 35 t/h commercial CFB boiler with a low circulation ratio.

Keywords: Reactors, Risers, Hydrodynamics, Combustion, Gas

Kostoglou, M., Andritsos, N. and Karabelas, A.J. (2000), Modeling thin film CdS development in a chemical bath deposition process. *Industrial & Engineering Chemistry Research*, **39** (9), 3272-328.

Full Text: [I\Ind Eng Che Res39, 3272.pdf](I/Ind%20Eng%20Che%20Res39,%203272.pdf)

Abstract: The chemical bath deposition (CBD) process is currently favored for the preparation of CdS thin films of commercial interest. A chemical engineering type analysis of the CBD process is carried out in this paper to aid its design and optimization. Model equations are developed (based on a population balance formulation) for the temporal variation of reactant concentrations as well as of the solid phase, both in the bulk and on the substrate. A possible sequence of elementary mechanisms (i.e., nucleation, surface reaction, etc.) is suggested, and the resulting comprehensive model is solved numerically. Computational results show that the model is consistent with available experimental data on film thickness evolution. Furthermore, the influence of the process parameters on the results is studied theoretically and discussed extensively for several cases. The model may prove very useful for optimization of the CBD process with respect to its design variables (reactant concentrations, process time, etc.) as well as for efficient experimental determination of presently uncertain or missing parameter values.

Keywords: Particle-Size Distribution, Population Balance, Nucleation, Precipitation, Coagulation, Moments, Crystallization, Mechanism, Dynamics, Growth

Amanullah, M., Viswanathan, S. and Farooq, S. (2000), Equilibrium, kinetics, and column dynamics of methyl ethyl ketone biodegradation. *Industrial & Engineering Chemistry Research*, **39** (9), 3387-3396.

Full Text: [I\Ind Eng Che Res39, 3387.pdf](I/Ind%20Eng%20Che%20Res39,%203387.pdf)

Abstract: Equilibrium and kinetic studies of methyl ethyl ketone (MEK) adsorption in compost and granular activated carbon (GAC), the reaction rate and selectivity of microorganisms for MEK biodegradation, and the role of the adsorption capacity of the support medium on biofilter dynamics are investigated in this study. Experiments on MEK degradation using biofilters with either Rhodococcus sp. or a mixed culture showed comparable results, indicating no advantage of a pure culture of Rhodococcus sp. The equilibrium isotherm of MEK in compost is linear in the entire range of concentration typically encountered in biofilters, but on GAC the isotherm is nonlinear. Investigation on adsorption kinetics suggests that the mass transfer is macropore-controlled in both compost and GAG. However, in compost the transport appears to be by molecular diffusion, whereas in GAC it is by a combination of molecular, Knudsen, and surface diffusion. Experimental results show that GAC is better than compost in terms of pollutant removal and handling of the fluctuating input load. A linear driving force approximation is used to describe the transport of solute from the gas phase to the support phase. The resulting linear driving force biofiltration model, using independently measured equilibrium and kinetic parameters, appears adequate for describing the experimental results of biofilter dynamics.

Keywords: Waste Air Biotreatment, Surface-Diffusion, Biological Filter, Activated Carbon, Steady-State, Biofiltration, Adsorption, Removal, Model, Biofilters

Castro, J.B., Bonelli, P.R., Cerrella, E.G. and Cukierman, A.L. (2000), Phosphoric acid activation of agricultural residues and bagasse from sugar cane:Influence of the experimental conditions on adsorption characteristics of activated carbons. *Industrial & Engineering Chemistry Research*, **39** (11), 4166-4172.

Full Text: [I\Ind Eng Che Res39, 4166.pdf](I/Ind%20Eng%20Che%20Res39,%204166.pdf)

Abstract: Activated carbons from two different types of sugar cane wastes, agricultural residues and bagasse, were prepared by phosphoric acid activation varying the carbonization temperature (300-600 degreesC), the weight ratio of phosphoric acid to precursor (R = 1-2.5), and carbonization time (0-3 h). Surface properties of the resulting carbons were markedly dependent on the precursor and a combined effect of the conditions employed. Bagasse carbons showed higher surface area and pore volume than those from agricultural residues. Maximum surface areas of around 1100 and 780 m2/g were respectively attained. Temperature above 500 degreesC, impregnation ratio higher than 2, or prolonged carbonization beyond Ih led to reduction in porosity development. Selected carbons from both wastes with relatively large mean pore radius showed good ability to decolorize a diluted solution of synthetic melanoidin, used as a model of molasses wastewater. Iodine number between 608 and 746 and Methylene blue uptake of 213-261 (mg/g) were determined for the selected samples.

Keywords: By-Products, Coconut Shell, Waste, Decolorization, Stones

Ching, C.B., Arlt, W., Lisso, M. and Wozny, G. (2000), Kinetic and equilibrium study of the enantioseparation of fenoprofen in a batch setup. *Industrial & Engineering Chemistry Research*, **39** (11), 4365-4369.

Full Text: [I\Ind Eng Che Res39, 4365.pdf](I/Ind%20Eng%20Che%20Res39,%204365.pdf)

Abstract: The bed voidage, axial dispersion, and kinetic and isotherm parameters for the chromatographic enantioseparation of racemic Fenoprofen, using cellulose ester as the chiral stationary phase and 2-propanol/hexane/acetyl alcohol as the mobile phase, were evaluated by moment analyses on the basis of equilibrium theory and the linear driving force model. The peak-fitting method was used to identify the coefficients of the competitive Langmuir isotherm for both enantiomers. For this reason and for the validation of the model parameters, a simulation program was developed. The simulated results describe the experimental data well. On the basis of the isotherm parameters and the equilibrium theory, the process region for the simulated moving bed (SMB) process was identified. Changes of the process region will be discussed by considering fluctuations in the feed concentration and uncertainties in the determined capacity factor.

Keywords: Countercurrent

Fang, Z., Xu, S.K. and Koziński, J.A. (2000), Behavior of metals during combustion of industrial organic wastes in supercritical water. *Industrial & Engineering Chemistry Research*, **39** (12), 4536-4542.

Full Text: [I\Ind Eng Che Res39, 4536.pdf](I/Ind%20Eng%20Che%20Res39,%204536.pdf)

Abstract: De-inking solid residue (DISR) doped with nitrates of 2000 mg/kg of Pb, Cd, and Cr was burned in supercritical water in a batch reactor. Combustion runs were carried out under supercritical water conditions: 30.6 MPa, 450 or 525 degreesC, and 17.1% or 65.7% excess oxygen. The run time varied between 5 and 30 min. In all runs, more than 99.2% (up to 100%) of the Pb precipitated to ash, with leachability varying from 0.5% to 7.3% and decreasing with increasing run time and temperature. In runs at 450 degreesC, the soluble Cd concentration showed little or no change, but its ash’s leachability dropped when more oxygen was added. At 65.75 excess oxygen, when temperature was increased from 450 to 525 degreesC, the Cd concentration and ash leachability declined, and a downward trend appeared with longer run time. In runs at 450 degreesC and 17.1% excess oxygen, the soluble Cr concentration increased with time from 4.1% (5 min) to 19.2% (30 min). When 65.7% oxygen was applied, it declined to 12.6% at 30 min, which was followed by an increase from 15.0% (5 min) to 37.5% (15 min). In the runs with 65.7% oxygen, as the temperature went up from 450 to 525 degreesC, the soluble Cr concentration rose to 26.1% at 5 min and subsequently showed a trend similar to that observed for the runs at 450 degreesC. At 30.6 MPa, 525 degreesC, and a 30-min run time, 100% of the Pb, 97.6% of the Cd, and 87.3% of the Cr were converted to an insoluble substance. Only 0.5% of the Pb, 0.6% of the Cd and 0.8% of the Cr in ash were leached. Tests with 20,000 mg/kg Pb, Cd, and Cr were conducted under the same conditions (pressure/temperature/time). Only 0.03% of the Pb but 82.0% of the Cd and 79.4% of the Cr remained soluble. It was found that CO2 and acetate from organics combustion could help to remove heavy metals via formation of insoluble carbonate salts. X-ray diffraction spectra indicated the presence of PbCrO4 and Al2Si2O5(OH)4 in the ash. Electron microprobe results showed a close connection between Pb and Cr but no relation between Pb and Cd in the ash. The main solid products were CdO, CdCO3, CrO2, HCrO2, PbCrO4, PbCO3 and PbOx. In general, the “combustion” of DISR in supercritical water showed an effective removal of heavy metals.

Keywords: Hydrothermal Crystallization, Oxidation, Incineration, Particles

Cocero, M.J., Alonso, E. and Lucas, S. (2000), Pilot plant for soil remediation with supercritical CO2 under quasi-isobaric conditions. *Industrial & Engineering Chemistry Research*, **39** (12), 4597-4602.

Full Text: [I\Ind Eng Che Res39, 4597.pdf](I/Ind%20Eng%20Che%20Res39,%204597.pdf)

Abstract: In the Chemical Engineering Department at the University of Valladolid (Spain), a pilot plant for soil remediation with supercritical CO2 extraction and subsequent adsorption on activated carbon has been developed. Soil polluted with hydrocarbons from a petrochemical plant has been treated in order to reduce the pollution level below legal limits. Operational parameters such as extraction temperature, solid particle size, and solvent ratio were optimized. Experiments were conducted at a 30-60 degreesC extraction temperature, combined with a temperature of 50 degreesC for the adsorption onto activated carbon. The solvent flow rate was varied between 5 and 15 kg/h, and the effect of particle size in the process was studied for particles with dp < 0.425 mm. Several experiments have shown that a gradient in temperature is necessary between the extraction step and the adsorption step and that extraction temperature should be lower than adsorption temperature. Results show that temperature increases improved both initial rates of extraction and total recoveries, maintaining in every case the gradient mentioned above. The solubility of the contaminant in the SCF does not limit SFE, and diffusion into the CO2 phase was found to be the limiting step in the extraction rate. Results show an optimal extraction temperature of 40 <degrees>C, particle size of 0.425 mm, and solvent ratio of 15.8 kg CO2[(kg soil) h]. A comparison of this soil with the same soil contaminated with diesel oil in the laboratory has been made. The effect of particle size is particularly strong for the soil recently spiked in the laboratory; in the studied range of particle sizes, the bigger the particles, the better the extraction. That can be explained by the fact that, for aged soil, pollutants are more strongly adsorbed on the soil and the effect of particle size is not as important as the bond forces.

Keywords: Carbon-Dioxide Extraction

Sicardi, S., Manna, L. and Banchero, M. (2000), Comparison of dye diffusion in poly(ethylene terephthalate) films in the presence of a supercritical or aqueous solvent. *Industrial & Engineering Chemistry Research*, **39** (12), 4707-4713.

Full Text: [I\Ind Eng Che Res39, 4707.pdf](I/Ind%20Eng%20Che%20Res39,%204707.pdf)

Abstract: Impregnation of polymers with supercritical CO2 appears to be a promising technique in the area of polymer processing. The main aim of this paper is to measure the diffusion coefficients of a solute (a dyestuff) permeating a poly(ethylene terephthalate) (PET) film in a supercritical impregnating system at different working conditions and to compare the results with similar data obtained with the same solute in the same material but in a traditional aqueous system. The experimental technique used is that of the “film roll method” for the experiments conducted in the supercritical system and has already been tested in a previous work. For the aqueous system, the sorption kinetics of the dyestuff on plane PET sheets has been measured. The results confirm the high gain in the rate of diffusion obtained with the supercritical impregnating system, related to the high plasticizing power of supercritical CO2 toward synthetic polymers. Interesting considerations come also from the comparison of the data obtained by operating with supercritical CO2 at different working pressures and temperatures and in the presence of a proper modifier (ethanol).

Keywords: Nonionic Azo Dyes, Carbon-Dioxide, Poly(Ethylene-Terephthalate), Nylon-6, CO2, Sorption

del Valle, E.M.M. and Galán, M.A. (2001), Specific and nonspecific adsorption in affinity chromatography. Part I. Preliminary and equilibrium studies. *Industrial & Engineering Chemistry Research*, **40** (1), 369-376.

Full Text: [I\Ind Eng Che Res40, 369.pdf](I/Ind%20Eng%20Che%20Res40,%20369.pdf)

Abstract: The amount of enzyme adsorbed at equilibrium by hydrophobic and hydrophilic bonds or retained inside the adsorbent was studied for asparaginase on Sepharose 4B, Sepharose 4B activated with CNBr, activated Sepharose 4B with hexamethylene diamine as a spacer arm and activated Sepharose 4B with Hexamethylene diamine and L-(+)-chlorosuccinamic acid as the spacer arm and ligand, respectively, in a batch reactor for the range of temperatures 298-302 K, the range of pH 7.5-8.6, and for different ionic strengths (0.0-1.5 M NaCl). Adsorption increased with pH and decreased with temperature. With respect to ionic strength, adsorption increased until an I value of 0.05 M NaCl. A change in the adsorption process was observed when the ionic strength was steadily decreased. The equilibrium data were correlated using a semiquantitative theory in which electrostatic and hydrophobic interactions between enzyme and ligand were considered. This correlation shows that hydrophobic effects increase with temperature, in very good agreement with the experimental data.

Keywords: Size

del Valle, E.M.M. and Galán, M.A. (2001), Specific and nonspecific adsorption in affinity chromatography. Part II. Kinetic and mass transfer studies. *Industrial & Engineering Chemistry Research*, **40** (1), 377-383.

Full Text: [I\Ind Eng Che Res40, 377.pdf](I/Ind%20Eng%20Che%20Res40,%20377.pdf)

Abstract: The partition coefficient, adsorption equilibrium inside particles, adsorption kinetics, and mass transfer effects have keen studied for asparaginase on Sepharose 4B activated with cyanogen bromide and with Hexamethylene diamine and L-(+)-chlorosuccinamic acid as the spacer arm and ligand, respectively, for temperature and pH ranges of 298-302 K and 7.5-8.6, respectively, and for an ionic strength value of 0.05 M NaCl. A dynamic model has been developed to describe the adsorption. This model allowed us to obtain values of the diffusion coefficients and the forward surface interaction rate constants (De approximate to 10-8 cm2/s, k1 approximate to 10-4 mL mg-1s-1). The forward surface interaction rate constant does not vary with the pH; however, an Arrhenius-type variation was observed with temperature. The values obtained for these constants range between 3.78×10-4 and 6.80×10-4 mt mg-1s-1. The diffusion coefficient increases with pH (7.5-8.6). Additionally, within the temperature range studied, this coefficient was seen to follow Arrhenius-type behavior, allowing for a determination of the activation energies of the diffusion process for the different pH values (7.95-16.03 kcal/mol).

Keywords: Proteins

Hu, X., Qiao, S., Zhao, X.S. and Lu, G.Q. (2001), Adsorption study of benzene in ink-bottle-like MCM-41. *Industrial & Engineering Chemistry Research*, **40** (3), 862-867.

Full Text: [I\Ind Eng Che Res40, 862.pdf](I/Ind%20Eng%20Che%20Res40,%20862.pdf)

Abstract: The pore-opening size of MCM-41 is tailored to be in the microporous region using a chemical vapor deposition technique for selective tailoring. Although the pore opening is narrowed, the internal pore body of MCM-41 remains unchanged so the pore volume retains a substantial portion (80%) of its original value. The adsorption equilibrium of nitrogen and benzene in the modified MCM-41 shows a type I isotherm, which significantly improves the adsorption performance of MCM-41 for low-concentration volatile organic compounds. The adsorption kinetics of benzene in the modified MCM-41 is also studied.

Gang, D.C., Hu, W.Q., Banerji, S.K. and Clevenger, T.E. (2001), Modified poly(4-vinylpyridine) coated silica gel. Fast kinetics of diffusion-controlled sorption of Chromium(VI). *Industrial & Engineering Chemistry Research*, **40** (4), 1200-1204.

Full Text: [I\Ind Eng Che Res40, 1200.pdf](I/Ind%20Eng%20Che%20Res40,%201200.pdf)

Abstract: A new sorbent has been prepared by coating alkyl quaternized poly(4-vinylpyridine) (PVP) on the high surface area of silica gel. The resulting granular sorbent was used to remove Cr(VI) from water. Batch experiments mere conducted to determine the kinetics and sorption rate. The research demonstrated that the modified PVP coated silica gel (referred to as coated gel) could successfully remove chromium(VI) from solution and that the sorbent provided fast kinetics. A finite-bath diffusion-control model with changing bulk concentration was derived analytically for application to the coated gel sorption of Cr(VI). This model fitted the experimental data well. The sorption kinetics on modified PVP coated gel was found to be diffusion-controlled with a value of 5.8×10-7 cm2/s for the product of the distribution coefficient and the effective diffusivity in the sorption of Cr(VI) on the coated silica gel.

Keywords: Coating, Concentration, Cr(VI), Distribution, Distribution Coefficient, Kinetics, Metals, Model, Modified, Recovery, Removal, Research, Silica, Silica Gel, Sorption, Sorption Kinetics, Surface, Surface Area, Wastes, Water

Vincent, T. and Guibal, E. (2001), Cr(VI) extraction using Aliquat 336 in a hollow fiber module made of chitosan. *Industrial & Engineering Chemistry Research*, **40** (5), 1406-1411.

Full Text: [I\Ind Eng Che Res40, 1406.pdf](I/Ind%20Eng%20Che%20Res40,%201406.pdf)

Abstract: Chitosan hollow fiber modules have been prepared and tested for solvent extraction of Cr(VI) from dilute solutions using Aliquat 336 as the carrier. Chitosan membranes serve as a reactive barrier between aqueous and organic phases: both passive and active transport through the membranes are suspected to occur, depending on the experimental conditions and the characteristics of the membrane. The pH of the solution is a key parameter for the efficient extraction of Cr(VI): pH should be maintained below pH 4.5. Extraction kinetics and equilibrium are also controlled by the solvent used to dilute the carrier: kerosene is better than cumene and xylene. The reacetylation of chitosan, resulting from the reaction of acetic anhydride with the biopolymer (after water exchange with methanol as the solvent), is expected to increase its resistance to chemical degradation in very acidic solutions but decreases its extraction efficiency

Keywords: Back-Extraction, Carrier, Equilibrium, Metal-Ions, Polymer, Recovery, Removal, Sorption, Supported Liquid Membranes, Transport

Ebner, A.D., Ritter, J.A. and Navratil, J.D. (2001), Adsorption of cesium, strontium, and cobalt ions on magnetite and a magnetite-silica composite. *Industrial & Engineering Chemistry Research*, **40** (7), 1615-1623.

Full Text: [I\Ind Eng Che Res40, 1615.pdf](I/Ind%20Eng%20Che%20Res40,%201615.pdf)

Abstract: Constant pH adsorption isotherms for nonradioactive Cs+, Sr2+, and Co2+ on pure magnetite and a 80% (w/w) magnetite-silica composite were measured at 25 degreesC over a wide range of metal ion concentrations. The adsorption studies were carried out at four different pH’s: 6, 7, 8, and 9 for Cs+ and Sr2+ and 5, 6, 7, and 8 for Co2+. All of the constant pH isotherms exhibited type I behavior with a saturation capacity that was pH-dependent and increased with increasing pH. The corresponding distribution coefficients increased with increasing pH but decreased with increasing metal ion concentration; they were also 10-1000 times lower than those reported in the literature for more selective but more expensive adsorbents. These two magnetite-based adsorbents also exhibited moderate regeneration conditions, with nearly 90-100% regeneration achieved in most cases at pH values between 1 and 3. A Langmuir model with pH-dependent parameters was also fitted successfully to all of the constant pH adsorption isotherms. This experimental data and the corresponding pH-dependent Langmuir correlation should find considerable use in the design and development of inexpensive fixed-bed adsorption processes for the removal of the radioactive isotopes of Cs+, Sr2+, and Co2+ from aqueous solutions that are produced in nuclear facilities. Magnetite, when encased in silica and placed in a packed column, can also be used as the charging element in high gradient magnetic separation, thereby removing not only metal ions via surface complexation (adsorption) but also nanoparticles of a paramagnetic nature.

Keywords: Oxide-Water Interface, Selective Removal, Hexacyanoferrate Composites, Unconventional Sorbents, Sorptive Removal, Cs(I) Sorption, Waste-Water, Metal-Ions, Radionuclides, Sr-90

Grande, C.A. and Rodrigues, A.E. (2001), Adsorption equilibria and kinetics of propane and propylene in silica gel. *Industrial & Engineering Chemistry Research*, **40** (7), 1686-1693.

Full Text: [I\Ind Eng Che Res40, 1686.pdf](I/Ind%20Eng%20Che%20Res40,%201686.pdf)

Abstract: Adsorption equilibrium isotherms for propane and propylene on narrow pore silica gel (NSG) and wide pore silica gel (WSG) were measured by gravimetry in the temperature range 303-343 K and at pressures up to 101 kPa. The isotherms were correlated by the generalized Dubinin isotherm and Polanyi’s theory. Both adsorbents have a higher affinity for propylene. The loading at 100 kPa of propylene is 2 and 0.7 mmol/g on NSG and WSG, respectively. These loadings are 1.5 higher than those for propane with both adsorbents. The heat of adsorption estimated by the Clausius-Clapeyron equation decreases with the degree of coverage. Adsorption kinetics in the same temperature range was studied by the zero-length column method using the long time response. The diffusion of propane and propylene in both silicas is controlled by Knudsen diffusion. The pore diffusivities determined in the temperature range 303-343 K are 2.4×10-3-2.8×10-3 and 1.7×10-3-2.4×10-3 cm2/s for propane and propylene on NSG, respectively. For WSG these values are 6.4×10-3-9.9×10-3 cm2/s for propane and 6.6×10-3-12.1×10-3 cm2/s for propylene. Average tortuosity factors of 2.5 for NSG and 2.0 for WSG were obtained.

Keywords: Diffusivity, Prediction, Equation, Pellets

Lee, S.A., Choo, K.H., Lee, C.H., Lee, H.I., Hyeon, T., Choi, W. and Kwon, H.H. (2001), Use of ultrafiltration membranes for the separation of TiO2 photocatalysts in drinking water treatment. *Industrial & Engineering Chemistry Research*, **40** (7), 1712-1719.

Full Text: [I\Ind Eng Che Res40, 1712.pdf](I/Ind%20Eng%20Che%20Res40,%201712.pdf)

Abstract: This study investigated the ability of cross-flow ultrafiltration (UF), combined with photocatalytic reactions, to separate TiO2 photocatalysts from treated water in photocatalytic drinking water treatment. The effect of natural organic matter (i.e., humic acids) and cross-flow velocities on UF fluxes and organic removal was explored with and without UV irradiation in the photocatalytic reactor. The interaction between the two solutes in the system, humic acids and TiO2 photocatalysts, played a significant role in the formation of dense cake layers at the membrane surface, leading to a greater flux decline during ultrafiltration of TiO2 particles. According to visual observations of the used membranes and the estimation of back-transport velocities of the solutes, a substantial amount of TiO2 deposited on the membrane induces more humic acids to accumulate at the membrane through the adsorption of humic acids onto TiO2 particles. The humic-acid-laden TiO2 particles offered more than four times higher specific cake resistance with a substantially increased compressibility coefficient than TiO2 particles alone. The higher the cross-flow velocities, the greater the UV254 removal achieved. This was because the rise of cross-flow velocities contributed to the reduction of concentration polarization at the membrane surface, thereby resulting in a decrease of the driving force for humic acids to pass through the membrane. When photocatalytic reactions took place with UV illumination, UV254 removal efficiencies of the permeate were improved markedly, and also the permeate flux was kept at a constant level without any sign of fouling. Although humic acids were not completely mineralized by photocatalysis, the degradation of the humic acids helped to enhance the UF flux, as they were transformed to less adsorbable compounds.

Keywords: Heterogeneous Photocatalysis, Filtration System, Humic Substances, Degradation, Reactor, Acids, Contaminants, Catalysis

Delgado, J.A. and Rodrigues, A.E. (2001), A Maxwell-Stefan model of bidisperse pore pressurization for Langmuir adsorption of gas mixtures. *Industrial & Engineering Chemistry Research*, **40** (10), 2289-2301.

Full Text: [I\Ind Eng Che Res40, 2289.pdf](I/Ind%20Eng%20Che%20Res40,%202289.pdf)

Abstract: The dynamics of bidisperse pore pressurization with multicomponent mixtures is studied using the Maxwell-Stefan approach to describe the mass-transfer processes in macro-and micropores; The solid network is described by the branched micropore-macropore model, allowing for adsorption to occur at both levels. The adsorption equilibrium is described with the extended Langmuir isotherm. Numerical solutions of partial pressure and surface coverage profiles are obtained using orthogonal collocation in finite elements. The effects of micropore surface diffusivity and feed composition on the controlling resistance for the separation of a binary mixture of inert and adsorbable gases are studied, A criterion is suggested for identification of the controlling resistance that takes into account the effect of composition on convective transport and micropore surface diffusion. The effect of macropore resistance on a kinetics-based separation is analyzed for a binary mixture of two adsorbable components. The separation of a ternary mixture is also addressed, in a study of the effects of the inert gas concentration in the feed on the system dynamics for a mixture of an inert and two adsorbable gases with different affinities.

Keywords: Mass-Transfer, Diffusion, Transport, Hydrocarbons, Separation, Convection, Capillary, Equations, Membranes, Particle

Cabatingan, L.K., Agapay, R.C., Rakels, J.L.L., Ottens, M. and van der Wielen, L.A.M. (2001), Potential of biosorption for the recovery of chromate in industrial wastewaters. *Industrial & Engineering Chemistry Research*, **40** (10), 2302-2309.

Full Text: [I\Ind Eng Che Res40, 2302.pdf](I/Ind%20Eng%20Che%20Res40,%202302.pdf)

Abstract: A biosorbent’s low chemical stability against oxidative attack and its poor regenerability are problems that limit the applicability of biosorption in addressing the problem of recovering chromate in industrial wastewater. To provide a sufficient premise for such an argument, original equilibrium and kinetic data on tile biosorption of chromate by the biomass of the brown seaweed Sargassum siliquosum are presented and benchmarked with other related reports. It is established that the optimal condition for chromate biosorption is around pH 2. It is shown that electrochemical reduction of some of the chromate in the solution occurs in parallel with biosorption. Aside from the solution pH, the other factors shown to influence the equilibrium and the kinetics of both biosorption and reduction are the amount of biomass and the total chromate concentration. The chromate bound by the seaweed is found to be difficult to desorb using H2SO4 without first reducing the hexavalent chromate into a trivalent chromium. These findings are shown to be common among other reported studies using different biosorbents. In conclusion, it is argued that biosorption is not a highly viable option for the recovery of chromate in industrial wastewaters.

Keywords: Hexavalent Chromium, Ion-Exchange, Removal, Cr(VI), Adsorption

Unnithan, M.R. and Anirudhan, T.S. (2001), The kinetics and thermodynamics of sorption of chromium(VI) onto the iron(III) complex of a carboxylated polyacrylamide-grafted sawdust. *Industrial & Engineering Chemistry Research*, **40** (12), 2693-2701.

Full Text: [I\Ind Eng Che Res40, 2693.pdf](I/Ind%20Eng%20Che%20Res40,%202693.pdf)

Abstract: A novel, adsorbent was prepared and its adsorption properties for Cr(VI) were studied. The iron(III) complex of a carboxylated polyacrylamide-grafted sawdust has been found to be an effective adsorbent for the removal of Cr(VI) from aqueous systems. Experiments were carried out as a function of concentration of Cr(VI), agitation period, agitation speed, pH, ionic strength, and temperature. Maximum removal (> 99.0%) was observed at an initial concentration of 25.0 mg/L in the pH range 2.0-3.0. Coordination unsaturated sites for the iron(III) complex of polymer were considered to be the adsorption sites for Cr(VI) species, with the predominant species being HCrO4-. Rate constants as a function of concentration and temperature were evaluated with the help of a proposed second-order kinetic model. The percentage removal of Cr(VI) decreased with increasing ionic strength. The L-type adsorption isotherm obtained for the adsorbent indicated a favorable process. Adsorption isothermal data could be interpreted by the Langmuir and Freundlich equations. The uptake of Cr(VI) on adsorbent increased from 144.20 mg/g at 20 degreesC to 172.74 mg/g at 60 degreesC. Thermodynamic parameters such as DeltaG degrees, DeltaH degrees, and DeltaS degrees for the adsorption process were calculated. The isosteric heat of adsorption was also determined at various surface loadings of the adsorbent used. Simulated Cr(VI) electroplating wastewaters were also treated by the sorbent to demonstrate its efficiency in removing Cr(VI) from wastewater with other ions. Desorption studies showed that over 95.5% of Cr(VI) can be desorbed from the adsorbent using 0.1 M NaOH.

Keywords: Metal-Adsorption Properties, Waste-Water, Aqueous-Solutions, Activated Carbon, Functional-Group, Removal, Cr(VI), Silica, Recovery

? Chern, J.M. and Chien, Y.W. (2001), Adsorption isotherms of benzoic acid onto activated carbon and breakthrough curves in fixed-bed columns. *Industrial & Engineering Chemistry Research*, **40** (17), 3775-3780.

Full Text: [2001\Ind Eng Che Res40, 3775.pdf](2001/Ind%20Eng%20Che%20Res40,%203775.pdf)

Abstract: The adsorption isotherms of benzoic acid onto granular activated carbon at varying solution temperatures (25-55 degreesC) and pHs (2-8) from aqueous solution were experimentally determined by batch tests. The Toth model was found to fit all of the experimental data well. A series of column tests were performed to determine the breakthrough curves with varying bed depths (3-6 cm) and water flow rates (21.6-86.4 cm(3)/h). The results show that the half breakthrough time increases proportionally with increasing bed depth but decreases inverse proportionally with increasing velocity. The constant-pattern wave approach using the Freundlich isotherm model fits the experimental breakthrough curves quite successfully. A correlation was proposed to predict the volumetric mass-transfer coefficient in the liquid phase.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Aqueous-Solution, Aromatic-Compounds, Breakthrough, Breakthrough Curves, Dye Adsorption, Fixed Bed, Model, Organics, Oxidation, Peroxide, Reactor, Wave Propagation Theory

Destaillats, H., Lesko, T.M., Knowlton, M., Wallace, H. and Hoffmann, M.R. (2001), Scale-up of sonochemical reactors for water treatment. *Industrial & Engineering Chemistry Research*, **40** (18), 3855-3860.

Full Text: [I\Ind Eng Che Res40, 3855.pdf](I/Ind%20Eng%20Che%20Res40,%203855.pdf)

Abstract: A novel pilot-plant scale sonochemical reactor (UES 4000 C Pilotstation) has been specifically developed for degrading a variety of water contaminants in large-scale applications. We report here the sonochemical degradation of three chemical compounds in aqueous solution: the chlorinated volatile contaminants dichloromethane (DCM) and trichloroethylene (TCE) and the nonvolatile azo dye methyl orange (MO). The flow-through reactor in the Pilotstation consists of four 612 kHz piezoelectric transducers which are driven by a power source operating at 3kW. The sonochemical reaction chamber has a volume of 6 L, while the total capacity of the Pilotstation, including a heat-exchanger unit and a reservoir tank varies from a minimum volume of 7.25 L to a maximum over 45 L. The observed reaction rates for the degradation of these contaminants in the Pilotstation were compared with values determined under similar conditions in small-scale bench reactors in order to evaluate its performance over a wide range of power densities. The pseudo-first-order degradation rate for TCE in the Pilotstation was found to be more than 4 times higher than corresponding smaller values measured in lab-scale reactors. Furthermore, the observed rates for DCM degradation also exceeded those of the small-scale reactors by factors from 3 to 7. The degradation rate of these two chlorinated compounds was faster with decreasing initial concentration in all cases. Experiments with 10 muM MO (aq) in the Pilotstation operating at different total volumes exhibited a linear dependence between the observed rate constants for sonolysis and the applied power density (PD), in the range 67 < PD (W/L) < 414. Steady-state . OH (aq) radical concentrations in each reactor were calculated and were shown to correlate with the applied power, density in the vessel. A power budget analysis for the Pilotstation indicates that nearly one-third of the applied power is converted in sonochemical activity.

Keywords: Ultrasonic Irradiation, Sonolytic Degradation, Mechanism, Kinetics, Ozonolysis, Azobenzene, Oxidation, Radicals

Costanza, V., Rossi, F.M., Costanza, P. and Zanuttini, M.A. (2001), Diffusion and reaction in isothermal pulping digesters. *Industrial & Engineering Chemistry Research*, **40** (18), 3965-3972.

Full Text: [I\Ind Eng Che Res40, 3965.pdf](I/Ind%20Eng%20Che%20Res40,%203965.pdf)

Abstract: A mathematical model describing isothermal alkali diffusion and reaction with acetyl groups in moist wood chips was derived and validated against experiments. A coupled mass balance for the acetyl groups and the alkali was posed and solved numerically. Differences observed earlier between model-predicted and experimentally obtained alkali concentration profiles demonstrated that the diffusion coefficient D is not a constant but a certain function of alkali concentration C. A model for this dependence was developed on the basis of theoretical principles. The function C -->D plays a key role in the qualitative form of the resulting alkali profiles, especially in terms of changes in the sign of the curvature that were not explained by other approaches in the literature. A new parameter, the “deacetylation index”, was introduced as an observable quantity that is useful for tracking the end of the impregnation stage in pulping processes.

Keywords: Poplar Wood, Impregnation

Van der Bruggen, B., De Vreese, I. and Vandecasteele, C. (2001), Water reclamation in the textile industry: Nanofiltration of dye baths for wool dyeing. *Industrial & Engineering Chemistry Research*, **40** (18), 3973-3978.

Full Text: [I\Ind Eng Che Res40, 3973.pdf](I/Ind%20Eng%20Che%20Res40,%203973.pdf)

Abstract: The textile industry is a large water consumer: dyeing, rinsing, and follow-up treatment of textiles use large amounts of freshwater. As regulations become more and more stringent and the cost of freshwater increases, reclamation of wastewater becomes more and more attractive. This paper explores the possibility of using nanofiltration to improve the wastewater quality to the standards that are used for the dyeing of wool. Four different samples from the wastewater treatment sequence of a textile factory were filtrated with three different nanofiltration membranes (NF70, UTC-20, and NTR 7450). The samples were a used and untreated metal complex dye bath, a used and untreated acid dye bath, a sample from the storage tank (containing a diluted mixture of the previous baths), and the effluent of the biological treatment. Nanofiltration was possible for all samples, but the biologically treated dye baths showed a more efficient color removal. For direct nanofiltration of used dye baths, two membrane passages would be needed to provide the required permeate quality. Flux decline due to adsorption of organic material on the membrane decreased the membrane capacity by up to 73%, but the process water flux reached a stable value in all experiments. The flux decline was less important for the biologically treated water. The effect of flux decline was only partly reversible; the effect of osmotic pressure on the process water flux is fully reversible. It was found that flux decline is largely concentration-dependent: higher concentrations of organic compounds always caused lower process water fluxes.

Choi, J.G., Do, D.D. and Do, H.D. (2001), Surface diffusion of adsorbed molecules in porous media: Monolayer, multilayer, and capillary condensation regimes. *Industrial & Engineering Chemistry Research*, **40** (19), 4005-4031.

Full Text: [I\Ind Eng Che Res40, 4005.pdf](I/Ind%20Eng%20Che%20Res40,%204005.pdf)

Abstract: This review provides an overview of surface diffusion and capillary condensate flow in porous media. Emphasis has been placed on the distinction between purely surface diffusion, multilayer surface diffusion, and, capillary condensate flow.

Keywords: Predicting Multicomponent Diffusivities, Energetically Heterogeneous Surfaces, Effective-Medium Approximation, Pure-Component Diffusivities, Occupancy Zeolite Catalysts, Microporous Vycor Glass, Ceramic Membranes, Mesoporous Media, Activated Carbon, Gas-Transport

Girard, K.P., Hanley, C.M., Vanderlick, T.K. and Quinn, J.A. (2001), Effect of the skeletonization process on vapor sorption into Langmuir-Blodgett multilayers. *Industrial & Engineering Chemistry Research*, **40** (20), 4283-4287.

Full Text: [I\Ind Eng Che Res40, 4283.pdf](I/Ind%20Eng%20Che%20Res40,%204283.pdf)

Abstract: One of simplest Langmuir-Blodgett films is a stack of fatty acid layers bridged together by divalent cations. A certain fraction of fatty acids remain protonated, an amount dictated by aqueous subphase conditions during film deposition; these films are thus comprised of two components with different solubilities in organic solvents. We investigated the so-called skeletonization process that occurs when behenic acid multilayers are immersed in benzene. In particular, we used a quartz crystal microbalance to measure the loss of film mass and found that it agrees well with the amount of protonated acid in the original film. We also used the quartz crystal microbalance to investigate the equilibrium vapor sorption properties of unmodified films and compared them to those of skeletonized films. Both types of films take in nearly the same amount of water but absorb distinctly different amounts of selected organic vapors.

Keywords: Quartz-Crystal Microbalance, Surfaces, Water, Films

Wang, P.M., Anderko, A. and Turner, D.R. (2001), Thermodynamic modeling of the adsorption of radionuclides on selected minerals. I: Cations. *Industrial & Engineering Chemistry Research*, **40** (20), 4428-4443.

Full Text: [I\Ind Eng Che Res40, 4428.pdf](I/Ind%20Eng%20Che%20Res40,%204428.pdf)

Abstract: A general model that couples the diffuse-layer theory of surface complexation with an aqueous activity coefficient model based on the B-dot equation has been developed to study the adsorption of ions at the solid-water interface. The model takes into account the effect of changing aqueous speciation on the formation of surface complexes. It has been applied to determine the binding constants for the sorption of selected radionuclide cations, namely, Am(III), Pu(IV), Pu(V), and Np(V), on a number of (hydr)oxide minerals. The results show that the model accurately represents adsorption data in all examined cases. The binding constants of radionuclide cations were found to increase with their hydrolysis constants, and a linear correlation was developed to reproduce this behavior. The approach presented in this work can be generalized to study the ionic adsorption effects in other waste-abatement processes at solid-water interfaces and in water streams where ion separation is required.

Keywords: Complex-Formation Model, Ion-Exchange Resins, Amorphous Iron Oxyhydroxide, Surface Complexation, Performance Assessment, Neptunium(V) Sorption, Humic-Acid, Equilibria, Oxides, Hydrargilite

Wang, P.M., Anderko, A. and Turner, D.R. (2001), Thermodynamic modeling of the adsorption of radionuclides on selected minerals. II: Anions. *Industrial & Engineering Chemistry Research*, **40** (20), 4444-4455.

Full Text: [I\Ind Eng Che Res40, 4444.pdf](I/Ind%20Eng%20Che%20Res40,%204444.pdf)

Abstract: A surface complexation model based on the diffuse-layer theory has been applied to study the adsorption of radionuclide anions (I-, IO3-, SeO32-, SeO42-, and TcO4-) on various minerals. The model is coupled with an aqueous activity coefficient model based on the B-dot equation and takes into account the effect of aqueous speciation on adsorption. Binding constants for the selected radionuclide anions on minerals have been determined. In all examined cases, the model is shown to accurately represent the adsorption data. The selected radionuclide anions have been identified as potentially significant contributors for dosing in high-level nuclear waste because of their high solubilities and reduced interactions with aquifer minerals; the methodology presented in this work can be generalized to the study of ion adsorption effects at water-mineral interfaces in natural systems that implicitly regulate the fate of environmental contaminants.

Keywords: Surface Complexation, Performance Assessment, Sorption, Selenium, Interface, Goethite, Cinnabar, Kinetics, Selenate, Exchange

Kiefer, R. and Höll, W.H. (2001), Sorption of heavy metals onto selective ion-exchange resins with aminophosphonate functional groups. *Industrial & Engineering Chemistry Research*, **40** (21), 4570-4576.

Full Text: [I\Ind Eng Che Res40, 4570.pdf](I/Ind%20Eng%20Che%20Res40,%204570.pdf)

Abstract: The ion-exchange equilibria for the exchange of heavy metal ions (Cu2+, Ni2+, Cd2+ Zn2+, and Co2+) and of Ca2+, Na+, and NH4+ ions by two commercially available chelating ion-exchange resins with aminophosphonate functional groups (Purolite S 940 and S 950) have been studied. From simple binary systems of the exchange of each of the species for H+ ions, the series of selectivity for these species were determined. Evaluation of the binary data by means of the surface complexation theory led to sets of binary equilibrium parameters that remain unchanged in multicomponent systems. By means of these parameter values, ternary and quaternary equilibria and equilibria with complexing-agent-bearing wastewaters from metal surface treatments were predicted and compared with experimental results. In all cases, very satisfactory agreement was found.

Keywords: Complex-Formation Model, Chelating Resins, Equilibria, Zinc

? Gonzalez, M.P., Saucedo, I., Navarro, R., Avila, M. and Guibal, E. (2001), Selective separation of Fe(III), Cd(II), and Ni(II) from dilute solutions using solvent-impregnated resins. *Industrial & Engineering Chemistry Research*, **40** (25), 6004-6013.

Full Text: [2001\Ind Eng Che Res40, 6004.pdf](2001/Ind%20Eng%20Che%20Res40,%206004.pdf)

Abstract: The aim of this work was to study the separation of Cd(II), Fe(III), and Ni(II) from dilute solutions using solvent- impregnated resins. The separation was performed using Amberlite XAD-2 impregnated with the extractants Cyanex 272 and Cyanex 302. The influence of pH on the extraction of each metal was determined, first using liquid, liquid extraction and then using solvent-impregnated resins. Extraction isotherms and kinetics were then studied at the selected pH. Results showed that Fe(III) can be extracted from aqueous solutions at pH 2 using Amberlite XAD-2 impregnated with Cyanex 272, Cd(II) extracted at pH 2 using Amberlite XAD-2, Cyanex 302, and Ni(II) extracted at pH 8 using Amberlite XAD-2, Cyanex 302. Loaded resins can be regenerated, and the metal ions can be recovered selectively. Two fixed-bed columns arranged in-series (Amberlite XAD-2 impregnated with Cyanex 301 and Cyanex 302, respectively) were successfully used for the separation and recovery of these three metal ions from mufti-component solutions.

Keywords: Cadmium(II), Cu(II), Cyanex-302, Di-(2,4,4-Trimethylpentyl)Phosphinic Acid, Divalent Metals, Extraction, Influence of pH, Isotherms, Kinetics, Levextrel Resins, Media, Sorption, Zn(II)

Basso, M.C., Cerrella, E.G. and Cukierman, A.L. (2002), Activated carbons developed from a rapidly renewable biosource for removal of cadmium(II) and nickel(II) ions from dilute aqueous solutions. *Industrial & Engineering Chemistry Research*, **41** (2), 180-189.

Full Text: [I\Ind Eng Che Res41, 180.pdf](I/Ind%20Eng%20Che%20Res41,%20180.pdf)

Abstract: Canes from *Arundo donax*, a rapid-growing plant, were converted to activated carbons by phosphoric acid activation under four different activation atmospheres, to develop carbons with substantial capability to adsorb Cd(II) and Ni(II) ions from dilute aqueous solutions. The carbons showed surface areas and total pore volumes of around 1100 m2/g and 1 cm3/g, respectively. The content of carbons’ polar or acidic surface oxygen functional groups, with their development depending on the atmosphere used, influenced predominantly metal adsorption. Carbons derived under flowing air, possessing the largest total content of these groups (3.3 mequiv/g), showed the best adsorption effectiveness (>90%) for both ions, even superior to that determined for a commercial sample used as a reference. A pseudo-second-order rate model properly described adsorption kinetic data obtained for this sample. Equilibrium isotherms using the same carbon were also determined and modeled by the Langmuir isotherm. The influence of the solutions’ pH on metal uptake, adsorption competitive effects between Cd(II) and Ni(II) ions, and desorption from the selected metal-loaded carbon for recovery purposes were additionally investigated.

Keywords: Agricultural By-Products, Miscanthus-Sinensis, Phosphoric-Acid, Heavy-Metals, Arundo-Donax, Waste-Water, Adsorption, Porosity, Copper, Zinc

Lin, S.H. and Juang, R.S. (2002), Kinetic modeling of simultaneous recovery of metallic cations and anions with a mixture of extractants in hollow-fiber modules. *Industrial & Engineering Chemistry Research*, **41** (4), 853-861.

Full Text: [I\Ind Eng Che Res41, 853.pdf](I/Ind%20Eng%20Che%20Res41,%20853.pdf)

Abstract: The simultaneous extraction recovery of free Cu2+ ions and ethylenediaminetetraacetic acid (EDTA)-chelated anions from chloride solutions into a stripping HCl solution with a mixture of LIX64N and Aliquat 336 was studied in two hollow-fiber modules. A kinetic model is presented that considers possible mass transfer steps, including aqueous-layer diffusion, interfacial chemical reaction, membrane diffusion, and organic-layer diffusion. In particular, the effects of the preferential extraction of one metallic species and the mutual interaction of the two extractants were also corrected in this model on the basis of the results for individual, extraction systems. The calculated time profiles of the total CuII) concentrations were in reasonable agreement with the experimental data (standard deviations of 11% in both the extraction and back-extraction modules). Finally, the rate-controlling mechanisms of such nondispersive extraction processes were quantitatively identified and are discussed in terms of a comparison of the resistance of each mass transfer step.

Keywords: Supported Liquid Membranes, Solvent-Extraction, Mass-Transfer, Nondispersive Extraction, Aliquat-336, Cr(VI), Equilibrium, Contactors, Efficiency, Carrier

Khraisheh, M.A.M., Al-Degs, Y.S., Allen, S.J. and Ahmed, M.N. (2002), Elucidation of controlling steps of reactive dye adsorption on activated carbon. *Industrial & Engineering Chemistry Research*, **41** (6), 1651-1657.

Full Text: [I\Ind Eng Che Res41, 1651.pdf](I/Ind%20Eng%20Che%20Res41,%201651.pdf)

Abstract: In this work, the rate-limiting steps of reactive dye adsorption onto FS-400 activated carbon were elucidated through the investigation of adsorption kinetics. These studies initially revealed that only 20% of the available adsorption capacity was achieved during the first 6 h of mixing. Kinetic profiles showed that the adsorption process was mainly controlled by external diffusion during the first 30 min of the reaction, after which internal diffusion controlled the process. The interruption test method identified the rate-limiting steps; the results showed that sorption of reactive dyes onto FS-400 was mainly controlled by internal diffusion. Furthermore, the external and internal diffusion coefficients and the desorption rate decreased after the interruption period. The same parameters increased when the solution temperature was raised. The thermodynamic parameters studied showed that the adsorption of reactive dyes onto activated carbon was endothermic and is mainly controlled by internal diffusion with a minor effect of external diffusion.

Keywords: Aqueous-Solutions, Sorption, Removal, Peat, Equilibrium, Effluent, Chitosan, Clay

? Papini, M.P., Bianchi, A., Majone, M. and Beccari, M. (2002), Equilibrium modeling of lead adsorption onto a “red soil” as a function of the liquid-phase composition. *Industrial & Engineering Chemistry Research*, **41** (8), 1946-1954.

Full Text: [I\Ind Eng Che Res41, 1946.pdf](I/Ind%20Eng%20Che%20Res41,%201946.pdf)

Abstract: “Red soils” are silty-clay materials typical of Central Italy, with a high content of iron and aluminum (hydro)oxides, resulting from dissolution of carbonates and mixed with particles of volcanic origin. These soils are becoming interesting because of their large availability in Central and Southern Italy and large attenuation capacity with respect to heavy metals due to their geochemical characteristics (high surface area, cation-exchange capacity, and pH). Thus, their possible use as a daily landfill coverage or as a low-cost sorbent material is under evaluation. Lead adsorption, as representative of heavy metals in polluted streams, has been studied as a function of the composition of the liquid phase. Different background electrolytes (NaClO4, NaNO3, NaCl, and CH3COONa) and different pHs (4-7) were used in order to obtain different lead speciation in the liquid phase. Lead adsorption occurred not only to the account of free lead, and positively charged complexes (PbNO3+, PbCl+, and CH3COOPb+) strongly contributed to the total metal removal. An adsorption model was developed based on the surface complexation concept, which can be proposed as a general approach for characterizing metal adsorption on heterogeneous natural sorbents as a function of the composition and pH of the liquid phase. The model was characterized by the presence of two surface complexation and one ion-exchange sites onto which the different lead species can be sorbed. A maximum sorption capacity of 21.7 mg g-1 was calculated for lead and gives to the red soil a particular interest as a possible alternative low-cost sorbent.

Basso, M.C., Cerrella, E.G. and Cukierman, A.L. (2002), Lignocellulosic materials as potential biosorbents of trace toxic metals from wastewater. *Industrial & Engineering Chemistry Research*, **41** (15), 3580-3585.

Full Text: [I\Ind Eng Che Res41, 3580.pdf](I/Ind%20Eng%20Che%20Res41,%203580.pdf)

Abstract: The potential capability of Arundo donax stems, Brazil nutshells, sugarcane bagasse, and sawdust from a. native wood species (Prosopis ruscifolia) to sequester trace metals from wastewater was comparatively examined using dilute aqueous solutions of Cd(II) or Ni(II) ions as models. Brazil nutshells showed the best effectiveness (>90%) for the uptake of both metals from solutions of 20 mg, L initial concentration for dosages larger than 0.2-0.4 mg, L, even superior to those obtained for a commercial activated carbon and, or red marine algae (Corallinales) used for comparison under identical conditions. Equilibrium isotherms of cadmium on the lignocellulosic and algae samples and of nickel on the nutshells were determined and properly described by the Langmuir model. The highest maximum sorption capacity of Cd(II) ions was obtained for the nutshells (Xm = 19.4 mg, g) among the lignocellulosic samples. The trend in the estimated Xm values was found to be consistent with their contents of lignin and total surface acidic functional groups. Nevertheless, Xm for the nutshells was lower than that for the algae (X = 29.7 mg, g). The nutshells were also found to be less effective at removing Ni(II) ions compared to Cd(II) ions

Keywords: Activated Carbon, Adsorption, Aqueous-Solution, Arundo-Donax, Biomass, Biosorption, Cadmium, Heavy-Metals, Isotherms, Lignin, Marine-Algae, Miscanthus-Sinensis, Removal, Sawdust, Sorption, Sphagnum Moss Peat, Wastewater

Basso, M.C., Cerrella, E.G. and Cukierman, A.L. (2002), Lignocellulosic materials as potential biosorbents of trace toxic metals from wastewater. *Industrial & Engineering Chemistry Research*, **41** (15), 3580-3585.

Full Text: [I\Ind & Eng Che Res41, 3580.pdf](I/Ind%20&%20Eng%20Che%20Res41,%203580.pdf)

Abstract: The potential capability of Arundo donax stems, Brazil nutshells, sugarcane bagasse, and sawdust from a. native wood species (Prosopis ruscifolia) to sequester trace metals from wastewater was comparatively examined using dilute aqueous solutions of Cd(II) or Ni(II) ions as models. Brazil nutshells showed the best effectiveness (>90%) for the uptake of both metals from solutions of 20 mg/L initial concentration for dosages larger than 0.2-0.4 mg/L, even superior to those obtained for a commercial activated carbon and/or red marine algae (Corallinales) used for comparison under identical conditions. Equilibrium isotherms of cadmium on the lignocellulosic and algae samples and of nickel on the nutshells were determined and properly described by the Langmuir model. The highest maximum sorption capacity of Cd(II) ions was obtained for the nutshells (X-m = 19.4 mg/g) among the lignocellulosic samples. The trend in the estimated X-m values was found to be consistent with their contents of lignin and total surface acidic functional groups. Nevertheless, X-m for the nutshells was lower than that for the algae (X = 29.7 mg/g). The nutshells were also found to be less effective at removing Ni(II) ions compared to Cd(II) ions.

Keywords: Sphagnum Moss Peat, Aqueous-Solution, Miscanthus-Sinensis, Heavy-Metals, Arundo-Donax, Marine-Algae, Biosorption, Removal, Adsorption, Biomass

Mohan, D., Singh, K.P., Singh, G. and Kumar, K. (2002), Removal of dyes from wastewater using flyash, a low-cost adsorbent. *Industrial & Engineering Chemistry Research*, **41** (15), 3688-3695.

Full Text: [I\Ind Eng Che Res41, 3688.pdf](I/Ind%20Eng%20Che%20Res41,%203688.pdf)

Abstract: The use of low-cost adsorbent has been investigated as a replacement for the current expensive methods of removing dyes from wastewater. As such, fly ash generated in National Thermal Power plant was collected and converted into a low-cost adsorbent. The prepared adsorbent was characterized and used for the removal of dyes from wastewater. Adsorption studies were carried out for different temperatures, particle sizes, pH’s, and adsorbent doses. The adsorption of each dye was found to increase with increasing temperature, thereby indicating that the process is endothermic in nature. The removal of each dye was found to be inversely proportional to the size of the fly ash particles, as expected. Both the linear and nonlinear forms of the Langmuir and Freundlich models fitted the adsorption data. The results indicate that the Freundlich adsorption isotherm fitted the data better than the Langmuir adsorption isotherm. Further, the data were better correlated with the nonlinear than the linear form of this equation. Thermodynamic parameters such as the free energies, enthalpies, and entropies of adsorption of the dye-fly ash systems were also evaluated. The negative values of free energy indicate the feasibility and spontaneous nature of the process, and the positive heats of enthalpy suggest the endothermic nature of the process. The adsorptions of crystal violet and basic fuschin follow first-order rate kinetics. In comparison to other low-cost adsorbents, the sorption capacity of the material under investigation is found to be comparable to that of other commercially available adsorbents used for the removal of cationic dyes from wastewater.

Krishnan, K.A. and Anirudhan, T.S. (2002), Uptake of heavy metals in batch systems by sulfurized steam activated carbon prepared from sugarcane bagasse pith. *Industrial & Engineering Chemistry Research*, **41** (20), 5085-5093.

Full Text: [I\Ind & Eng Che Res41, 5085.pdf](I/Ind%20&%20Eng%20Che%20Res41,%205085.pdf)

Abstract: In this work, sorption of Pb(II), Hg(II), Cd(II), and Co(II) on sulfurized steam activated carbon (SSAC) has been studied by using a batch technique. The SSAC has been prepared from sugarcane bagasse pith by single-step steam pyrolysis in the presence of SO2 and H2S at 400 degreesC. The adsorption of metal ions on SSAC has been found to be time-, concentration-, pH-, and temperature-dependent. The kinetic data obtained at different temperatures have been analyzed using a pseudo-second-order equation. Kinetic and thermodynamic parameters have been determined based on the rate constants using Arrhenius and Eyring equations. The adsorption of heavy metal ions from aqueous solutions increased with increasing pH, and maximum removal [99.2% for Pb(II), 97.2% for Hg(II), 93.1% for Cd(II), and 81.9% for Co(II)] was observed in the pH range of 4.0-8.0 with an initial concentration of 100 mg/L. The selectivity order of the adsorbent is Pb(II) > Hg(II) > Cd(II) > Co(II). The H-type adsorption isotherm obtained for the adsorbent indicated a favorable process. The applicability of the Langmuir and Freundlich adsorption isotherm models has been tested. The SSAC had maximum adsorption capacities (evaluated from fits of the Langmuir isotherm to batch adsorption data for a contact time of 4 h at 30 degreesC) for Pb(II), Hg(II), Cd(II), and Co(II) of 200.00, 188.68, 153.85, and 128.70 mg/g, respectively. The competitive adsorption capacities of the SSAC for all metal ions were found to be lower than noncompetitive conditions. Heavy metal adsorption from synthetic wastewaters was also studied to demonstrate its efficiency in removing metals from wastewaters containing other cations and anions. Metal ions, which are bounded to the SSAC, could be stripped by acidic solutions (0.2 M HCl) so that SSAC can be recycled. Surface modification of activated carbon using steam pyrolysis in the presence of SO2 and H2S greatly enhanced metal removal and resulted in a product with possible commercial potential for wastewater treatment.

Keywords: Aqueous-Solution, Waste-Water, Adsorption, Removal, Sorption, Lead, Ions, Pyrolysis, Kinetics, Cadmium

Shibi, I.G. and Anirudhan, T.S. (2002), Synthesis, characterization, and application as a mercury(II) sorbent of banana stalk (*Musa paradisiaca*): Polyacrylamide grafted copolymer bearing carboxyl groups. *Industrial & Engineering Chemistry Research*, **41** (22), 5341-5352.

Full Text: [I\Ind & Eng Che Res41, 5341.pdf](I/Ind%20&%20Eng%20Che%20Res41,%205341.pdf)

Abstract: Acrylamide was graft polymerized onto banana stalk, BS (Musa paradisiaca), using the ferrous ammonium sulfate/H2O2 redox initiator system in an aqueous medium. The effects of reaction variables such as time, temperature, and monomer and initiator concentrations on the percentage grafting were studied. A new adsorbent carrying a carboxylate functional. group at the, chain end was synthesized by surface modification of polyacrylamide-grafted BS (PGBS-COOH). Infrared. spectroscopy and acid-base titration were used to confirm graft copolymer formation and carboxylate functionalization. X-ray diffraction and SEM studies were carried out to investigate the crystallinity and morphology of the adsorbents. XRD studies indicated that the grafting of polyacrylamide resulted in a consequent decrease in crystallinity. SEM studies of PGBS-COOH clearly indicated that polyacrylamide grafts deposited more on the surface of the unit cell than in the intercellular gaps. A probable mechanism for graft copolymerization and surface functionalization is also suggested. The use of this adsorbent material for the removal of Hg(II) from water and wastewater was investigated using the batch adsorption technique. The adsorption of Hg(II) on the adsorbent was found to be pH-, time-, concentration-, and temperature-dependent. The optimum pH range for the process was found to be 6.0-9.0. Maximum removals of 99.3 and 84.1% were observed at Hg(II) concentrations of 50 and 100 mg/L, respectively, in this pH range. Removal of Hg(II) is adversely affected by increasing initial Hg(II) concentration. The adsorption process follows pseudo-second-order kinetics. Kinetic parameters as functions of initial concentration. and temperature were, calculated. Hg(H) adsorption was found to decrease with increasing ionic strength. The L-type adsorption isotherm obtained for the adsorbent indicated a favorable process and fitted the Langmuir isotherm model well. The adsorption capacity for Hg(II), calculated using the Langmuir isotherm equation was 137.89 mg/g at 30 degreesC, which increased to 210.50 mg/g at 60 degreesC. Thermodynamic parameters such as the changes in free energy, enthalpy, and entropy were calculated to predict the nature of adsorption. The isosteric heat of adsorption was found to be 49.89±1.31 kJ/mol and was independent of surface coverage. Chlor-alkali industrial wastewater samples were treated with this adsorbent to demonstrate its efficiency in removing Hg(II) from industrial wastewater. Recovery, of Hg(II) after adsorption and regeneration of the adsorbent for several cycles can be carried out by treatment of the loaded adsorbent with 0.2 M HCl.

Keywords: Modified Coconut Coir, Aqueous-Solution, Methyl-Methacrylate, Ion-Exchange, Heavy-Metals, Waste-Water, Fly-Ash, Adsorption, Removal, Kinetics

Calace, N., Di Muro, A., Nardi, E., Petronio, B.M. and Pietroletti, M. (2002), Adsorption isotherms for describing heavy-metal retention in paper mill sludges. *Industrial & Engineering Chemistry Research*, **41** (22), 5491-5497.

Full Text: [I\Ind & Eng Che Res41, 5491.pdf](I/Ind%20&%20Eng%20Che%20Res41,%205491.pdf)

Abstract: In this work the adsorption characteristics of paper mill sludge are evaluated for the purpose of removing metal ions from polluted waters. The Ag(I), Cd(II), Cu(II), Pb(II), and Cr(VI) (as chromate ion) adsorption mechanism on the sludge is studied by adsorption isotherms in batch conditions, after paper mill sludge characterization. The effect of several parameters (ionic charge of metals, pH, and ionic strength of metal solutions) and the competition between different metals are also considered. For Ag(I), Cd(II), Cu(II), Pb(II), and Cr(VI), the thermodynamic curves fit the Langmuir model best, whereas experimental data for Cu(II) fit the Freundlich model best. The nature of ionic charges influences the sorption process: cations are sorbed much more than chromate ion, and the affinity series for cations is Cu(II) > Pb(II) > Cd(II) ≅ Ag(I). The maximum amount of sorbed metal (*q*max) value is significantly influenced both by the liquid/solid ratio and by the pH values of metal solutions.

Cordero, T., Rodriguez-Mirasol, J., Tancredi, N., Piriz, J., Vivo, G. and Rodriguez, J.J. (2002), Influence of surface composition and pore structure on Cr(III) adsorption onto activated carbons. *Industrial & Engineering Chemistry Research*, **41** (24), 6042-6048.

Full Text: [I\Ind & Eng Che Res41, 6042.pdf](I/Ind%20&%20Eng%20Che%20Res41,%206042.pdf)

Abstract: The adsorption of chromium(III) ions from aqueous solutions onto activated carbons prepared from air and CO2 activation of Eucalyptus sawdust is studied. HNO3 oxidation of these carbons greatly enhances their ability to retain Cr(III) mainly because of a significant increase of the concentration of carbon-oxygen surface groups. To characterize these surface groups, X-ray photoelectron spectroscopy and temperature-programmed desorption (TPD) were used, The influence of these carbon- oxygen surface groups on chromium adsorption is examined. Upon addition of acidic groups, some other functions of nonacidic character evolving as CO upon TPD Seem to contribute to Cr(III) uptake. Modifications of the porous structure upon oxidation and chromium adsorption are investigated. Adsorption into the micropores appears to take place to a significant extent although oxidation of the active carbons leads to a narrowing of the average micropore widths

Keywords: Activated Carbons, Adsorption, Aqueous-Solutions, Chemistry, Chromium, Eucalyptus Wood, Fibers, Gasification, Oxygen Complexes, Pyrolysis, Removal, Sawdust, Temperature

Zouboulis, A.I. and Katsoyiannis, I.A. (2002), Arsenic removal using iron oxide loaded alginate beads. *Industrial & Engineering Chemistry Research*, **41** (24), 6149-6155.

Full Text: [I\Ind & Eng Che Res41, 6149.pdf](I/Ind%20&%20Eng%20Che%20Res41,%206149.pdf)

Abstract: The application of biopolymers (alginate), as sorbent supports, for the removal of arsenic from contaminated water has been investigated in the present study. Calcium alginate beads were placed in a column to form a fixed bed and treated (doped/coated) with hydrous ferric oxides. Three different types of modified alginate beads were examined for the removal of arsenic; the most efficient type was found to be doped with alginate and subsequently coated with iron oxides, whereas the other two types were calcium alginate beads doped or coated with iron oxides. The total amount of iron loaded on this material was found to be 3.9 mg of Fe/g of wet alginate bead. Approximately 230 bed volumes of a 50 μg/L As(V) solution were treated before the breakthrough point was reached, whereas the removal of As(III) was not as efficient, reaching the breakthrough point after the treatment of only 45 bed volumes. The results were modeled using the bed depth service time and empty bed residence time models.

Keywords: Drinking-Water, Coated Sand, Adsorption, Oxidation, Sorption, As(III), Metals, Gels

Economy, J., Dominguez, L. and Mangun, C.L. (2002), Polymeric ion-exchange fibers. *Industrial & Engineering Chemistry Research*, **41** (25), 6436-6442.

Full Text: [I\Ind Eng Che Res41, 6436.pdf](I/Ind%20Eng%20Che%20Res41,%206436.pdf)

Abstract: This work explores the design of new ion-exchange materials in the form of fibers that yield a number of important advantages over conventional ion-exchange beads. In this approach, ion- exchange fibers are prepared by (1) coating low-cost glass fiber substrates with an appropriate oligomer, (2) cross- linking, and (3) functionalizing the coating to produce either anionic or cationic capability. As a result of the thin coatings, the use of solvents prior to both functionalization and preswelling of the finished product prior to end-use was eliminated, representing a significant simplification of current synthesis methods. Kinetic experiments showed that the contact efficiencies of these systems were greatly improved over the traditional beads because of the higher surface-to- volume ratio and shorter diffusion path lengths. This improvement translated into an order of magnitude increase in both ion-exchange and regeneration rates. Another advantage is the excellent resistance of the fibers to osmotic shock even after multiple regenerations. Finally, these systems were shown to remove heavy metal contaminants effectively to well below part per billion concentrations

Keywords: Activated Carbon-Fibers, Adsorption, Design, Heavy Metal

Jia, Y. and Demopoulos, G.P. (2003), Adsorption of silver onto activated carbon from acidic media: Nitrate and sulfate media. *Industrial & Engineering Chemistry Research*, **42** (1), 72-79.

Full Text: [I\Ind Eng Che Res42, 72.pdf](I/Ind%20Eng%20Che%20Res42,%2072.pdf)

Abstract: Adsorption of silver from acidic silver nitrate and sulfate media onto a peat-based activated carbon was studied. The effects of pH, temperature, and zinc nitrate and zinc sulfate addition on the adsorption kinetics and capacities were investigated. An XRD study showed that Ag(I) was reduced to Ag(0) on the carbon surface during the adsorption process. Low pH, high zinc salt concentration, and temperature are detrimental to the adsorption of silver. Second-order reactions were involved in the process of silver adsorption with respect to Ag(I). Hydroquinone-like surface oxygen functional groups were probably involved in the reduction reaction of Ag(I) ? Ag(0). The addition of butanol to the solution appreciably reduced the adsorption rate and capacity of silver on the activated carbon. This indicates that graphene layer surfaces might also be involved in the Ag(I) ? Ag(0) reaction because of the enrichment of &pgr;-electrons on the basal planes.

Nam, K.H., Gomez-Salazar, S. and Tavlarides, L.L. (2003), Mercury(II) adsorption from wastewaters using a thiol functional adsorbent. *Industrial & Engineering Chemistry Research*, **42** (9), 1955-1964.

Full Text: [I\Ind Eng Che Res42, 1955.pdf](I/Ind%20Eng%20Che%20Res42,%201955.pdf)

Abstract: The removal of mercury(II) from wastewaters (coal-fired utility plant scrubber solutions) using a thiol functional organoceramic composite (SOL-AD-IV) is investigated. A simulant is employed as a surrogate to demonstrate the removal of mercury from real waste solutions. Equilibrium studies show a mercury uptake capacity of 500 mg/g at a low mercury concentration of 0.5 mg/L and 726 mg/g at saturation. Adsorption is observed to be independent in the pH range 3-5. The kinetic performance assessed on a recycle batch reactor shows a rapid rate of adsorption. Selectivity is found to be in the order Hg(II) > Pb(II) ~ Cd(II) > As(V) > Cr(III). Regeneration of SOL-AD-IV is accomplished using 12 M HCl. Effluent mercury concentrations of <0.001 mg/L are achieved using a fixed-bed adsorption column. A stability test operated for 25 cycles indicates a capacity loss of <10%. A high potential is demonstrated for application for mercury cleanup of wastewaters.

Singh, K.P., Mohan, D., Sinha, S., Tondon, G.S. and Gosh, D. (2003), Color removal from wastewater using low-cost activated carbon derived from agricultural waste material. *Industrial & Engineering Chemistry Research*, **42** (9), 1965-1976.

Full Text: [I\Ind Eng Che Res42, 1965.pdf](I/Ind%20Eng%20Che%20Res42,%201965.pdf)

Abstract: An activated carbon was developed from coconut shell fibers, characterized and used for the removal of Methylene blue (basic) and methyl orange (acidic) dyes from wastewater successfully. Adsorption studies were carried out at different temperatures, particle size, pH, and adsorbent doses. The adsorption data are correlated with both Langmuir and Freundlich models. The results indicate that the Freundlich model fits the data better as compared to the Langmuir model in terms of regression coefficients. Isotherms have been used to obtain the thermodynamic parameters such as free energy, enthalpy, and entropy of adsorption. The kinetic studies were also conducted, and the adsorption of Methylene blue and methyl orange follow the first-order rate equation. Various kinetic parameters such as the mass-transfer coefficient, effective diffusion coefficient, activation energy, and entropy of activation were evaluated to establish the mechanisms. It was concluded that Methylene blue adsorption occurs through a film diffusion mechanism at low as well as at higher concentrations, while methyl orange adsorption occurs through film diffusion at low concentration and particle diffusion at high concentrations. The sorption capacity of the developed carbon is comparable to the other available adsorbents, and costwise it is quite cheaper.

Budinova, T., Savova, D., Petrov, N., Razvigorova, M., Minkova, V., Ciliz, N., Apak, E. and Ekinci, E. (2003), Mercury adsorption by different modifications of furfural adsorbent. *Industrial & Engineering Chemistry Research*, **42** (10), 2223-2229.

Full Text: [I\Ind Eng Che Res42, 2223.pdf](I/Ind%20Eng%20Che%20Res42,%202223.pdf)

Abstract: Adsorption of mercury from aqueous solutions using three types of furfural-based carbon adsorbents was studied. After activation with water vapor and air, carbon adsorbents with basic and acidic characters, respectively, were obtained. The results from the study showed that all modifications of the adsorbents (with both basic and acidic characters, as well as an adsorbent from mixture of furfural and apricot stones tar) are efficient sorbent materials for mercury removal from aquatic solutions. Mercury adsorption follows a Langmuir isotherm. Adsorbents with good adsorption capacities (174 mg/g for the basic adsorbent, 154 mg/g for the adsorbent from a mixture of furfural and tar, and 132 mg/g for the adsorbent with acidic character) were obtained. The pH was determined to be the most crucial parameter. The mercury removal increases with an increase in pH from 2 to 5. It was found that the adsorption capacities of the produced carbons are significantly higher than those of commercial activated carbons. A desorption study was performed with hot water. The percentage of the recovery was 6% for the basic furfaral adsorbent, 1% for the furfural adsorbent with acidic character, and 4% for the adsorbent from the mixture of furfural and tar.

Keywords: Activated Carbons, Adsorption, Agricultural By-Products, Air, Anthracite, Aquatic, Aqueous-Solution, Cadmium, Carbon, Carbon Adsorbents, Coirpith, Copper, Desorption, Ions, Isotherm, Langmuir Isotherm, Materials, Mercury, Mercury Removal, pH, Recovery, Removal, Waste-Water, Water, Water Vapor

Liao, X.P., Lu, Z.B. and Shi, B. (2003), Selective adsorption of vegetable tannins onto collagen fibers. *Industrial & Engineering Chemistry Research*, **42** (14), 3397-3402.

Full Text: [I\Ind Eng Che Res42, 3397.pdf](I/Ind%20Eng%20Che%20Res42,%203397.pdf)

Abstract: Vegetable tannins are widely distributed in the plant kingdom. In many cases, it is necessary to remove tannins from natural beverages and medicinal plant extracts due to their physiological toxicity. In the present work, an adsorbent for this purpose was prepared on the basis of hide collagen fibers. Its adsorption selectivity for tannins was studied, using tannic acid as a target component to be removed and tea polyphenols, isoflavones, and baicalin as probe molecules. The experiment results showed that hide collagen fiber is able to remove polyphenols containing the galloyl group from aqueous solution effectively, and the extent of adsorption for tannic acid is almost 100%, while slightly adsorbing probe molecules. As a comparison, the adsorption property of macroreticular resin which was usually suggested to be used for removal of tannins was also investigated. It showed no significant adsorption selectivity in the present experiments. The mechanism of adsorption selectivity of collagen fibers for tannins was also discussed.

Keywords: Seaweed Ascophyllum-Nodosum, Polyethylene-Glycol, Condensed Tannins, Digestion, Protein, Plants, Acid, Supplementation, Ruminants, Removal

Ko, D.C.K., Porter, J.F. and McKay, G. (2003), Mass transport model for the fixed bed sorption of metal ions on bone char. *Industrial & Engineering Chemistry Research*, **42** (14), 3458-3469.

Full Text: [I\Ind Eng Che Res42, 3458.pdf](I/Ind%20Eng%20Che%20Res42,%203458.pdf)

Abstract: The ability for the sorption of the three metals onto bone char was demonstrated by a series of equilibrium isotherm studies. The Sips isotherm equation was found to give the most accurate correlation of the equilibrium relationship between these metal ions and bone char, and the equilibrium adsorption capacities of bone char for copper, zinc, and cadmium ion were determined to be approximately 0.80, 0.50, and 0.55 mmol/g, respectively. A film surface diffusion model, which is based on the assumption that the sorbate penetration rate is controlled by the external film diffusion and surface diffusion within the sorbent, has been developed to simulate the fixed bed sorption of copper, zinc, and cadmium ions onto bone char. A computer program based on a numerical solution using the finite difference method has been constructed and successfully simulated the metal ion-bone char column behavior. A new external mass transfer correlation was proposed and applied in the model. The effect of axial dispersion was tested and found to be not significant in these systems.

Keywords: Low Reynolds Numbers, Packed-Beds, Predictive Model, Activated Carbon, Aqueous-Solution, Diffusion-Model, Waste-Water, Adsorption, Adsorbers, Removal

Beolchini, F., Pagnanelli, F., Reverberi, A.P. and Vegliò, F. (2003), Copper biosorption onto *Rhizopus oligosporus*: pH-edge tests and related kinetic and equilibrium modeling. *Industrial & Engineering Chemistry Research*, **42** (20), 4881-4887.

Full Text: [I\Ind Eng Che Res42, 4881.pdf](I/Ind%20Eng%20Che%20Res42,%204881.pdf)

Abstract: In this paper copper biosorption on a specially propagated biomass of *Rhizopus oligosporus* has been studied considering kinetic and equilibrium aspects. A rough biomass characterization performed by titration tests suggested that over pH 3-4 all biomass active sites seem available for metal adsorption. A maximum copper-specific uptake of about 140 mg/g was observed at pH 5. Kinetic tests evidenced that the process is very fast: in fact, biosorption equilibrium is reached within the first 20 min. Furtermore, kinetic data were successfully modeled by second-order models. Equilibrium data were obtained by pH-edge tests, and copper uptake was modeled considering the pH and equilibrium concentration in solution as independent variables: different empirical and semiempirical models have been proposed to model biosorption equilibrium and successfully fitted to experimental data.

Keywords: Heavy-Metals, Sphaerotilus-Natans, *Arthrobacter* sp., Biomass, Adsorption, Cadmium, Single, Sorption, Systems, Removal

Guo, B., Hong, L. and Jiang, H.X. (2003), Macroporous poly(calcium acrylate-divinylbenzene) bead: A selective orthophosphite sorbent. *Industrial & Engineering Chemistry Research*, **42** (22), 5559-5567.

Full Text: [I\Ind Eng Che Res42, 5559.pdf](I/Ind%20Eng%20Che%20Res42,%205559.pdf)

Abstract: The objective of this work is to develop an anion sorbent that could offer chemically recognizable affinity with orthophosphite (H2PO3-) species from a binary aqueous solution containing hypophosphite (H2PO2-) as another solute. The macroreticular network, poly(calcium acrylate-divinylbenzene) [P(CaAc-DVB)], has been synthesized and identified to possess the desired chemical selectivity in this separation process. The resin takes advantage of the Lewis acid property of calcium ion, which shows different affinity with the two phosphite species. The P(CaAc-DVB) resin has the spherical shape (d = 0.1-0.3 mm); it was synthesized initially from the polymerization of divinylbenzene and methylacrylate (DVB/MA) in a suspension system. The porosity and pore-size distribution of the beads were adjusted primarily through the variation of the molar ratio DVB/MA and the use of a specific porogen system. The porous structure was found to be crucial for the accomplishment of high sorption efficiency and the preferred chemical selectivity. On the basis of the kinetic assessment of the competitive sorption reaction, it is found that the sorption process could be divided into three stages with using an intraparticle-diffusion model to simulate the kinetic data. A pseudo-second-order reaction model was also used to fit the kinetic data of the early sorption stage by assuming the reaction as the rate-limiting step. It is suggested that this sorption process is governed by the two different kinetic steps at different stages. The study conducted in this work attempts to develop a sorbent feasible ultimately for the rejuvenation of spent electroless nickel solution.

Keywords: Exchange Precipitation Resins, Ion-Exchange, Chitosan Beads, Sorption, Kinetics, Recovery, Removal, Bath

Gupta, V.K. and Sharma, S. (2003), Removal of zinc from aqueous solutions using bagasse fly ash a low cost adsorbent. *Industrial & Engineering Chemistry Research*, **42** (25), 6619-6624.

Full Text: [I\Ind Eng Che Res42, 6619.pdf](I/Ind%20Eng%20Che%20Res42,%206619.pdf)

Abstract: Bagasse fly ash, a sugar industry waste, has been converted into an inexpensive and efficient adsorbent. The product obtained has been characterized and utilized for the removal of zinc from aqueous solutions over a wide range of initial metal ion concentration (3.06×10-4 to 3.06×10-3 M), contact time (24 h), adsorbent dose (5-20 g L-1), and pH (1.0-6.0). The removal of Zn2+ is 100% at low concentrations, whereas it is 60-65% at higher concentrations at an optimum pH of 4.0, using 10 g L-1 of adsorbent in 6-8 h of equilibration time. The uptake decreases with a rise in temperature indicating the process to be exothermic in nature. Kinetic studies have been performed to understand the mechanism of adsorption. The removal takes place through film diffusion mechanism at lower concentrations (less than or equal to1.84×10-3 M) and by particle diffusion at higher concentrations (greater than or equal to3.06×10-3 M).

Keywords: Industry Waste Material, Activated Carbon, Heavy-Metals, Red Mud, Water, Adsorption, Biosorption, Sorption, Peat, Ions

Sinha, S., Pandey, K., Mohan, D. and Singh, K.P. (2003), Removal of fluoride from aqueous solutions by *Eichhornia crassipes* biomass and its carbonized form. *Industrial & Engineering Chemistry Research*, **42** (26), 6911-6918.

Full Text: [I\Ind Eng Che Res42, 6911.pdf](I/Ind%20Eng%20Che%20Res42,%206911.pdf)

Abstract: The purpose of this paper is to suggest an efficient defluoridation process that does not require a large investment. The conventional processes of fluoride removal from water are ion exchange, reverse osmosis, and electrodialysis. However, the utility of these processes has been limited because of their expensive operation and subsequent problem of disposing of the waste being generated. Sorption is an effective technology for the treatment of industrial wastewater. Eichhornia crassipes and the activated carbon derived from this plant were examined to assess their capacity for the removal of fluoride from wastewater by batch techniques. Systematic batch studies on fluoride adsorption equilibrium and kinetics by E. crassipes and low-cost activated carbons prepared from E. crassipes were carried out. Studies were conducted to determine the optimum operating system parameters required for the establishment of columns such as contact time, dose, and size of the adsorbent. The adsorption of fluoride on noncarbonized and carbonized E. crassipes increases with increasing temperature (25, 35, 45 degreesC), thereby indicating that the process is endothermic in nature in all of the cases examined. The adsorption data were very well fitted by the Freundlich adsorption isotherm model. The Lagergren first-order rate equation was applied for the determination of the rate constants. Carbonized E. crassipes showed better removal efficiency than the noncarbonized plant. Further, the activation temperatures in the preparation of activated carbon played an important role. Carbon activated at 600 degreesC exhibited better performance than that activated at 300 degreesC. Column studies were also performed with an initial concentration of 15 ppm. The effluent volume at breakthrough was found to be 100 bed volumes, and the column capacity was calculated as 4.4 mg/g.

Keywords: Waste-Water, Fertilizer Waste, Single-Component, Drinking-Water, Fly-Ash, Adsorption, Defluoridation, Groundwater, Rajasthan, Sorption

Gibbs, G., Tobin, J.M. and Guibal, E. (2004), Influence of chitosan preprotonation on reactive black 5 sorption isotherms and kinetics. *Industrial & Engineering Chemistry Research*, **43** (1), 1-11.

Full Text: [I\Ind Eng Che Res43, 1.pdf](I/Ind%20Eng%20Che%20Res43,%201.pdf)

Abstract: Reactive Black 5 was efficiently sorbed onto chitosan in acidic solutions through electrostatic attraction of anionic dye molecules to protonated amine groups of the polymer. Sorption capacities as high as 750-1000 mg of dye g-1 were obtained. The addition of chitosan to dye solution strongly affected the pH of the solution and the sorption efficiency. To avoid this variation of the pH, chitosan was conditioned in sulfuric acid solutions to prepare protonated chitosan. This preprotonation induced a significant lessening of sorption properties. This impact depended on dye concentration, sorbent dosage, and sorbent particle size. The ability of dyes to form aggregates in solution (depending on pH, dye concentration, and ionic strength) might partly explain the impact of the preprotonation on uptake performance. Indeed, the agglomeration of dye molecules affects the ionic size of the solute and consequently its diffusivity in the polymer network and accessibility to internal sites. Particle size, sorbent dosage, and dye concentration significantly affect sorption isotherms and kinetics.

Keywords: Aqueous-Solution, Heavy-Metals, Diffusion-Processes, Activated Carbons, Pore Diffusion, Color Removal, Anionic Dyes, Waste-Water, Azo Dyes, Adsorption

Martin, C. and Cuellar, J. (2004), Synthesis of a novel magnetic resin and the study of equilibrium in cation exchange with amino acids. *Industrial & Engineering Chemistry Research*, **43** (2), 475-485.

Full Text: [I\Ind Eng Che Res43, 475.pdf](I/Ind%20Eng%20Che%20Res43,%20475.pdf)

Abstract: Magnetic cation-exchange resins usually consist of small polymeric particles with a magnetic material dispersed within their structure. Because the mass-transfer kinetics through these solid particles depends on their size, very small diameter particles are desirable. Nevertheless, faster kinetics can also be obtained by using particles consisting of spherical magnetic cores covered with a thin layer of polymeric adsorbent material. In the present work, we describe the synthesis of a novel type of ion-exchange resin, in which the magnetic core was a single spherical stainless steel particle and the covering layer was poly(styrene-co-divinylbenzene). To check their ion-exchange characteristics, the equilibrium adsorption of the amino acids methionine, phenylalanine, and tryptophan on magnetic and nonmagnetic resins was investigated. The experimental results are explained in terms of a model that considers that the surface of the ion exchangers is heterogeneous, with two different types of adsorption sites with different selectivity coefficients. A higher fraction of sites with lower selectivity was found in the magnetic resins, resulting in adsorption isotherms slightly less rectangular than the isotherms obtained for the nonmagnetic resins.

Keywords: Solid-Phase Extraction, Stabilized Fluidized-Bed, Ion-Exchange, Protein Adsorption, Aqueous-Solutions, Polymeric Adsorbents, Controlled-Release, Alpha-Amylase, Particles, Beads

Prasad, M. and Saxena, S. (2004), Sorption mechanism of some divalent metal ions onto low-cost mineral adsorbent. *Industrial & Engineering Chemistry Research*, **43** (6), 1512-1522.

Full Text: [I\Ind Eng Che Res43, 1512.pdf](I/Ind%20Eng%20Che%20Res43,%201512.pdf)

Abstract: This paper investigates the underlying mechanism of uptake from aqueous solution of divalent metal cations (Pb2+, Cu2+, and Zn2+) by a low-cost mineral adsorbent. Batch adsorption studies were carried out for the concentration ranges of 24.1-2410 μmol/L for lead, 78.65-7865 μmol/L for copper, and 76.45-7645 μmol/L for zinc solutions under natural conditions. Two simple kinetic models, that is, pseudo-first-order and pseudo-second-order models, were tested to investigate the adsorption mechanism. All of the parameters of these models were calculated and are discussed. Rate constants were found to be nearly constant at all metal concentrations for the first-order model, whereas they gradually decreased with increasing metal concentration in the order Pb2+ > Cu2+ > Zn2+ for the second-order model. The sorption kinetics appears to be mainly controlled by liquid-film diffusion. External-diffusion and film-diffusion models were tested to evaluate mass-transfer coefficients and film-transfer constants at different initial concentrations of solute (metal cation). Both mass-transfer and film-transfer constants were noticed to be affected by the initial metal concentration. They gradually decreased with increasing initial concentration of metal cation in the order Pb2+ > Cu2+ > Zn2+. The film-diffusion model was found not to be applicable for the adsorption of lower concentrations of divalent cations. The equilibrium data were described to a lesser extent by Freundlich model, and the Langmuir model seemed to be more appropriate, giving maximum fixation capacities for Pb2+, Cu2+, and Zn2+ of 90.9, 270.2, and 250.0 μmol/g, respectively. The crystallographic dimensions of the treated mineral adsorbent samples were measured by X-ray diffraction (XRD), which revealed appreciable expansion of the crystal size as a result of the incorporation of divalent cations in the place of exchangeable cations of the adsorbent. The affinity order for the adsorption of cations by the mineral adsorbent is validated by ionic radius theory. Cation exchange along with complexation were found to be the most probable mechanisms for the sorption of divalent cations. An attempt was made to quantify the ion-exchange and complexation mechanisms.

Keywords: 25°C, Activated Carbon, Adsorption, Adsorption Mechanism, Aqueous, Aqueous-Solutions, Batch Adsorption, Cation Exchange, Complexation, Copper, Cu2+, Diffusion, Equilibrium, Expansion, First Order, Freundlich, Heavy-Metals, Inorganic Cation-Exchangers, Ion Exchange, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Model, Lead, Lead Orthophosphates, Mass Transfer, Mechanism, Mechanisms, Metal, Metal Ions, Model, Models, Pb2+, Pseudo Second Order, Pseudo-Second-Order, Removal, Second Order, Solute, Solutions, Sorption, Sorption Kinetics, Sorption Mechanism, Synthetic Hydroxyapatites, Theory, X-Ray Diffraction, Xrd, Zn2+

Garrote, G., Dominguez, H. and Parajo, J.C. (2004), Production of substituted oligosaccharides by hydrolytic processing of barley husks. *Industrial & Engineering Chemistry Research*, **43** (7), 1608-1614.

Full Text: [I\Ind Eng Che Res43, 1608.pdf](I/Ind%20Eng%20Che%20Res43,%201608.pdf)

Abstract: Barley husks have been subjected to nonisothermal treatments in aqueous media in order to cause the selective degradation of their hemicellulose fraction. The concentration profiles of araban, xylan, oligosaccharides, monosaccharides, furfural, furfural-degradation products, acetyl groups, and acetic acid have been experimentally measured. Kinetic models describing the time course of hemicellulose-decomposition products have been developed. On the basis of the model predictions, operational conditions leading to maximal concentrations of oligosaccharides (suitable as prebiotic components of foods) have been identified, and the hemicellulose-degradation products obtained under these conditions have been quantified. Additional experiments have been carried out to identify nonsaccharide byproducts present in autohydrolysis liquors.

Keywords: Xylo-Oligosaccharides, Xylooligosaccharide Production, Wood, Autohydrolysis, Pretreatment, Antioxidant, Components, Biomass, Acids

Wang, X.L., Pehkonen, S.O. and Ray, A.K. (2004), Removal of aqueous Cr(VI) by a combination of photocatalytic reduction and coprecipitation. *Industrial & Engineering Chemistry Research*, **43** (7), 1665-1672.

Full Text: [I\Ind Eng Che Res43, 1665.pdf](I/Ind%20Eng%20Che%20Res43,%201665.pdf)

Abstract: Semiconductor photocatalytic reduction is a relatively new technique for the removal of dissolved toxic metal ions from wastewater. In this paper, adsorption and photocatalytic reduction of Cr(VI) to Cr(III) inaqueous solutions by UV/TiO2 photocatalysis has been investigated. It has been observed that the pH of the solution plays an important role in this reaction. An acidic medium is favorable for Cr(VI) photocatalytic reduction, where 94% of Cr(VI) was photoreduced within 1 h at pH 3 when 2 g/L of TiO2 was used as the slurry. An adsorption study shows that the photocatalytic reduction mainly occurs on the surface of TiO2, The presence of Fe(III) improved the photocatalytic reduction of Cr(VI) because it was observed that an additional reaction between Fe(II) and Cr(VI) takes place in the UV/TiO2 reduction process. A new combination of photocatalytic reduction and metal ion coprecipitation using Fe(OH)3 for complete removal of aqueous Cr [Cr(VI) as well as Cr(III)] was designed, which reduced the chromium concentration from 30 ppm to 17 ppb for a simulated wastewater. Thermodynamic analysis showed that TiO2 cannot photoreduce Cr(III) to Cr(0), but reduction is possible with ZnS. When kinetic experiments were performed, it was observed that more than 86% of Cr(III) could be photoreduced to Cr(0) in 5 h with a ZnS catalyst.

Keywords: Environmental-Pollutant Cr(VI), Hexavalent Chromium, Semiconductor Photocatalysis, Light Illumination, Titanium-Dioxide, Ferrous Iron, Waste-Water, TiO2, Groundwater, Ions

Gupta, V.K., Suhas, Ali, I. and Saini, V.K. (2004), Removal of rhodamine B, fast green, and Methylene blue from wastewater using red mud, an aluminum industry waste. *Industrial & Engineering Chemistry Research*, **43** (7), 1740-1747.

Full Text: [I\Ind Eng Che Res43, 1740.pdf](I/Ind%20Eng%20Che%20Res43,%201740.pdf)

Abstract: Successful removal of rhodamine B, fast green, and Methylene blue from wastewater was achieved using red mud, an aluminum industry waste. The percentage removals of rhodamine B, fast green, and Methylene blue on this adsorbent were 92.5, 94.0, and 75.0, respectively. Studies were conducted to delineate the effects of initial absorbate concentration, pH, adsorbent dose, contact time, temperature, and adsorbent particle size. Up to 95-97% removals of rhodamine B, fast green, and Methylene blue were achieved in column experiments at a flow rate of 0.5 mL/min. The adsorption was found to be exothermic in nature. The developed system is very useful, rapid, and reproducible for the removal of the three dyes.

Keywords: Adsorption, Cadmium, Moss

Loukidou, M.X., Karapantsios, T.D., Zouboulis, A.I. and Matis, K.A. (2004), Diffusion kinetic study of chromium(VI) biosorption by *Aeromonas caviae*. *Industrial & Engineering Chemistry Research*, **43** (7), 1748-1755.

Full Text: [I\Ind Eng Che Res43, 1748.pdf](I/Ind%20Eng%20Che%20Res43,%201748.pdf)

Abstract: The removal of chromium from aqueous solution in a well-stirred batch reactor by sorption on *Aeromonas caviae* biomass particles, isolated from potable groundwater supplies, was investigated. Equilibrium and kinetic experiments were performed at various initial bulk concentrations, biomass loads, and temperatures, with promising results. It was seen that the sorption capacity is appreciable for most experimental conditions, so the biomass can be considered as a suitable biosorbent for applications. Moreover, the sorption rate of the metal ions was found to be particularly sensitive to both the initial bulk concentration and the biomass load. A detailed analysis was conducted examining several diffusion (external and intraparticle) kinetic models to identify a suitable rate expression, and interesting conclusions were reached. In this effort, information from SEM analyses and certain desorption runs was also incorporated.

Keywords: Heavy-Metals, Equilibrium, Sorption, Cadmium, Biomass, Removal

Loy, J.E., Guo, J.H. and Severtson, S.J. (2004), Role of adsorption fractionation in determining the CaCO3 scale inhibition performance of polydisperse sodium polyacrylate. *Industrial & Engineering Chemistry Research*, **43** (8), 1882-1887.

Full Text: [I\Ind Eng Che Res43, 1882.pdf](I/Ind%20Eng%20Che%20Res43,%201882.pdf)

Abstract: Results are reviewed from a study examining the influences of concentration and molecular weight of poly(acrylic acid) sodium salt on the inhibition of CaCO3 formation in solutions similar in ion composition and pH to those used in wood pulping operations. Calcium concentrations and temperatures were monitored in heated supersaturated solutions containing sodium polyacrylate samples to gauge their inhibition of CaCO3 nucleation. The presence of dissolved polymers raises the temperatures necessary to induce detectable nucleation. Nucleation temperatures were found to be strongly dependent on the molecular weight distribution of the sodium polyacrylates. Significantly higher temperatures were obtained from species with molecular weights estimated to be in the region of 5000-6000 g, mol, and contributions from adsorption fractionation and polymer-metal complexation appear present at higher concentrations. Testing of samples produced by mixing sodium polyacrylates of various molecular weight distributions indicates that high molecular weight species govern the observed inhibition under competitive adsorption conditions. This is consistent with the dominant role of adsorption thermodynamics in determining the influence of polymers on nucleation. Also presented is a semi-empirical equation for estimating the low concentration influence of mixed molecular weight distributions on nucleation temperatures using the inhibition performance of the individual components.

Keywords: Additives, Adsorption, Calcium-Carbonate, Competitive Adsorption, Copolymers, Crystallization, Growth, Low-Molecular-Weight, Monodisperse Polystyrene, Morphology, Polyelectrolytes, Precipitation, Wood

Lazaridis, N.K., Pandi, T.A. and Matis, K.A. (2004), Chromium(VI) removal from aqueous solutions by Mg-Al-CO3 hydrotalcite: Sorption-desorption kinetic and equilibrium studies. *Industrial & Engineering Chemistry Research*, **43** (9), 2209-2215.

Full Text: [I\Ind Eng Che Res43, 2209.pdf](I/Ind%20Eng%20Che%20Res43,%202209.pdf)

Abstract: In this study, the sorptive removal of hexavalent chromium from aqueous solutions by Mg-Al-CO3 hydrotalcite was investigated in a batch mode. The influence of solution pH, conditioning duration, initial chromium concentration, sorbent concentration, sorbent particle size, and temperature was tested at sorption kinetic runs. The influence of eluant concentration and volume was tested at desorption kinetic runs. Desorption experiments showed that the loaded material can be fully regenerated and reused. Four kinetic models have been evaluated if they fit the experimental data: the pseudo-first-order, a modified second-order, and two ion-exchange models. It showed that the second-order model could best describe the sorption and desorption kinetics. The Freundlich isotherm was used to fit equilibrium experiments. Hydrotalcite presented a sorption capacity of similar to17 mg Cr/g under the studied conditions. The calculated activation energy for the studied process was 24±2 kJ/mol.

Keywords: Activated Carbons, Waste-Water, Adsorption, Biosorption, Cr(VI), Anions, Ions, Adsorbents, Iron(III), Exchange

Liao, X.P., Zhang, M. and Shi, B. (2004), Collagen-fiber-immobilized tannins and their adsorption of Au(III). *Industrial & Engineering Chemistry Research*, **43** (9), 2222-2227.

Full Text: [I\Ind Eng Che Res43, 2222.pdf](I/Ind%20Eng%20Che%20Res43,%202222.pdf)

Abstract: Novel adsorbents that have an excellent adsorption capacity for Au(III) were prepared by immobilization of bayberry tannins and larch tannins onto collagen fiber matrixes. When the initial concentration of Au(III) was 478 mg/L and the amount of adsorbent was 20.0 mg, the adsorption capacities at equilibrium of immobilized bayberry tannins and larch tannins were 877 and 784 mg(Au(III))/g respectively at 303 K. As the temperature was increased, the adsorption capacities were further increased. At a temperature of 323 K, the adsorption capacities at equilibrium of the immobilized tannins were as high as 1.50×103 and 1.36×103 Mg-Au(III)/g, respectively. The adsorption equilibrium data for Au(III) on the immobilized tannins can be well fitted by the Langmuir model, and the mechanism of the adsorption was found to be chemical adsorption. Furthermore, the adsorption isotherms of Au(III) in buffer solutions with different pH values could also be described by the Langmuir model, and the adsorption capacities increased at lower pH values. The kinetics of the adsorption can be well described by a pseudo-second-order rate model, and the adsorption capacities calculated by the pseudo-second-order rate model were close to the values actually measured at higher temperatures. It was found that the breakthrough point of the adsorption column was at 223 bed volumes for the experimental system, indicating that the immobilized tannins have an outstanding ability to concentrate Au(III). The mass-transfer coefficient of Au(III) adsorption in the adsorption column determined by the Adams-Bohart equation was 3.34×10-5 L/(mg(.)min).

Keywords: Gold, Recovery, Uranium, Polyphenols, Biomass, Copper, Ions

Unnithan, M.R., Vinod, V.P. and Anirudhan, T.S. (2004), Synthesis, characterization, and application as a chromium(VI) adsorbent of amine-modified polyacrylamide-grafted coconut coir pith. *Industrial & Engineering Chemistry Research*, **43** (9), 2247-2255.

Full Text: [I\Ind Eng Che Res43, 2247.pdf](I/Ind%20Eng%20Che%20Res43,%202247.pdf)

Abstract: The amine-modified polyacrylamide-grafted coconut coir pith carrying -NH3+Cl- functional group at the chain end (PGCP-NH3+Cl-) was investigated as an adsorbent for its possible application for the removal of chromium(VI) from aqueous solution and wastewater. The infrared spectroscopy results were used to confirm the graft copolymer formation and -NH3+Cl- functional group. The grafting of polyacrylamide onto the coir pith improved the thermal stability of the adsorbent and enhanced the apparent activation energy for the thermal degradation of PGCP-NH3+Cl- X-ray diffraction pattern and scanning electron microscopy (SEM) studies were carried out to investigate the crystallinity and morphology of the adsorbent. The decrease in crystalline domains in PGCP-NH3+Cl- results in the loss of tensile strength of the grafted chain and consequently enhances the free mobility of the grafted chain. Batch adsorption technique using PGCP-NH3+Cl- was applied for the removal of chromium(VI) anion from aqueous solution and wastewater. The maximum adsorption of 99.4% (12.43 mg/g) took place from an initial concentration of 25.0 mg/L Cr(VI) at 30degreesC, pH 3.0, and an adsorbent dosage of 2.0 g/L. The kinetics of sorption of Cr(VI) ions were described by a pseudo-second-order kinetic model. The temperature dependence indicates the exothermic nature of the process. Equilibrium isotherms were determined for different temperatures and the results are analyzed using the Langmuir and Freundlich isotherm equations. Adsorption isotherm experiments were also conducted for comparison using a commercial chloride form Dowex, a strong base (quaternary amine functionality) anion exchanger. Quantitative removal of 22.7 mg/L Cr(VI) in 50 mL of electroplating industry wastewater by 125 mg of PGCP-NH3+Cl- was observed at pH 3.0. Alkali regeneration was also tried for several cycles with a view to recover the adsorbed metal ions and also to restore the sorbent to its original state.

Keywords: Aqueous-Solutions, Activated Carbon, Metal-Ions, Adsorption, Removal, Kinetics, Sorption, Sawdust, Polymerization, Exchangers

Várhegyi, G., Grønli, M.G. and Di Blasi, C. (2004), Effects of sample origin, extraction, and hot-water washing on the devolatilization kinetics of chestnut wood. *Industrial & Engineering Chemistry Research*, **43** (10), 2356-2367.

Full Text: [I\Ind Eng Che Res43, 2356.pdf](I/Ind%20Eng%20Che%20Res43,%202356.pdf)

Abstract: The variations in chemical composition and the effects of sample origin and pretreatments represent a major problem in the kinetic modeling of wood pyrolysis. This study aims to a deeper understanding of these issues by examining a species, chestnut (Castanea sativa), that contains a higher amount of extractives than the common forest hardwoods of the temperate zone. Thermogravimetric and kinetic analyses were carried out on five chestnut samples obtained from plants grown in France, Italy, and Russia. The results were compared to that of a widely used and investigated species (beech) belonging to the same plant family. Degradation takes place over a narrower range and at lower temperatures, giving higher yields of char. In all cases, hot-water washing causes a decrease in the fixed carbon content and char yield, an increase in the peak rate, a better separation between pseudo-component dynamics, and a displacement of the reaction zones toward higher temperatures. Though with some scatter and quantitatively lower, the same effects are also observed as a consequence of acetone extraction. Both pretreatments act to reduce the differences between chestnut samples and with beech, but peculiarities due to origin and species are preserved. The three parallel reaction mechanism for the hemicellulose, cellulose, and lignin, with the same activation energies previously determined for other hardwood species by Gronli et al. (Ind. Eng. Chem. Res. 2002, 41, 4201) is still acceptable for engineering applications. In contrast, predictions of the process details require single curves evaluations, resulting in kinetic data specific to sample origin, except for the activation energy of the lignin devolatilization step. Kinetic parameters also indicate that the lower char yields, associated with pretreatments, are chiefly due to alterations in the cellulose decomposition kinetics, whereas the effects on the other two components nearly compensate each other. Finally, reliable evaluations are provided of experimental uncertainties associated with repeatability of experiments and reproducibility of sample properties.

Keywords: Biomass Pyrolysis, Cellulose Pyrolysis Kinetics, Degradation, Model, Olive Stones, Rice Hull Pyrolysis, Thermal-Decomposition, Thermogravimetric Analysis, Vacuum Pyrolysis, Washed Straw

Yantasee, W., Lin, Y.H., Fryxell, G.E., Alford, K.L., Busche, B.J. and Johnson, C.D. (2004), Selective removal of copper(II) from aqueous solutions using fine-grained activated carbon functionalized with amine. *Industrial & Engineering Chemistry Research*, **43** (11), 2759-2764.

Full Text: [I\Ind Eng Che Res43, 2759.pdf](I/Ind%20Eng%20Che%20Res43,%202759.pdf)

Abstract: To develop an effective transition-metal-ion adsorbent material, functionalization of amine (-NH2) onto fine-grained activated carbon (AC) was performed via the electrophilic aromatic substitution of nitro (-NO2) groups onto the aromatic backbone of the AC, followed by reduction of -NO2 to -NH2. Fourier transform infrared, Brunauer-Emmett-Teller surface area analysis, gravimetric method, and batch metal ion adsorption experiments were performed in parallel on unmodified AC and amine-functionalized AC (NH2-AC). The competitive adsorption of transition-metal ions (Cd2+, Cu2+, Ni2+, and Pb2+) was measured in batch experiments at PH 2.0-5.8. Metal ions favored the NH2-AC over the unmodified AC. Based on the distribution coefficients (Kd), the NH2-AC had an affinity for metal ions in decreasing order of Cu2+ much greater than Pb2+ > Ni2+ > Cd2+. On the NH2-AC, the copper adsorption equilibrium was reached within 1 min with a saturation loading capacity of 0.86 mmol of Cu/g, 2.5 times greater than that on the unmodified AC. The Langmuir and Redlich-Peterson isotherm models were used successfully to characterize the Cu2+ adsorption isotherms. Having Kd values up to 100 000, the NH2-AC is a useful adsorbent material for removing Cu2+ from aqueous wastes.

Keywords: Heavy-Metals, Competitive Adsorption, Ions, Cadmium, Zinc, Equilibrium, Separation, Sorption, Isotherm, Binding

? Tsotsis, T.T., Patel, H., Najafi, B.F., Racherla, D., Knackstedt, M.A. and Sahimi, M. (2004), Overview of laboratory and modeling studies of carbon dioxide sequestration in coal beds. *Industrial & Engineering Chemistry Research*, **43** (12), 2887-2901.

Full Text: [2004\Ind Eng Che Res43, 2887.pdf](2004/Ind%20Eng%20Che%20Res43,%202887.pdf)

Abstract: One of the approaches suggested for sequestering CO2 is by injecting it in coal-bed methane (CBM) reservoirs. Despite its potential importance for CO2 sequestration, to our knowledge, CO2 injection in CBM reservoirs for the purpose of sequestration has not been widely studied. Furthermore, a key element missing in most of the existing studies is the comprehensive characterization of the CBM reservoir structure. CBM reservoirs are complex porous media because in addition to their primary pore structure, generated during coal formation, they also contain a variety of fractures, which may potentially play a key role in CO2 sequestration because they generally provide high permeability flow paths for both CO2 and CH4. In this paper, we present an overview of our ongoing experimental and modeling efforts, which aim to investigate the injection, adsorption, and sequestration of CO2 in CBM reservoirs, the enhanced CH4 production that results, and the main factors that affect the overall operation. We describe the various experimental techniques that we utilize and discuss their range of application and the value of the data generated. We conclude with a brief overview of our modeling efforts aiming to close the knowledge gap and fill the need in this area.

Keywords: Adsorption, Carbon, Carbon Dioxide, Characterization, CO2, Experimental, Gas-Mixtures, Knowledge, Media, Modeling, Molecular-Dynamics Simulation, Multiple Families, Nanoporous Materials, Overview, Permeability, Porous Media, Primary, Separation, Sieve Membranes, Statistical-Mechanics, Transport Paths

Bernardo, G., Telesca, A., Valenti, G.L. and Montagnaro, F. (2004), Role of ettringite in the reuse of hydrated fly ash from fluidized-bed combustion as a sulfur sorbent: A hydration study. *Industrial & Engineering Chemistry Research*, **43** (15), 4054-4059.

Full Text: [I\Ind Eng Che Res43, 4054.pdf](I/Ind%20Eng%20Che%20Res43,%204054.pdf)

Abstract: Waste from fluidized-bed combustion (FBC) has a low potential for reuse. One possibility for its recycling lies in a hydration process aimed at reactivating the SO2 sorption ability of the unconverted lime. The formation of ettringite, as well as calcium hydroxide, in the hydrated FBC fly ash to be reinjected into the reactor could be of importance because ettringite is able to play a chemical and physical role in SO2 capture. The aim of this paper is to investigate the conditions under which ettringite is formed by the liquid-phase hydration of FBC waste. To this end, two industrial FBC fly ashes were hydrated at temperatures of 20 and 70 degreesC, for curing times ranging from 30 min to 96 h. Ettringite concentrations and hydration levels of up to 50 and 74%, respectively, were measured. The experimental data were also employed to set up a simple kinetic model for ettringite synthesis. With respect to the CaSO4 concentration, this reaction was of first order for hydration times up to 8 h and of second order thereafter. In this work, the main characterization techniques employed were X-ray fluorescence, X-ray diffraction, and differential thermal and thermogravimetric analyses. Thermogravimetric analysis was also used for quantitative purposes.

Keywords: High-Temperature Reaction, Fbc Residues, Calcium Sulfoaluminate, Crystal Structure, SO2 Removal, Flue-Gas, Limestone, Desulfurization, Reactivation, Dioxide

Nabarlatz, D., Farriol, X. and Montane, D. (2004), Kinetic modeling of the autohydrolysis of lignocellulosic biomass for the production of hemicellulose-derived ligosaccharides. *Industrial & Engineering Chemistry Research*, **43** (15), 4124-4131.

Full Text: [I\Ind Eng Che Res43, 4124.pdf](I/Ind%20Eng%20Che%20Res43,%204124.pdf)

Abstract: Xylose-based oligosaccharides produced from xylan-rich hemicelluloses (xylo-oligomers) are carbohydrates with potential food and pharmaceutical uses. Autohydrolysis of lignocellulosic biomass is an efficient way to produce xylo-oligomers in a reasonable yield and a wide variety of compositions (anhydroarabinose/anhydroxylose and acetyl/anhydroxylose mass ratios). In this work, we develop a kinetic model for the autohydrolysis of xylan in lignocellulosic biomass that describes the yields of the different reaction products and explains the changes in the chemical composition of the xylo-oligomers due to reaction temperature and time. This model assumes that xylan is made up of three monomers (xylose, arabinose, and acetic acid) and that there are two xylan fractions with different compositions and reactivities toward hydrolysis. Both fractions are hydrolyzed to xylo-oligomers, which are hydrolyzed to xylose, arabinose, and acetic acid. Finally, monosaccharides dehydrate to furfural and degradation products. The model is validated with experimental data obtained for the autohydrolysis of corncobs in a batch reactor system at temperatures from 150 to 190 degreesC. The amount and composition of each xylan fraction, as well as the activation energies and frequency factors for all the reactions, are calculated from the experimental data. This model provides a satisfactory interpretation of the experimental data.

Keywords: Herpes-Simplex-Virus, Complex-Systems, Xylooligosaccharide Production, Phenomenological Kinetics, Sulfated Polysaccharides, Hardwood Prehydrolysis, Severity Parameter, Almond Shells, Pretreatment, Fractionation

? Papini, M.P., Saurini, T., Bianchi, A., Majone, M. and Beccari, M. (2004), Modeling the competitive adsorption of Pb, Cu, Cd, and Ni onto a natural heterogeneous sorbent material (Italian “Red soil”). *Industrial & Engineering Chemistry Research*, **43** (17), 5032-5041.

Full Text: [I\Ind Eng Che Res43, 5032.pdf](I/Ind%20Eng%20Che%20Res43,%205032.pdf)

Abstract: The use of Italian “Red Soil” as an alternative low-cost sorbent material has been investigated for heavy metal removal in multicomponent systems. Pb, Cu, Cd, and Ni adsorption was studied at fixed pH (6.0) and constant ionic strength (0.1 mol L-1 by NaNO3) by a flowthrough reactor setup performing monocomponent and binary adsorption tests and sequential extraction. The whole set of experimental data was represented by a competitive model based on the surface complexation concept. High Pb and Cu adsorption was largely due to a surface complexation mechanism, whereas lower Cd and Ni adsorption was due to cation-exchange reactions. Sequential extraction results independently substantiated the different adsorption behavior. Pb and Cu adsorption was not significantly affected by the presence of the other metals, whereas Cd and Ni strongly compete with each other and were displaced in the presence of Pb and Cu. “Red Soil” was effective in the removal of heavy metals from contaminated aqueous streams in competitive conditions if compared with other low-cost sorbents.

? Sreeram, K.J., Saravanabhavan, S., Rao, J.R. and Nair, B.U. (2004), Use of chromium-collagen wastes for the removal of tannins from wastewaters. *Industrial & Engineering Chemistry Research*, **43** (17), 5310-5317.

Full Text: [2004\Ind Eng Che Res43, 5310.pdf](2004/Ind%20Eng%20Che%20Res43,%205310.pdf)

Abstract: The ability of chromium-collagen compounds-chromium shavings from the leather industry-for the removal of vegetable tannins from mixed effluents containing tannins and chromium has been studied. The experimental equilibrium data for the tannin-shavings system has been analyzed using the linearized forms of Langmuir, Freundlich, and Scatchard isotherms. The Freundlich isotherm was found to provide the best theoretical correlation of the experimental data for the adsorption of tannin. The 1/n value for tannin adsorption was found to be 0.799, indicating the suitability of the material for adsorption process. A theoretical model evaluated in the study provided sufficient correlation and enabled development of parameters such as treatment time, sorbent weight, etc., required for maximum adsorption. The tannin adsorbed shavings were used for the preparation of chromium(III) sulfate. The chromium left behind after near complete removal of tannins was recovered by precipitative techniques and subsequently redissolved in sulfuric acid to generate chromium(III) sulfate. The prepared and recovered chromium(III) sulfate on use in tanning process gave results similar to those of conventional chromium(III) salts, thereby providing a new methodology for the reuse of waste products of the leather industry directly into the leather industry itself.

Keywords: Leather Industry, Adsorption, Dye, Equilibrium, Chitosan, Shavings, Sorbents, Sorption, Recovery, Options

Chern, J.M., Lee, W.F. and Hsieh, M.Y. (2004), Absorption isotherm of caffeine and release kinetics from swollen NIPAAm hydrogels: Experiments and modeling. *Industrial & Engineering Chemistry Research*, **43** (19), 6150-6156.

Full Text: [I\Ind Eng Che Res43, 6150.pdf](I/Ind%20Eng%20Che%20Res43,%206150.pdf)

Abstract: A series of NIPAAm-based hydrogels, including nonionic, cationic, and anionic types, was prepared by the free radical polymerization method, and the absorption equilibriums and release kinetics of caffeine in the prepared hydrogels were experimentally measured at 25 °C. The experimental absorption data were successfully correlated by the Langmuir isotherm model that results in the same absorption equilibrium constant for the same type of hydrogels and relative affinity sequence: anionic types > cationic types > nonionic types. The maximum caffeine absorption capacity significantly increases with the swelling ratio of the nonionic and cationic hydrogels, while it slightly decreases with the swelling ratio for the anionic hydrogels. The caffeine release kinetic data were analyzed, and the effective diffusion coefficients in different hydrogels were estimated by the traditional and a modified mass transfer model, respectively. The results show that the traditional model underestimates the effective diffusion coefficients, while the modified model provides more accurate estimation of the effective diffusion coefficients. For the same type of hydrogels, the diffusion coefficients estimated by the modified model increase with the swelling ratio of the hydrogels.

Ho, Y.S. (2004), Comments on “Collagen-fiber-immobilized tannins and their adsorption of Au(III)”. *Industrial & Engineering Chemistry Research*, **43** (19), 6265.

Full Text: [I\Ind Eng Che Res43, 6265.pdf](I/Ind%20Eng%20Che%20Res43,%206265.pdf) [I\Ind Eng Che Res-Ho.pdf](I/Ind%20Eng%20Che%20Res-Ho.pdf)

Keywords: Metal-Ions, Sorption, Peat

Liao, X.P., Zhang, M.N. and Shi, B. (2004), Rebuttal to the comments by Yuh-Shan Ho on “Collagen-fiber-immobilized tannins and their adsorption of Au(III)”. *Industrial & Engineering Chemistry Research*, **43** (19), 6266.

Full Text: [I\Ind Eng Che Res43, 6266.pdf](I/Ind%20Eng%20Che%20Res43,%206266.pdf)

? Uzun, L., Yavuz, H., Say, R., Ersoz, A. and Denizli, A. (2004), Poly(ethylene dimethacrylate-glycidyl methacrylate) monolith as a stationary phase in dye-affinity chromatography. *Industrial & Engineering Chemistry Research*, **43** (20), 6507-6513.

Full Text: [2004\Ind Eng Che Res43, 6507.pdf](2004/Ind%20Eng%20Che%20Res43,%206507.pdf)

Abstract: Porous monolith was obtained by the bulk polymerization of ethylene dimethacrylate (EDMA) and glycidyl methacrylate (GMA) conducted in a glass tube. Poly(EDMA-GMA) monolith had a specific surface area of 98.7 m2/g. Poly(EDMA-GMA) monolith was characterized by swelling studies, FTIR, scanning electron microscopy, and elemental analysis. Poly(EDMA-GMA) monolith with a swelling ratio of 48%, and containing 45.7 μmol Cibacron Blue F3GA/g, were used in the adsorption/desorption of human serum albumin (HSA) from aqueous solutions and human plasma. The nonspecific adsorption of HSA was very low (0.8 mg/g). The maximum amount of HSA adsorption from aqueous solution in phosphate buffer was 22 mg/g at pH 5.0. Higher HSA adsorption value was obtained from human plasma (up to 53.2 mg/g) with a purity of 92%. Desorption of HSA from Cibacron Blue F3GA-attached poly(EDMA-GMA) monolith was obtained using 0.1 M Tris/HCl buffer containing 0.5 M NaCl. It was observed that HSA could be repeatedly adsorbed and desorbed with poly(EDMA-GMA) monolith without significant loss in the adsorption capacity.

Keywords: Adsorption, Binding, Capillary Electrochromatography, Cibacron Blue F3GA, Column Chromatography, Human Plasma, Membranes, Protein Separation, Purification, Serum-Albumin, Supports

? Canizares, P., Saez, C., Lobato, J. and Rodrigo, M.A. (2004), Electrochemical oxidation of polyhydroxybenzenes on boron-doped diamond anodes. *Industrial & Engineering Chemistry Research*, **43** (21), 6629-6637.

Full Text: [2004\Ind Eng Che Res43, 6629.pdf](2004/Ind%20Eng%20Che%20Res43,%206629.pdf)

Abstract: The electrochemical oxidation of phenol (Ph), hydroquinone (HQ), and 1,2,4-trihydroxybenzene (THB) using a diamond thin-film anode has been studied. Within the parameter ranges used (temperature 15-60 degreesC, initial concentration 1.1-36 mmol dm-3, current density 15-60 mA cm-2), almost complete mineralization of the organic waste is obtained. Carbon dioxide is the sole final product, and the main intermediates are carboxylic acids C-4 and C-2. Both direct and mediated electrochemical oxidation processes are involved in the electrochemical treatment. Sulfates contained in the waste favor the formation of electrogenerated reagents (persulfates). The instantaneous current efficiency was found to depend only on the controlling mechanism (mass transfer or electrode kinetics). The current efficiency of the process is 1 if it is kinetically controlled and decreases linearly to 0 from the chemical oxygen demand limit value if it is diffusion controlled. Taking into account the information obtained in previous works and the results of the voltammetric and galvanostatic studies of the present work, a simple mechanistic model is proposed to justify the processes involved in the electrochemical oxidation of polyhydroxybenzenes.

Keywords: Waste-Water Treatment, High Overvoltage Anodes, Aqueous Phenol Wastes, Thin-Film Electrodes, P-Nitrophenol, SnO2 Anodes, 4-Chlorophenol, Chlorophenols, Degradation, Destruction

Tsai, W.T., Hsien, K.J. and Lai, C.W. (2004), Chemical activation of spent diatomaceous earth by alkaline etching in the preparation of mesoporous adsorbents. *Industrial & Engineering Chemistry Research*, **43** (23), 7513-7520.

Full Text: [I\Ind Eng Che Res43, 7513.pdf](I/Ind%20Eng%20Che%20Res43,%207513.pdf)

Abstract: This work was to study the activation regeneration of spent diatomaceous earth (SDE) for the preparation of mesoporous silica adsorbents by using alkaline activation method. Under the experimental conditions investigated, it was found that the alkaline activation method by sodium hydroxide under the controlled conditions significantly etched to proceed inwardly to the interior of the existing pore structure in the clay minerals, leaving a framework possessing a large Brunauer-Emmett-Teller surface area (over 100 m2/g) and total pore volume (over 0.3 cm3/g). The results indicated that these samples are type IV with a hysteresis loop. This observation was also in close agreement with the examinations on the scanning electron microscopy, X-ray diffraction, and Fourier transform infrared. Further, the adsorption rate of methylene blue onto the resulting clay adsorbent can be well described with the pseudo-second-order reaction model. The physical properties of the diatomaceous earth and resulting adsorbent were also consistent with the parameters obtained from the fittings of the common isotherms (Langmuir and Freundlich).

Keywords: Low-Cost Adsorbents, Acid Activation, Waste-Water, Clay, Removal, Adsorption, Dye, Montmorillonite, Sorption, Paraquat

Namasivayam, C. and Sumithra, S. (2004), Adsorptive removal of catechol on waste Fe(III)/Cr(III) hydroxide: Equilibrium and kinetics study. *Industrial & Engineering Chemistry Research*, **43** (23), 7581-7587.

Full Text: [I\Ind Eng Che Res43, 7581.pdf](I/Ind%20Eng%20Che%20Res43,%207581.pdf)

Abstract: The adsorption of catechol onto “waste” Fe(III)/Cr(III) hydroxide was investigated to assess the possible use of this adsorbent. The influence of various parameters such as agitation time, catechol concentration, adsorbent dose, pH, and temperature has been studied. Equilibrium adsorption data followed both Langmuir and Freundlich isotherms. Adsorption followed second-order rate kinetics. The Langmuir adsorption capacity (Qo) was found to be 4.0 mg/g of the adsorbent. Acidic pH was favorable for the adsorption of catechol. Desorption studies showed that chemisorption seems to be the major mode of the adsorption process. Thermodynamic parameters such as DeltaGdegrees, DeltaHdegrees, and DeltaSdegrees for the adsorption were evaluated.

Keywords: Aqueous-Solution, Carbon, Water, Phenols, 2-Chlorophenol, Rates, Dye

? Pandit, P. and Basu, S. (2004), Dye and solvent recovery in solvent extraction using reverse micelles for the removal of ionic dyes. *Industrial & Engineering Chemistry Research*, **43** (24), 7861-7864.

Full Text: [2004\Ind Eng Che Res43, 7861.pdf](2004/Ind%20Eng%20Che%20Res43,%207861.pdf)

Abstract: Among the several methods, dye removal from water by solvent extraction using reverse micelles is promising in terms of the simplicity and efficiency of the process. The recovery of solvent and reuse of dye after its removal is related to the economic viability of the process. In the present study, backward extraction or recovery of dye into an aqueous phase from the solvent phase by using a counterionic surfactant after forward extraction is experimentally studied using a simple mixer and settler arrangement. The backward extraction of dye also resulted in the recovery of solvent. The effects of different parameters, such as the surfactant concentration, pH, and KCl concentration on the recovery of methyl orange and methylene blue dyes, are investigated. The percentage of both cationic and anionic dyes recovered increases with an increase in the counterionic surfactant concentration or with a decrease in the KCl concentration. The percentage of recovery of anionic methyl orange increases with a decrease in pH, whereas that for cationic methylene blue increases with an increase in pH. Selective removal of dye from a cationic and anionic dye mixture was experimentally studied by treating the dye mixture with reverse micelles of anionic and cationic surfactants in a stepwise manner. The results obtained are explained based on electrostatic interaction between the surfactant and dye.

? Won, S.W., Choi, S.B., Chung, B.W., Park, D., Park, J.M. and Yun. Y.S. (2004), Biosorptive decolorization of reactive orange 16 using the waste biomass of *Corynebacterium glutamicum*. *Industrial & Engineering Chemistry Research*, **43** (24), 7865-7869.

Full Text: [2004\Ind Eng Che Res43, 7865.pdf](2004/Ind%20Eng%20Che%20Res43,%207865.pdf)

Abstract: The protonated waste biomass of *Corynebacterium glutamicum* discharged from an industrial lysine fermentation plant was used for the removal of Reactive Orange 16 (RO16). The maximum sorption capacities of the biomass were as high as 186.6 ± 7.1 and 154.8 ± 2.8 mg g-1 at pH 1 and 2, respectively, which are comparable to those of commercial sorbents such as activated carbons and ion-exchange resins. As the solution pH decreased, the dye uptake increased and, under neutral conditions, it was negligible. Because the RO16 molecule has two negatively charged sulfonate groups, it is likely that the dye cannot be bound to a negatively charged carboxyl and/or phosphonate sites of the biomass. Instead, positively charged amine-occurring protein molecules seem to be dye binding sites. The uptake of RO16 was not significantly affected by a high concentration of salts, and the biomass could be repeatedly reused up to eight times per sorption/desorption cycle, reflecting that the biomass wastes deserve to be a potential regenerable biosorbent for dye removal.

? Lv, L., Tsoi, G. and Zhao, X.S. (2004), Uptake equilibria and mechanisms of heavy metal ions on microporous titanosilicate ETS-10. *Industrial & Engineering Chemistry Research*, **43** (24), 7900-7906.

Full Text: [I\Ind Eng Che Res43, 7900.pdf](I/Ind%20Eng%20Che%20Res43,%207900.pdf)

Abstract: In this study, the uptake equilibria and mechanisms of heavy metal ions Pb(II), Cu(II), Cd(II), and Zn(II) on microporous titanosilicate ETS-10 were attempted in the absence and presence of background electrolyte NaNO3 of different concentrations in batch systems. The uptake properties of the metals were found to be related to the zeta (ú) potential profile of ETS-10 and the characteristics of the heavy metals in terms of their hydrolysis, hydrated ionic radii, and hydration energies. The ionic strength of NaNO3 and the pH were observed to have a significant impact on the equilibrium uptake capacity due to the competition of Na+ and proton and the variation of surface electrochemical properties of ETS-10 adsorbent. The desorption data of counterions indicated that ion exchange is mainly responsible for the uptake of heavy metals Cu(II), Cd(II), and Zn(II), while other mechanisms such as adsorption and complexation may be cooperative in addition to ion exchange in the case of Pb(II) uptake on ETS-10 solid.

Mohan, D., Singh, K.P. and Singh, V.K. (2004), Removal of hexavalent chromium from aqueous solution using low-cost activated carbons derived from agricultural waste materials and activated carbon fabric cloth. *Industrial & Engineering Chemistry Research*, **44** (4), 1027-1042.

Full Text: [I\Ind Eng Che Res44, 1027.pdf](I/Ind%20Eng%20Che%20Res44,%201027.pdf)

Abstract: This paper examines an efficient adsorption process for the treatment of tannery wastewater. A variety of low-cost activated carbons were developed from agricultural waste materials, characterized, and utilized for the removal of hexavalent chromium from wastewater. Systematic studies on chromium(VI) adsorption equilibrium and kinetics by low-cost activated carbons as well as commercially available activated carbon fabric cloth were carried out at different temperatures, particle size, pH, and adsorbent doses. Both Langmuir and Freundlich models fitted the adsorption data quite reasonably. The results indicate that the Langmuir adsorption isotherm model fits the data better than the Freundlich adsorption isotherm model. Further, the data are better correlated with the nonlinear form than the linear one. The kinetic studies were conducted to delineate the effects of temperature, initial adsorbate concentration, adsorbent particle size, and solid-to-liquid ratio. The adsorption of Cr(VI) follows pseudo-second-order rate kinetics. On the basis of these studies, various parameters such as the effective diffusion coefficient, activation energy, and activation entropy were evaluated to establish the mechanisms. The adsorption capacities of the tested adsorbents was found to be comparable to those of the available adsorbents/activated carbons.

Keywords: Cr(VI) Removal, Ion-Exchange, Red Mud, Water, Adsorption, Kinetics, Reduction, Adsorbent, Charcoal, Biosorption

Liu, C.C., Kuang-Wang, M. and Li, Y.S. (2005), Removal of nickel from aqueous solution using wine processing waste sludge. *Industrial & Engineering Chemistry Research*, **44** (5), 1438-1445.

Full Text: [I\Ind Eng Che Res44, 1438.pdf](I/Ind%20Eng%20Che%20Res44,%201438.pdf)

Abstract: Wine processing waste sludge (WPWS) has been shown to be an effective sorbent for sorption of some heavy metals (i.e., lead and chromium), but the sorption mechanism of heavy metal by WPWS has remained obscure. The objective of this study was to explore the sorption mechanism of WPWS for heavy metals using nickel (Ni) as the sorbate. The WPWS has been characterized with wet chemistry, infrared (IR), X-ray diffraction, scanning electron microscopy (SEM), carbon13 magic-angle nuclear magnetic resonance (C-13 NMR), and energy-dispersive spectrometry chemical analyses. The sludge contained high organic carbon (40.5%), nitrogen (23.4%), and cation-exchange capacity (1218 cmol(c) kg-1).SEM investigation of WPWS showed porous-like activated carbon. IR analysis of WPWS revealed that R-NH2 and R-COOH were the major functional groups. The proportion of organic functional groups in WPWS quantified by 13 C NMR analysis was in the following order: alkyl-C > carboxyl-C > N-alkyl-C > aromatic-C > O-alkyl-C > acetal-C > phenolic-C. The parameters affecting the sorption of Ni were the pH, initial concentration of Ni, particle size of WPWS, and reaction temperature. The WPWS sorption isotherms of Ni are only well described by the Langmuir sorption isotherm. A pseudo-second-order sorption kinetic model describes successfully the kinetics of sorption of Ni onto WPWS at different operation parameters (i.e., pH, initial Ni concentration, and particle size). Under the steady-state reaction conditions, the Gibb free energy (DeltaGdegrees) ranges from -18.969 to -23.616 kJ mol-1, and DeltaHdegrees and DeltaSdegrees are 3.366 kJ mol-1 and 6.056 J mol-1 K-1, respectively, indicating that higher temperature favors spontaneous reaction for Ni sorption by WPWS. According to the thermodynamic sorption parameters under steady-state conditions, this sorption is a spontaneous and endothermic reaction. The sorption mechanisms include physical adsorption and chemical complexation. Amino and carboxyl groups are the prominent functional groups interacting with Ni. The sorption capacity is influenced by several parameters such as the pH, initial Ni concentration, temperature, and particle size of WPWS.

Keywords: Activated Carbon, Reactive Dyes, Lead Removal, Metal-Ions, Adsorption, Kinetics, Chitosan, Sorption

? Allen, S.J., Gan, Q., Matthews, R. and Johnson, P.A. (2005), Mass transfer processes in the adsorption of basic dyes by peanut hulls. *Industrial & Engineering Chemistry Research*, **44** (6), 1942-1949.

Full Text: [2005\Ind Eng Che Res44, 1942.pdf](2005/Ind%20Eng%20Che%20Res44,%201942.pdf)

Abstract: Waste peanut hulls, a low-cost and abundantly available material in parts of the world, are shown to act as an adsorbent for basic dyes. The extent of dye uptake was determined in standardized batch adsorbers. The effect of process variables such as the initial dye concentration, the mass of adsorbent, and the agitation speed on uptake during the batch adsorption was evaluated. Increased initial dye concentration resulted in an increase in the amount of dye adsorbed per gram of adsorbent for all sorbent/dye combinations. The initial uptake of dye was found to be more rapid from solutions with lower concentrations. The rate of dye adsorption increased with increasing adsorbent mass and agitation speed, due to the reduction in the boundary layer resistance. The applicability of three single resistance mass transfer models was evaluated. Good model fits were obtained. However the single resistance external mass transfer failed at longer contact times due to the retardation of the adsorption process by an internal diffusion process. Results suggest the internal diffusion step could be the rate-limiting step in the adsorption process and the overall rate of adsorption was controlled by intraparticle diffusion, adsorption inside the adsorbent surface, or both.

Keywords: Industry Waste-Water, Activated Carbon, Aqueous-Solution, Intraparticle Diffusion, Removal, Rates, Equilibrium, Adsorbents, Pellets, Shells

? Goel, J., Kadirvelu, K., Rajagopal, C. and Garg, V.K. (2005), Removal of lead(II) from aqueous solution by adsorption on carbon aerogel using a response surface methodological approach. *Industrial & Engineering Chemistry Research*, **44** (7), 1987-1994.

Full Text: [I\Ind Eng Che Res44, 1987.pdf](I/Ind%20Eng%20Che%20Res44,%201987.pdf)

Abstract: Recently a new form of activated carbon has appeared: carbon aerogel (CA). Its use for the adsorptive removal of inorganic compounds (and especially metal ions) has not been studied. The purpose of this study is to investigate the adsorption of Pb(II) on carbon aerogel from aqueous solution. Batch mode experiments were carried out to assess the adsorption equilibrium and kinetic behavior of Pb(II) in aqueous solution. This allowed for the computation of the kinetic parameters and maximum metal ion adsorption capacities. The influence of three parameters, adsorbent concentration (0.02-0.1 g), pH (2-7), and temperature (20-70 degrees C), on the percentage removal of Pb(II) was also examined, using a response surface methodological approach. Box-Behnken design was used for designing the experiments as well as for full response surface estimation. It was shown that a second-order polynomial regression model could properly evaluate the experimental data. This was evidenced by the high R-2 value of 0.9655. The optimum conditions for maximum removal were found to be as follows: adsorbent concentration (0.1 g), pH range (4-7), and temperature (70 degrees C).

Keywords: Activated Carbon, Waste-Water, Pb(II), Ions, Cu(II), Design, Kinetics, Sorption, Cadmium

? Basso, M.C. and Cukierman, A.L. (2005), *Arundo donax*-based activated carbons for aqueous-phase adsorption of volatile organic compounds. *Industrial & Engineering Chemistry Research*, **44** (7), 2091-2100.

Full Text: [I\Ind Eng Che Res44, 2091.pdf](I/Ind%20Eng%20Che%20Res44,%202091.pdf)

Abstract: A series of activated carbons with similar surface properties (BET surface area of 1100 m2/g, total pore volume of 1 cm3/g) were developed by H3PO4 acid activation of Arundo donax L. stems, under four different atmospheres. Their ability to adsorb individual benzene and toluene from dilute aqueous solutions was comparatively examined at preestablished equilibrium conditions. All the samples showed appreciable uptakes of both compounds, though the carbons obtained under flowing N2 were most effective due to their smallest total content of polar/acidic surface oxygen functional groups. An empirical pseudo-second-order expression and conventional adsorption isotherm models represented properly kinetic and equilibrium data for adsorption of the organics on the N2-derived carbons, respectively. Competing adsorption effects were found for the carbons developed under flowing N2 and air using binary solutions of benzene and toluene and of the organics in the presence of Ni(II) ions. Besides, low-temperature thermal desorption proved effective to regenerate the spent carbons loaded with the organics keeping unchanged their original adsorptive capacity, while treatment with dilute HCl acid allowed regeneration of the carbons after being loaded from a ternary solution of benzene, toluene, and Ni(II) ions.

Keywords: Waste-Water, Functional-Groups, Phosphoric-Acid, Desorption, Toluene, Metals, Steam

? Allen, S.J., Koumanova, B., Kircheva, Z. and Nenkova, S. (2005), Adsorption of 2-nitrophenol by technical hydrolysis lignin: Kinetics, mass transfer, and equilibrium studies. *Industrial & Engineering Chemistry Research*, **44** (7), 2281-2287.

Full Text: [I\Ind Eng Che Res44, 2281.pdf](I/Ind%20Eng%20Che%20Res44,%202281.pdf)

Abstract: The potential of technical hydrolysis lignin (THL), a low-cost and abundantly available material, to act as an adsorbent of 2-nitrophenol (2-NP) has been investigated. The extent of mononitrophenol uptake was determined conducting parallel single-component kinetic experiments in standardized batch adsorbers. The effect of the operating parameters, initial sorbate concentration, and mass of adsorbent was tested. The applicability of three kinetic/mass transfer models was estimated on the basis of comparative analysis of the corresponding rate parameters (k(1), k(2), k(i)), equilibrium capacity (q(1)(cal), q(2)(cal)), and correlation coefficients (R-1(2), R-2(2), R-i(2)). Results suggest that chemisorption processes could be the rate-limiting step in the adsorption process. The Langmuir and Freundlich isotherm models were applied to describe the experimental results. The Langmuir model was found to best represent the equilibrium data for 2-NP uptake on THL. The sorption characteristics and the calculated sorption capacity of the lignin proved the feasibility of its use as a potential and alternative sorbent for 2-NP removal.

Keywords: Activated Carbon, Intraparticle Diffusion, Phenolic-Compounds, Waste-Water, Sorption, Peat, Nitrophenols, Reactors, Rates, Dyes

? Simao, J.P.F., Egas, A.P.V., Baptista, C.M.S.G. and Carvalho, M.G. (2005), Heterogeneous kinetic model for the methylglucuronic and hexenuronic acids reactions during Kraft pulping of Eucalyptus globulus. *Industrial & Engineering Chemistry Research*, **44** (9), 2997-3002.

Full Text: [I\Ind Eng Che Res44, 2997.pdf](I/Ind%20Eng%20Che%20Res44,%202997.pdf)

Abstract: A kinetic model considering simultaneously the removal of methylglucuronic acids (GlcA), the formation of hexenuronic acids (HexA), and their degradation/dissolution is proposed. In the model, the effective alkali concentration in the entrapped liquor was used instead of that in the bulk liquor, accounting for the heterogeneous nature of wood pulping. The results are very satisfactorily explained by assuming that GlcA are composed of two subgroups: the fast GlcA, which disappear early in the cook with a low activation energy (58 kJ/mol), and the slow GlcA, which are degraded/dissolved (E-a = 91 kJ/mol) or produce HexA, not being totally consumed. The degradation/dissolution reactions of both GlcA subgroups are second-order with respect to their content, while HexA formation (E-a = 92 kJ/mol) and degradation (E-a = 110 kJ/mol) are first-order with respect to slow GlcA and HexA contents, respectively. The effective alkali concentration influences the reactions that involve the slow GlcA and HexA, with a greater contribution to HexA degradation. The sulfidity is not relevant on any of these reactions. The model was experimentally validated with varying temperature, alkali, and sulfidity profiles and predicts reasonably well the GlcA and HexA contents during kraft pulping of Eucalyptus globulus.

Keywords: Cooking Conditions, Bleachability, Degradation, Softwood, Xylan, Pine, Wood, Fate

? Gupta, V.K., Ali, I., Saini, V.K., Van Gerven, T., Van der Bruggen, B. and Vandecasteele, C. (2005), Removal of dyes from wastewater using bottom ash. *Industrial & Engineering Chemistry Research*, **44** (10), 3655-3664.

Full Text: [I\Ind Eng Che Res44, 3655.pdf](I/Ind%20Eng%20Che%20Res44,%203655.pdf)

Abstract: Municipal solid waste incinerator (MSWI) bottom ash was converted into a low-cost adsorbent, characterized and used for the removal of alizarin yellow, fast green, and methyl violet from wastewater. The percentages of removal of alizarin yellow (1.0×10-4 M), fast green (1.0×10-4 M), and methyl violet (1.0×10-4 M) on this adsorbent were 87.5, 97.0, and 73.0, respectively. In batch experiments, parameters studied include the effect of the adsorbate concentration, pH, sorbent dosage, temperature, and contact time. The optimum contact time for all of the three dyes has been found to be 4 h, while the maximum adsorption was observed at pH 5.5, 5.0, and 8.0 for alizarin yellow, fast green, and methyl violet, respectively. The adsorbent dose has been optimized as 10.0 g/L for the three dyes. Kinetic studies showed a rate of adsorption of first order with respect to the dye solution concentration. Adsorption processes were found to be film-diffasion-controlled for all of the three dyes. Thermodynamic parameters such as free energy, enthalpy, and entropy of adsorption of the dye-bottom ash systems were also evaluated.

Keywords: Aluminum-Industry Waste, Activated Carbon, Basic-Dyes, Textile Effluents, Aqueous-Solutions, Methylene-Blue, Color Removal, Rhodamine-B, Solid-Waste, Acid Dyes

? Mohanty, K., Jha, M., Meikap, B.C. and Biswas, M.N. (2005), Preparation and characterization of activated carbons from Terminalia arjuna nut with zinc chloride activation for the removal of phenol from wastewater. *Industrial & Engineering Chemistry Research*, **44** (11), 4128-4138.

Full Text: [I\Ind Eng Che Res44, 4128.pdf](I/Ind%20Eng%20Che%20Res44,%204128.pdf)

Abstract: Nuts of Terminalia Arjuna, an agricultural 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 dilute aqueous solutions. 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 1260 m2/g and 0.522 cm3/g, respectively. The activated carbon developed shows substantial capability to adsorb phenol from dilute aqueous solutions. The kinetic data were fitted to the models of intraparticle diffusion, pseudo-second-order, and Lagergren model which followed more closely the pseudo-second-order chemisorption model. The isotherm equilibrium data were well-fitted by the Langmuir and Freundlich models. The maximum removal of phenol was obtained at pH 3.5 (about 93 % for adsorbent dose of 10 g/L and 100 g/L initial concentration).

Keywords: Dilute Aqueous-Solutions, Basic Dye, Adsorption, Bagasse, Stones

? Wang, R., Liao, X.P. and Shi, B. (2005), Adsorption behaviors of Pt(II) and Pd(II) on collagen fiber immobilized bayberry tannin. *Industrial & Engineering Chemistry Research*, **44** (12), 4221-4226.

Full Text: [I\Ind Eng Che Res44, 4221.pdf](I/Ind%20Eng%20Che%20Res44,%204221.pdf)

Abstract: It was found that the collagen fiber immobilized bayberry tannin exhibited high adsorption capacity to Pt(II) and Pd(II). The adsorption isotherms of Pt(II) and Pd(II) could be well described by the Langmuir equation, and their adsorption capacities increased with the rise of temperature. The adsorption kinetics investigations indicated that the adsorption rate of Pt(II) and Pd(II) on the immobilized bayberry tannin could be well described by the pseudo-second-order rate model, and the adsorption capacities calculated by the pseudo-second-order rate model were close to those determined by actual measurement. The adsorption column could be easily regenerated by dilute HCl solution after adsorption of Pd(II), but it was somewhat difficult to regenerate the adsorption column after adsorption of Pt(II). The influence of pH value on the adsorption of Pd(II) and Pt(II) was not significant, and the immobilized bayberry tannin kept high adsorption capacity for these two precious metal ions even at acidic pH. In consideration of this fact, the studies on selective adsorption of Pt(II) and Pd(II) from the mixture solution containing Fe(III), Cu(II), Ni(II), and Zn(II) were carried out by using immobilized bayberry tannin. The experimental results indicated that the adsorption selectivity of the immobilized bayberry tannin to Pt(II) and Pd(II) was remarkable at pH 2.0.

Keywords: Palladium(II), Biosorption, Gold(III), Recovery, Polymers, Removal, Copper, Resin

? Öncel, Ş., Uzun, L., Garipcan, B. and Denizli, A. (2005), Synthesis of phenylalanine-containing hydrophobic beads for lysozyme adsorption. *Industrial & Engineering Chemistry Research*, **44** (18), 7049-7056.

Full Text: [2005\Ind Eng Che Res44, 7049.pdf](2005/Ind%20Eng%20Che%20Res44,%207049.pdf)

Abstract: Hydrophobic interaction chromatography (HIC) takes advantage of the hydrophobicity of proteins by promoting its separation on the basis of hydrophobic interactions between immobilized hydrophobic ligands and nonpolar regions on the surface of the proteins. In this study, poly(2-hydroxyethyl methacrylate) poly(HEMA) beads having methacryloylamido-phenylalanine (MAPA) ligand, as a comonomer, providing hydrophobic functionality to the adsorbent were prepared. MAPA was synthesized by reacting methacryloyl chloride with L-phenylalanine. Spherical beads with an average size of 150-200 μm were obtained by suspension polymerization of HEMA and MAPA, conducted in an aqueous dispersion medium. The beads had a specific surface area of 19.1 m2/g, and were characterized by means of swelling studies, pore size analysis, elemental analysis, FTIR, NMR, and SEM. Beads with a swelling ratio of 68% and containing 3.2 mmol MAPA/g were used for the separation of lysozyme. Adsorption. studies were performed under different conditions in a batch system (i.e., medium pH, protein concentration, temperature, and ionic strength). Lysozyme adsorption capacity of poly(HEAU) and poly(HEMA-MAPA) beads were 2.1 and 114.3 mg/g, respectively. It was observed that after 5 adsorption-desorption cycles poly(HEMA-MAPA) beads can be used without significant loss in lysozyme adsorption capacity. Purification of lysozyme from egg white was also investigated. Purification of lysozyme was monitored by determining the lysozyme activity using Micrococcus lysodeikticus as substrate. The purity of the desorbed lysozyme was about 82% with recovery about 74%. The specific activity of the desorbed lysozyme was high as 42.800 U/mg.

Keywords: Charge Induction Chromatography, Chelate Affinity Adsorbent, Separation, Phase, Ultrafiltration, Purification, Membrane, Proteins

? Diaz-Flores, P.E., Leyva-Ramos, R., Guerrero-Coronado, R.M. and Mendoza-Barron, J. (2006), Adsorption of pentachlorophenol from aqueous solution onto activated carbon fiber. *Industrial & Engineering Chemistry Research*, **45** (1), 330-336.

Full Text: [2006\Ind Eng Che Res45, 330.pdf](2006/Ind%20Eng%20Che%20Res45,%20330.pdf)

Abstract: Experimental data for the equilibrium adsorption of pentachlorophenol (PCP) onto activated carbon fibers (ACFs) in the form of felt (AC-felt) and cloth (AC-cloth) were obtained in a batch adsorber. The effect of pH on the adsorption capacity was investigated by determining the adsorption isotherm in the pH range from 6 to 12. It was found that the adsorption capacity was reduced upon increasing the pH from 6 to 12. The speciation diagram of PCP revealed that PCP was adsorbed on the ACFs as the pentachlorophenolate ion. The adsorption capacity was diminished slightly upon increasing the temperature from 15 to 35 degrees C. The adsorption of PCP on AC-felt was due to dispersion forces caused by pi-pi interactions. These interactions explained why the adsorption of PCP on the AC-felt was reversible. Also, the adsorption capacity of the AC-felt was 1.7 times higher than that of the AC-cloth because the AC-felt contained a greater concentration of basic sites that made the pi-pi interactions stronger. It was concluded that PCP was adsorbed considerably on the ACFs and that the adsorption capacity was highly dependent on the form and properties of the ACFs as well as the solution pH.

Keywords: Sorption, Water, Cloth, Chlorophenols, Chemistry, Atrazine, Removal, Phenol

? Hu, Q.H., Qiao, S.Z., Haghseresht, F., Wilson, M.A. and Lu, G.Q. (2006), Adsorption study for removal of basic red dye using bentonite. *Industrial & Engineering Chemistry Research*, **45** (2), 733-738.

Full Text: [2006\Ind Eng Che Res45, 733.pdf](2006/Ind%20Eng%20Che%20Res45,%20733.pdf)

Abstract: Colored wastewater poses a challenge to the conventional wastewater treatment techniques. Solid-liquid phase adsorption has been found to be effective for the removal of dyes from effluent. In this paper, the ability of bentonite as an adsorbent for the removal of a commercial dye, Basic Red 2 (BR2), from an aqueous solution has been investigated under various experimental conditions. The adsorption kinetics was shown to be pseudo-second-order. It was found that bentonite had high adsorption capacity for BR2 due to cation exchange. The adsorption equilibrium data can be fitted well by the Langmuir adsorption isotherm model. The effect of the experimental parameters, such as temperature, salt, and pH was investigated through a number of batch adsorption experiments. It was found that the removal of dye increased with the increase in solution pH. However, the change of temperature (15-45 °C) and the addition of sodium chloride were found to have little effect on the adsorption process. The results show that electrostatic interactions are not dominant in the interaction between BR2 and bentonite. It was found that the adsorption was a rapid process with 80-90% of the dye removed within the first 2-3 min. Bentonite as an adsorbent is promising for color removal from wastewater.

? Gupta, V.K., Mohan, D., Suhas and Singh, K.P. (2006), Removal of 2-aminophenol using novel adsorbents. *Industrial & Engineering Chemistry Research*, **45** (3), 1113-1122.

Full Text: [2006\Ind Eng Che Res45, 1113.pdf](2006/Ind%20Eng%20Che%20Res45,%201113.pdf)

Abstract: Removal of toxic substances from wastewaters using low-cost alternatives to activated carbon is an important area in environmental sciences. Efforts have been made to convert a fertilizer waste and a steel industry waste into low-cost potential adsorbents. The developed products have been used for the removal of 2-aminophenol from aqueous solutions and wastewaters. Studies were conducted to delineate the effects of temperature, initial absorbate concentration, particle size of the adsorbent, and solid-to-liquid ratio. Equilibrium isotherms were determined at selected pH’s to assess the maximum adsorption capacity of the adsorbents. Both Freundlich and Langmuir models were used to interpret the adsorption data. The adsorption of 2-aminophenol is an endothermic process. Kinetic studies were performed, and various parameters such as mass transfer coefficient, effective diffusion coefficient, activation energy, and entropy of activation were evaluated to establish the mechanism of removal. Column studies were performed, and the breakthrough curves were used to optimize the contactors and identify a design correlation. Some feasibility experiments were also carried out with an aim to recover 2-aminophenol and demonstrate chemical regeneration of the spent columns. The column capacities of 312 and 30.00 mg/g were more than the batch capacities, which. were 80.75 and 28.37 mg/g for activated carbon and activated slag, respectively. Overall, activated carbon developed from fertilizer waste exhibits better performance than activated slag developed from blast furnace slag.

Keywords: Liquid-Phase Adsorption, Blast-Furnace Waste, Activated Carbon, Equilibrium Uptake, Sorption Dynamics, Fertilizer Waste, Aqueous-Solution, Column Operations, Water, Phenol

? Gupta, V.K., Mittal, A., Gajbe, V. and Mittal, J. (2006), Removal and recovery of the hazardous azo dye acid orange 7 through adsorption over waste materials: Bottom ash and de-oiled soya. *Industrial & Engineering Chemistry Research*, **45** (4), 1446-1453.

Full Text: [2006\Ind Eng Che Res45, 1446.pdf](2006/Ind%20Eng%20Che%20Res45,%201446.pdf)

Abstract: An azo dye, Acid Orange 7 [p-(2-hydroxy-1 naphthylazo)benzene sulfonic acid] was removed by adsorption over two waste materials, namely, bottom ash, a power plant waste, and de-oiled soya, byproduct obtained during the processing of soybean in soya oil extraction mills. Both waste materials showed excellent adsorption abilities and can be treated as low-cost adsorbents. The adsorbents were characterized through IR spectroscopy and differential thermal analysis (I)TA), and preliminary investigations were carried out by batch adsorption to examine the effects of pH, adsorbate concentration, sieve size, adsorbent dosage, contact time, and temperature. A plausible mechanism for the ongoing adsorption process and thermodynamic parameters were also obtained from Langmuir and Freundlich adsorption isotherm models. The kinetic measurements helped in determining the specific rate constant, confirming the applicability of the first-order rate expression. To identify whether the ongoing process is particle diffusion or film diffusion, the treatments given by Boyd et al. (Boyd, G. E.; Adamson, A. W.; Meyers, L. S. J. Am. Chem. Soc. 1947, 69, 2836) and Reichenberg (Reichenberg, D. J. Am. Chem. Soc. 1953, 75, 589) were employed. To assess the practical utility of the adsorbents, a fixed-bed column was designed, and necessary parameters were calculated by applying a mass-transfer kinetic approach. Experiments were also performed for the recovery of loaded dye through chemical regeneration of spent columns, and an estimate of the operating costs was also calculated.

Keywords: Acid-Orange-7, Adsorption, Azo Dye, Decolorization, Degradation, Dye, Dyestuffs, Langmuir, Malachite Green, Water

? Andaç, M., Özyapi, E., Şenel, S., Say, R. and Denizli, A. (2006), Ion-selective imprinted beads for aluminum removal from aqueous solutions. *Industrial & Engineering Chemistry Research*, **45** (5), 1780-1786.

Full Text: [2006\Ind Eng Che Res45, 1780.pdf](2006/Ind%20Eng%20Che%20Res45,%201780.pdf)

Abstract: The aim of this study is to prepare ion-imprinted polymers that can be used for the selective removal of aluminum ions [Al3+] from aqueous solutions. N-Methacryloyl-L-glutamic acid (MAGA) was chosen as the complexing monomer. In the first step, Al3+ was complexed with MAGA and Al3+-imprinted poly(hydroxyethyl methacrylate-N-methacryloyl-L-glutamic acid) (MIP) beads were synthesized by suspension polymerization. After that, the template ions (i.e., Al3+) were removed using 0.1 M EDTA solution. The specific surface area of the MIP beads was found to be 55.6 m2/g with a size range of 63-140 μm in diameter, and the swelling ratio was 102%. According to the elemental analysis results, the MIP beads contained 640 μmol of MAGA/g of polymer. The maximum adsorption capacity was 122.9 μmol of Al3+/g of beads. The applicability of two kinetic models including pseudo-first-order and pseudo-second-order models was estimated on the basis of comparative analysis of the corresponding rate parameters, equilibrium capacity, and correlation coefficients. Results suggest that chemisorption processes could be the rate-limiting step in the adsorption process. The relative selectivity coefficients of MIP beads for Al3+/Ni2+, Al3+/Cu2+, and Al3+/Fe3+ were respectively 1427, 14.8, and 6.2 times greater than that of the nonimprinted matrix. The MIP beads could be used many times without significantly decreasing in their adsorption capacities.

? Liu, P., Liu, Y.S. and Su, Z.X. (2006), Modification of poly(hydroethyl acrylate)-grafted cross-linked poly(vinyl chloride) particles via surface-initiated atom-transfer radical polymerization (SI-ATRP). Competitive adsorption of some heavy metal ions on modified polymers. *Industrial & Engineering Chemistry Research*, **45** (7), 2255-2260.

Full Text: [2006\Ind Eng Che Res45, 2255.pdf](2006/Ind%20Eng%20Che%20Res45,%202255.pdf)

Abstract: Poly(hydroethyl acrylate) (PHEA) has been grafted from the surfaces of cross-linked poly(vinyl chloride) (PVC) beads with their surface labile chlorines as initiation sites, using a copper-mediated surface-initiated atom-transfer radical polymerization (SI-ATRP) methodology. The graft reaction exhibits first-order kinetics with respect to the polymerization time in the low-monomer-conversion stage, as is typical for ATRP. A percentage of grafting (PG%) of 190.4% was achieved in 10 h. The ester groups of the poly(hydroethyl acrylate)-grafted cross-linked poly(vinyl chloride) beads (PHEA-PVC) were then hydrolyzed to yield carboxyl-PVC beads; and the hydrolyzed product, poly(acrylic acid)groups. Then, the bare PVC beads; the PHEA 2 grafted cross-linked poly(vinyl chloride) beads (PAA-PVC), were used for the extraction of heavy metal ions such as Cu(II), Hg(II), Zn(II), and Cd(II) in weak acidic aqueous solution. It was found that the former two had better loading capacities toward Hg(II) ion. The adsorbed ions were eluted by repeated treatment with acetic acid. The chelating resins did not lose their activity even after the 10th regeneration. The material described herein is regenerable and has the advantage of mobility of the graft chains in the removal of heavy metal ions from aqueous mixtures.

Keywords: Acetic Acid, Acrylate, Activity, Adsorption, Atom Transfer Radical Polymerization, Beads, Brushes, Butyl Acrylate, Cd(II), Cellulose, Chloride, Extraction, Films, Graft-Copolymerization, Grafting, Heavy Metal, Heavy Metal Ions, Hg(II), Ion, Kinetics, Loading, Membranes, Metal Ions, Methacrylate, Methodology, Mobility, Modified, Particles, Polymerization, Polymers, Polystyrene, PVC, Radical, Radical Polymerization, Reaction, Regeneration, Resins, Sites, Styrene, Surface, Surface-Initiated, Surfaces, Treatment, Well-Defined Polymer, Yield

? Faria, P.C.C., Orfao, J.J.M. and Pereira, M.F.R. (2006), Ozone decomposition in water catalyzed by activated carbon: Influence of chemical and textural properties. *Industrial & Engineering Chemistry Research*, **45** (8), 2715-2721.

Full Text: [2006\Ind Eng Che Res45, 2715.pdf](2006/Ind%20Eng%20Che%20Res45,%202715.pdf)

Abstract: The decomposition of ozone in water at different solution pHs in the absence or presence of activated carbons with different surface chemistries and textural properties was investigated. Activated carbon acts as a catalyst in the decomposition of ozone into radical species, significantly accelerating this process. Homogeneous and heterogeneous decomposition of ozone were described by second-order kinetic models. In general, both homogeneous and heterogeneous ozone-decomposition rates increase with solution pH. Textural and surface chemical features of the activated carbon play a role in the catalytic decomposition of ozone. Heterogeneous ozone decomposition is enhanced by activated carbon with high surface area and basicity. Despite the mild oxidation undergone by the activated carbon samples during ozonation, no strong deactivation occurs.

Keywords: Aqueous-Phase, OH-Radicals, Ozonation, Adsorption, Kinetics, Chemistry, ACID

? Lu, C.S., Chiu, H. and Liu, C.T. (2006), Removal of zinc(II) from aqueous solution by purified carbon nanotubes: Kinetics and equilibrium studies. *Industrial & Engineering Chemistry Research*, **45** (8), 2850-2855.

Full Text: [2006\Ind Eng Che Res45, 2850.pdf](2006/Ind%20Eng%20Che%20Res45,%202850.pdf)

Abstract: Single-walled carbon nanotubes (SWCNTs) and multiwalled carbon nanotubes (MWCNTs) were purified by sodium hypochlorite solutions and were employed as sorbents to study the kinetics and equilibrium of Zn2+ sorption from aqueous solution. The amount of Zn2+ sorbed onto CNTs increased with a rise in temperature. Using the same conditions, the Zn2+ sorption capacity of CNTs was much greater than that of commercially available powdered activated carbon, reflecting that SWCNTs and MWCNTs are effective sorbents. The thermodynamic analysis revealed that the sorption of Zn2+ onto CNTs is endothermic and spontaneous. The sorption/desorption study showed that the Zn2+ ions could be easily removed from the surface site of SWCNTs and MWCNTs by a 0.1 mol/L nitric acid solution and the sorption capacity was maintained after 10 cycles of the sorption/desorption process. This suggests that both CNTs can be reused through many cycles of water treatment and regeneration.

Keywords: Activated Carbon, Adsorption, Water, Sorption, Copper, Nickel, Waste, Ions

? Liao, X.P., Ding, Y., Wang, B. and Shi, B. (2006), Adsorption behavior of phosphate on metal-ions-loaded collagen fiber. *Industrial & Engineering Chemistry Research*, **45** (11), 3896-3901.

Full Text: [2006\Ind Eng Che Res45, 3896.pdf](2006/Ind%20Eng%20Che%20Res45,%203896.pdf)

Abstract: The novel adsorbents, metal-ions-loaded collagen fiber (MICF), were prepared by loading Zr(IV) and Fe(III) onto collagen fiber, and the adsorption behavior of phosphate in aqueous solutions on MICF was investigated. The results of batch experiments indicated that the high adsorption capacities of phosphate take place in the pH range of 3.0-6.0. The adsorption capacity of phosphate on Zr-ICF is larger than that on Fe-ICF because of the higher chelating ability of Zr(IV) with phosphate. For example, the adsorption capacities of phosphate on Zr-ICF and Fe-ICF are 0.9193 and 0.8420 mmol/g at 303 K, respectively. The adsorption isotherm of MICF to phosphate can be well-described by the Langmuir equation. The adsorption kinetics of MICF to phosphate can be well-described by the pseudo-second-order rate model, and the adsorption capacities calculated by the model were close to those actually determined. The practical application of MICF on the effective removal of phosphate from aqueous solutions could be expected.

Keywords: Aqueous-Solution, Competitive Adsorption, Phosphorus Removal, Arsenate Ions, Waste-Water, Fly-Ash, Goethite, Fluoride, Iron, Sorption

? Lataye, D.H., Mishra, I.M. and Mall, I.D. (2006), Removal of pyridine from aqueous solution by adsorption on bagasse fly ash. *Industrial & Engineering Chemistry Research*, **45** (11), 3934-3943.

Full Text: [2006\Ind Eng Che Res45, 3934.pdf](2006/Ind%20Eng%20Che%20Res45,%203934.pdf)

Abstract: The present study examines the adsorption of pyridine (Py) from aqueous solutions, using bagasse fly ash (BFA), which is a solid waste that is generated from bagasse-fired boilers, as an adsorbent. Batch adsorption studies have been performed to evaluate the influence of various parameters, such as initial pH (pH(0)), adsorbent dose (m), contact time (t), initial concentration (C-0), and temperature (T), on the removal of Py from the aqueous solutions. The maximum removal of Py is determined to be 99% at lower concentrations (< 50 mg dm-3) and 95% at higher concentrations (600 mg dm-3), using a BFA dosage of 25 kg m-3 at normal temperature. Studies on Py adsorption equilibrium and kinetics by BFA also have been conducted. The adsorption equilibrium analyses also are performed, using the Langmuir, Freundlich, Redlich-Peterson, and Temkin isotherm equations. The Langmuir equation is determined to best represent the equilibrium sorption data. Thermodynamic studies revealed that the adsorption of Py on BFA is endothermic in nature and that the isosteric heat of adsorption decreases as the equilibrium uptake of Py on the BFA surface increases. The desorption of Py from Py-loaded BFA with several solvents shows that only 68.70% and 51% of Py could be recovered, using ethyl alcohol and 0.1 N H2SO4, respectively.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Equilibrium, Alcohol, Aqueous Solution, Ash, Bagasse, Bagasse Fly Ash, Biodegradation, Concentration, Concentrations, Derivatives, Desorption, Diffusion, Dosage, Equilibrium, Equilibrium Isotherm Analyses, Equilibrium Sorption, Ethyl Alcohol, Fly Ash, Freundlich, H2SO4, Isosteric Heat, Isotherm, Kinetics, Langmuir, Langmuir Equation, Parameters, pH, Redlich-Peterson, Removal, Solid Waste, Solvents, Sorption, Surface, T, Temperature, Uptake, Waste

? Karadag, D., Tok, S., Akgul, E., Ulucan, K., Evden, H. and Kaya, M.A. (2006), Combining adsorption and coagulation for the treatment of azo and anthraquinone dyes from aqueous solution. *Industrial & Engineering Chemistry Research*, **45** (11), 3969-3973.

Full Text: [2006\Ind Eng Che Res45, 3969.pdf](2006/Ind%20Eng%20Che%20Res45,%203969.pdf)

Abstract: The combined process of coagulation and adsorption was studied for the treatment of reactive dye wastewaters. Ferric chloride and organozeolite modified with CTAB were chosen as the coagulant and adsorbent, respectively. Reactive dyes, namely, Reactive Blue 4 (RB4) and Reactive Yellow (RY), were used as representatives of anthraquinone and azo textile dyes. A series of jar-test and batch experiments were conducted to determine the optimum conditions. According to individual dye removal efficiencies, coagulation is the main treatment process of the combined process, and RY has better performance than RB4. Coagulation followed by adsorption was found to be very effective for color removal with more than 99.50% and for COD removal with more than 97.25%.

Keywords: Effluents, Nanofiltration Membranes, Ozonation, Reactive-Dye, Removal, Textile Waste-Water

? Chakraborty, S., Basu, J.K., De, S., Das Gupta, S. (2006), Adsorption of reactive dyes from a textile effluent using sawdust as the adsorbent. *Industrial & Engineering Chemistry Research*, **45** (13), 4732-4741.

Full Text: [2006\Ind Eng Che Res45, 4732.pdf](2006/Ind%20Eng%20Che%20Res45,%204732.pdf)

Abstract: Adsorption is carried out for the removal of two reactive dyes from an industrial effluent. The specific dyes are reactive red and reactive black, commercially known as Cibacron Red RB and Cibacron Black B, respectively. An adsorbent developed from sawdust is used. Equilibrium and kinetic studies are carried out with the synthetic solutions of the dyes. For the mixture of two dyes, the bisolute Langmuir isotherm modified with an interaction factor is used. A mass transfer model including an external film mass transfer coefficient and an internal effective diffusivity is used to interpret the adsorption kinetic data. These parameters are obtained by fitting the experimental data to the model. An industrial effluent is successfully treated with the same adsorbent. The estimated model parameters are used for the prediction of the concentration profiles of dyes of the industrial effluent.

Keywords: Shrinking Core Model, Aqueous-Solution, Batch Adsorption, Activated Carbon, Barley Husk, Sorption, Equilibrium, Removal

? Mohanty, K., Naidu, J.T., Meikap, B.C. and Biswas, M.N. (2006), Removal of crystal violet from wastewater by activated carbons prepared from rice husk. *Industrial & Engineering Chemistry Research*, **45** (14), 5165-5171.

Full Text: [2006\Ind Eng Che Res45, 5165.pdf](2006/Ind%20Eng%20Che%20Res45,%205165.pdf)

Abstract: Adsorption onto activated carbons is a potent method for the treatment of dye-bearing effluents because it offers various advantages. In this study, activated carbons, prepared by a new technique from low-cost rice husk by sulfuric acid and zinc chloride activation, were used as the adsorbent for the removal of crystal violet, a basic dye, from aqueous solutions. The effects of various experimental parameters, such as adsorbent dosage and size, initial dye concentration, pH, contact time, and temperature, were investigated in batch mode. The kinetic data were well fitted to the Lagergren, pseudo-second-order, and intraparticle diffusion models. It was found that intraparticle diffusion plays a significant role in the adsorption mechanism. The isothermal data could be well described by the Langmuir and Freundlich equations. The maximum uptakes of crystal violet by sulfuric acid activated (RHS) and zinc chloride activated (RHZ) rice husk carbon were found to be 64.875 and 61.575 mg/g of adsorbent, respectively. The results indicate that RHS and RHZ could be employed as low-cost alternatives to commercial activated carbon in wastewater treatment for the removal of basic dyes.

Keywords: De-Oiled-Soya, Aqueous-Solutions, Malachite Green, Methylene-Blue, Basic Dye, Column Operations, Industry Waste, Zinc-Chloride, Rhodamine-B, Bottom Ash

? Sarkar, M., Banerjee, A. and Pramanick, P.P. (2006), Kinetics and mechanism of fluoride removal using laterite. *Industrial & Engineering Chemistry Research*, **45** (17), 5920-5927.

Full Text: [2006\Ind Eng Che Res45, 5920.pdf](2006/Ind%20Eng%20Che%20Res45,%205920.pdf)

Abstract: The suitability of laterite soil particle as a potential adsorbent is assessed for the removal of fluoride following batch mode of operation. The efficiency of the operation is determined by initial fluoride concentration, shaking time, shaking speed, dose and particle size of the adsorbent, pH of the solution, and temperature. The process attains equilibrium at 195 min, removing 78.2% fluoride from 10 mg dm-3 fluoride solution using fine particle size at 303 K. Thermodynamic parameters revealed that the process is spontaneous and exothermic in nature. The isotherm can be conformed to either Langmuir or Freundlich model in different temperature regions. The process follows Lagergren pseudo-first-order rate, and surface diffusion is identified as the predominating mechanism.

Keywords: Activated Carbon, Adsorbent, Adsorption-Kinetics, Aqueous-Solution, Defluoridation, Diffusion, Drinking-Water, Equilibrium, Fluorapatite, Fluoride, Freundlich, Ions, Isotherm, Kinetics, Langmuir, Laterite, Laterite Soil, Soil, Sorption, Spontaneous, Temperature, Waste-Water

? Goel, J., Kadirvelu, K., Rajagopal, C. and Garg, V.K. (2006), Cadmium(II) uptake from aqueous solution by adsorption onto carbon aerogel using a response surface methodological approach. *Industrial & Engineering Chemistry Research*, **45** (19), 6531-6537.

Full Text: [2006\Ind Eng Che Res45, 6531.pdf](2006/Ind%20Eng%20Che%20Res45,%206531.pdf)

Abstract: Recently a new form of activated carbon has appeared: carbon aerogel. Use of carbon aerogel for the adsorptive removal of inorganic compounds (and especially metal ions) has not been investigated. The purpose of this study is to investigate feasibility of cadmium(II) adsorption on carbon aerogel from aqueous solution. The physicochemical properties of carbon aerogel were analyzed to obtain a better understanding of the adsorption mechanism of Cd(II) onto carbon aerogel in aqueous solution. The surface structure of carbon aerogel was analyzed by scanning electron microscopy (SEM) coupled with energy-dispersive X-ray analysis (EDAX). Batch mode adsorption experiments were carried out to assess the adsorption behavior of Cd(II) in aqueous solution. The maximum adsorption capacity (Q(0)) was calculated by applying the Langmuir equation to Cd(II) in the adsorption isotherm and was found to be 15.53 mg g-1. The influence of three-process variables, namely, adsorbent concentration (0.02-0.1 g) per 50 mL of metal solution, solution pH (2.0-10.0), and temperature (20-70 degrees C), on the percentage removal of Cd(II) was also examined, using a response surface methodological (RSM) approach. The Box-Behnken model was used as an experimental design, and a statistically practicable second-order polynomial equation was fitted to the model exhibiting a response-variable relationship. This was evidenced by a high R-2 value of 0.9602. Response surfaces were plotted on the basis of the fitted second-order polynomial equation. The optimum conditions for maximum adsorption of Cd(II) were found to be as follows: adsorbent concentration of 0.1 g per 50 mL of metal solution, pH range 6.0-7.0, and temperature of 70 degrees C. Effect of initial solution pH on Cd(II) removal was carried out to assess the adsorption behavior at different pH values. Adsorption of cadmium(II) increases with increasing initial pH from 2.0 to 10.0.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherm, Cd(II), Copper, Cu(II), Equilibrium, Ions, Isotherm, Model, Pb(II), Removal, Second-Order, Sorption, Water

? Bhattacharyya, K.G. and Gupta, S.S. (2006), Adsorption of chromium(VI) from water by clays. *Industrial & Engineering Chemistry Research*, **45** (21), 7232-7240.

Full Text: [2006\Ind Eng Che Res45, 7232.pdf](2006/Ind%20Eng%20Che%20Res45,%207232.pdf)

Abstract: Interactions of kaolinite and its modified forms, acid-activated kaolinite, poly(oxozirconium) kaolinite, and tetrabutylammonium kaolinite, have been investigated for their utilization as adsorbents for Cr(VI) in aqueous medium. The variables are Cr(VI) concentration, amount of kaolinite or its modified forms, pH, interaction time, and temperature. The adsorption is strongly dependent on the pH of the medium with Cr(VI) uptake increasing from pH 1.0 to pH 7.0, after which the uptake decreases. The process attains equilibrium within 240 min. The kinetics of the interactions is tested with respect to pseudo-first-order, second-order, Elovich, liquid film diffusion, and intraparticle diffusion models, and it is seen that the interactions do not follow a simple model. The adsorption process, however, gives a good fit with both the Langmuir and Freundlich isotherm equations. The Langmuir monolayer capacity of the clay adsorbents is from 10.6 to 13.9 mg g-1. The adsorption process is endothermic (Delta H = 30.4-63.9 kJ mol-1) accompanied by an increase in entropy (Delta S = 88.4-198.1 J mol-1 K-1) and decrease in Gibbs energy. The results have shown that acid-activated kaolinite has the largest adsorption capacity followed by nonactivated kaolinite, ZrO-kaolinite, and TBA-kaolinite.

Keywords: Sugar-Industry Waste, Bagasse Fly-Ash, Aqueous-Solutions, Pillared Clays, Trivalent Chromium, Activated Carbon, Acid Activation, Gas-Adsorption, Kinetic-Models, Heavy-Metal

? Inbaraj, B.S. (2006), Comment on “adsorption of reactive dyes from a textile effluent using sawdust as the adsorbent”. *Industrial & Engineering Chemistry Research*, **45** (21), 7362.

Full Text: [2006\Ind Eng Che Res45, 7362.pdf](2006/Ind%20Eng%20Che%20Res45,%207362.pdf)

Keywords: Isotherm

? Preethi, S., Sivasamy, A., Sivanesan, S., Ramamurthi, V. and Swaminathan, G. (2006), Removal of safranin basic dye from aqueous solutions by adsorption onto corncob activated carbon. *Industrial & Engineering Chemistry Research*, **45** (22), 7627-7632.

Full Text: [2006\Ind Eng Che Res45, 7627.pdf](2006/Ind%20Eng%20Che%20Res45,%207627.pdf)

Abstract: Adsorption of a basic dye, safranin, from aqueous solutions onto activated carbon prepared from corncobs (ACCC) has been investigated. Various experiments have been carried out using batch adsorption technique to study the effects of the process variables, which include initial pH, adsorbent dosage, initial dye concentration, particle size, temperature, and agitation speed, on the adsorption process. The adsorption of safranin onto the adsorbent was found to improve with the increase in adsorbent dosage and finer mesh size. Maximum adsorption was observed at pH > pH(zpc) in the pH values ranging from 5 to 9. It was observed that the rate of adsorption improves with increasing temperature and the process is endothermic with an Delta H value of 35.698 kJ/mol. The kinetics followed is first order in nature. The results showed that both Langmuir and Freundlich isotherms fit the equilibrium data. Also, the results revealed that activated carbon from corncob, an agricultural waste biomass, proved to be an excellent low-cost sorbent.

Keywords: Surface-Chemistry, Industry Waste, Methylene-Blue, Fly-Ash, Sorption, Solids, Blacks, Water

? Lv, L., He, J., Wei, M. and Duan, X. (2006), Kinetic studies on fluoride removal by calcined layered double hydroxides. *Industrial & Engineering Chemistry Research*, **45** (25), 8623-8628.

Full Text: [2006\Ind Eng Che Res45, 8623.pdf](2006/Ind%20Eng%20Che%20Res45,%208623.pdf)

Abstract: The layered double hydroxides (LDHs) calcined at a certain range of temperature have the “memory effect” which means to recover its original layered structure in the presence of appropriate anions. Kinetics of fluoride removal from aqueous solution by calcined MgAl-CO3 LDHs (denoted CLDH) was studied in batch mode. The influences of pH of solution, initial fluoride concentration, CLDH quantity, and temperature on the kinetic of fluoride removal have been tested in detail. The results of four kinetic models fitted to the experimental data show that the pseudo-second-order kinetic model gave a better description for the uptake process. The rate constants and activation energy of adsorption were also calculated. The calculated value of E-a was 39.73 kJ/mol, indicating a reaction-controlled process.

Keywords: Aqueous-Solution, Mg-Al-CO3 Hydrotalcite, Adsorption-Kinetics, Activated Carbon, Diffusion-Model, Donnan Dialysis, Drinking-Water, Waste-Water, Sorption, Equilibrium

? Liu, C.C., Wang, M.K., Chiou, C.S., Li, Y.S., Lin, Y.A. and Huang, S.S. (2006), Chromium removal and sorption mechanism from aqueous solutions by wine processing waste sludge. *Industrial & Engineering Chemistry Research*, **45** (26), 8891-8899.

Full Text: [2006\Ind Eng Che Res45, 8891.pdf](2006/Ind%20Eng%20Che%20Res45,%208891.pdf)

Abstract: Wine processing waste sludge (WPWS) has been shown to be an effective sorbent for the sorption of heavy metals (i.e., chromium and nickel), but the mechanism of removal of hexavalent chromium [Cr(VI)] by WPWS remains obscure. The aims of this study were to determine the effects of temperature, initial concentration of Cr(VI), and particle size on the removal Cr(VI) using WPWS. The characteristics of WPWS were determined, and sorption mechanism studies were also performed. The WPWS used was a deposit mixture containing considerable quantities of chemical coagulation as well as activated sludge precipitation from the settling basins of a wastewater treatment plant. Differential scanning calorimetry (DSC) analysis revealed that the WPWS comprised abundant labile carbohydrates and few aromatic structures. According to the IR spectrum, carboxylic groups were the most important functional group in WPWS, interacting with chromium species by protonation and redox reaction. All kinetic experiments were conducted at an initial pH of 2.0, and all of them had reached steady state within 240 min. The final pH values of the suspensions were approximately 4.2, and the increase of the pH caused low Cr removal. In addition, about 2-18% of the Cr(III) remained in the liquid phase. The Cr removal percentage increased with increasing temperature (i.e., 14-25%), but it was less affected by particle size (17-22%). All kinetic data obtained from different conditions showed good compliance with a pseudo-second-order model, and the rate constant k2 was found to range from 0.032 to 0.074 g mg-1 min-1. Some of the Cr(VI) ions were reduced to Cr(III) ions as a result of oxidation of organic components in WPWS, as indicated by monitoring using the X-ray absorption near-edge spectroscopic (XANES) technique.

Keywords: Adsorption, Analysis, Biomass, Biosorption, Carbohydrates, Cr(VI), Dsc, Fly-Ash, Heavy Metals, Hexavalent Chromium, Industrial-Waste, Metal-Ions, Model, Plant, Rate Constant, Soil Organic-Matter, Sorption, Temperature, Treatment, Wastewater, Wastewater Treatment, Water

? Saxena, S., Prasad, M. and D’Souza, S.F. (2006), Radionuclide sorption onto low-cost mineral adsorbent. *Industrial & Engineering Chemistry Research*, **45** (26), 9122-9128.

Full Text: [2006\Ind Eng Che Res45, 9122.pdf](2006/Ind%20Eng%20Che%20Res45,%209122.pdf)

Abstract: This paper investigates the underlying mechanism of the removal of hexavalent uranium radionuclides from aqueous solution via a low-cost mineral adsorbent. Batch adsorption studies were performed for the concentration range of 50-4000 mg/L. The effects of contact times in the range of 10-3600 min (60 h), solution pHs in the range of 1-11, initial concentrations of metal ions in the range of 50-4000 mg/L, and interfering cations (such as Pb2+, Cu2+, Fe2+, Cd2+, Ni2+, Th4+, Ca2+, Na+, and K+) and interfering anions (such as SO4-, CO3-, NO3-, and Cl-) were studied by equilibrating different concentrations of uranium solutions. Pseudo-first-order and pseudo-second-order rate expressions have been used to test the experimental data. The rate constants of adsorption for both the kinetic models have been calculated. The pseudo-second order rate reaction provides the best correlation of the data. The values of adsorption data were fitted to Freundlich, Langmuir, and Dubinin-Radushkorich (D-R) adsorption isotherms. The mean energy of adsorption was calculated to be 10.10 kJ/mol from the D-R adsorption isotherm. The probable mechanism of radionuclide removal was its dissolution, followed by subsequent precipitation. X-ray diffractograms of the radionuclidesorbed mineral adsorbent indicates the precipitation of new compound at a higher radionuclide concentration (>100 mg/L).

Keywords: Activated Carbon, Adsorption, Adsorption Isotherm, Adsorption Isotherms, Aqueous-Solutions, Biosorption, Cu2+, Divalent Metal-Ions, Energy, Hydroxyapatite, Isotherm, Isotherms, K+, Lead, Removal, Rock Phosphate, Sorption, Uranium

? Chen, C.L. and Wang, X.K. (2006), Adsorption of Ni(II) from aqueous solution using oxidized multiwall carbon nanotubes. *Industrial & Engineering Chemistry Research*, **45** (26), 9144-9149.

Full Text: [2006\Ind Eng Che Res45, 9144.pdf](2006/Ind%20Eng%20Che%20Res45,%209144.pdf)

Abstract: In this work, oxidized multiwall carbon nanotubes (MWCNTs) were used as a novel adsorbent for removing Ni(II) from aqueous solution. The adsorption of Ni(II) onto oxidized MWCNTs was studied as a function of contact time, pH, ionic strength, MWCNT concentration, and temperature. The results showed that Ni(II) adsorption onto MWCNTs is strongly dependent on pH and oxidized MWCNT concentration and, to a lesser extent, ionic strength. Kinetic data indicated that the adsorption process achieved equilibrium within 40 min and follows a pseudo-second-order rate equation. The adsorption data fit the Langmuir model and its linearized form well, together with thermodynamic data indicating the spontaneous and endothermic nature of the process. Results of a desorption study showed that Ni(II) adsorbed onto oxidized MWCNTs could be easily desorbed at pH < 2.0. Ion exchange may be the predominant mechanism of Ni(II) adsorption on oxidized MWCNTs. Oxidized MWCNTs may be a promising candidate for concentration of heavy metal ions from industrial wastewater.

Keywords: Adsorption, Equilibrium, Heavy Metal, Heavy Metal Ions, Ionic Strength, Model, Purification, Red Mud, Removal, Room-Temperature, Temperature, Wastewater, Water

? Petrolekas, P.D. and Maggenakis, G. (2007), Kinetic studies of the liquid-phase adsorption of a reactive dye onto activated lignite. *Industrial & Engineering Chemistry Research*, **46** (4), 1326-1332.

Full Text: [2007\Ind Eng Che Res46, 1326.pdf](2007/Ind%20Eng%20Che%20Res46,%201326.pdf)

Abstract: The kinetics of batch adsorption of a commercial reactive dye onto activated lignite has been investigated at temperatures of 26, 40, and 55 degrees C, using aqueous solutions with initial dye concentrations in the range of 15-60 mg/L. An empirical single parameter relationship of the adsorbent loading versus the square root of contact time was proposed, which was determined to provide a very good description of the batch adsorption transients up to equilibrium. The data were also examined by means of the Elovich equation. The effect of the temperature and the initial dye concentration on the adsorption kinetics was analyzed, and the results were discussed by considering that intraparticle diffusion is the dominant mechanism.

Keywords: Aqueous-Solution, Diffusion-Models, Basic Dye, Carbon, Removal, Sorption, Equilibrium, Chitosan, Behavior, Peat

? Sheng, P.X., Ting, Y.P. and Chen, J.P. (2007), Biosorption of heavy metal ions (Pb, Cu, and Cd) from aqueous solutions by the marine alga *Sargassum* sp. in single- and multiple-metal systems. *Industrial & Engineering Chemistry Research*, **46** (8), 2438-2444.

Full Text: [2007\Ind Eng Che Res46, 2438.pdf](2007/Ind%20Eng%20Che%20Res46,%202438.pdf)

Abstract: The sorption of heavy metals (lead, copper, and cadmium) by a marine algal biomass Sargassum sp. was studied in single and multiple metal-ion systems. Kinetic experiments in the single-metal system revealed very rapid removal rates of metal ions, with similar to 90% of the total adsorption occurring within 10-60 min. Biosorption performance for each single metal ion showed an increase in specific metal uptake with an increase in pH. Experimental data for each metal ion were well-described by the Langmuir adsorption isotherm. Generally, the algal biomass demonstrated the highest uptake for lead, followed by copper and cadmium, with this uptake trend correlating with the electronegativities and stability constants of the metal-ion hydroxides. The effect of the presence of multiple metal ions on the biosorption performance has been investigated, and the results have been evaluated using the modified competitive Langmuir model and modified Jain-Snoeyink model, both of which fit the data well. The metals with the highest uptake capacity in single-metal systems showed a greater inhibitory effect on the biosorption of other metal ions in the multiple-component systems. The study showed the good performance of metal uptake by Sargassum in both single- and multiple-metal systems.

Keywords: Pretreated Biomass, Activated-Sludge, Adsorption, Removal, Cadmium, Equilibrium, Kinetics, Carbon, Copper, Waste

? Rengaraj, S., Yeon, J.W., Kim, Y. and Kim, W.H. (2007), Application of Mg-mesoporous alumina prepared by using magnesium stearate as a template for the removal of nickel: Kinetics, isotherm, and error analysis. *Industrial & Engineering Chemistry Research*, **46** (9), 2834-2842.

Full Text: [2007\Ind Eng Che Res46, 2834.pdf](2007/Ind%20Eng%20Che%20Res46,%202834.pdf)

Abstract: A new and novel adsorbent of Mg-mesoporous alumina prepared via a templating method was used to adsorb nickel from aqueous solution. The adsorption mechanism is assumed to be an ion exchange between Ni(II) and magnesium ion present on the surface of the newly prepared mesoporous alumina. The sorption was examined in terms of its equilibria and its kinetics. The sorption data have been analyzed and fitted to the linearized adsorption isotherms of the Freundlich, Langmuir, Temkin, and Dubin-Redushkevich models. The kinetic studies showed that the sorption rates could be described well by a pseudo-second-order expression rather than by the more commonly applied Lagergren pseudo-first-order kinetic model. The best fitting of experimental results to the proposed isotherms was observed in models that assume that ionic species bind first at the energetically most favorable sites. The results show that Mg-mesoporous alumina holds great potential to remove Ni(II) species from aqueous solution because the Delta G value of Mg(II), which is present in mesoporous alumina, has a more negative value when compared with Ni ion.

Keywords: Acid Dye, Activated Carbon, Adsorbent, Adsorption, Adsorption Isotherms, Adsorption Mechanism, Alumina, Analysis, Aqueous Solution, Aqueous-Solution, Equilibrium, Error Analysis, Freundlich, Ion, Ion Exchange, Ion-Exchange, Ionic Species, Ions, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Magnesium, Mechanism, Mesoporous, Mesoporous Alumina, Model, Models, Natural Adsorbents, Ni(II), Nickel, Pseudo-Second-Order, Removal, Salts, Sites, Sorption, Surface

? Baydemir, G., Andaç, M., Bereli, N., Say, R. and Denizli, A. (2007), Selective removal of bilirubin from human plasma with bilirubin-imprinted particles. *Industrial & Engineering Chemistry Research*, **46** (9), 2843-2852.

Full Text: [2007\Ind Eng Che Res46, 2843.pdf](2007/Ind%20Eng%20Che%20Res46,%202843.pdf)

Abstract: The objective of this study is to prepare bilirubin-imprinted polymeric particles for the selective removal of bilirubin from hyperbilirubinemic human plasma. N-methacryloyl-(L)-tyrosine methylester (MAT) was chosen as the complexing monomer. In the first step, functional monomer MAT was synthesized by the reaction of L-tyrosine methylester and methacryloyl chloride and characterized by nuclear magnetic resonance (NMR). Bilirubin then was complexed with MAT and the bilirubin-imprinted poly(2-hydroxyethyl methacrylate-N-methacryloyl-(L)-tyrosine methylester) [MIP] was produced by bulk polymerization. The template molecules (i.e., bilirubin) then were removed using sodium carbonate and sodium hydroxide. MIP particles were characterized by elemental analysis, water uptake tests, Fourier transform infrared (FTIR) spectroscopy, and scanning electron microscopy (SEM). Bilirubin adsorption experiments from human plasma were performed in a batch experimental setup. Cholesterol and testosterone were used as competing molecules in selectivity tests. Obtained results were as follows: the water uptake ratio of MIP and non-imprinted (NIP) particles were 64.7% and 51.3%, respectively, in water. According to the elemental analysis results, the incorporation of MAT was 69.0 mu mol/g for MIP particles. SEM micrographs showed the surface roughness and porosity. The specific surface area of the MIP particles was determined to be 27.8 m2/g. The pore diameter of the MIP particles varied over a range of 20-245 angstrom and the average pore diameter was 25.0 angstrom. Template molecules (i.e., bilirubin) were removed from the polymer structure in the ratio of 87% of the initial concentration. Bilirubin adsorption increased as the bilirubin concentration increased, up to 0.8 mg/mL. The maximum bilirubin adsorption capacity was 3.4 mg/g of the dry weight of particles. MIP particles were 6.3 and 3.0 times more selective, with respect to the cholesterol and testosterone, respectively. Reusability of the MIP particles was also investigated. MIP particles showed a negligible loss in the bilirubin adsorption capacity after five adsorption-desorption cycles with the same adsorbent.

Keywords: Ethylene Glycol Dimethylacrylate, Anion-Exchange Resin, Affinity Membrane, Alpha-Bilirubin, Adsorption, Albumin, Beads, Acid, Recognition, Microbeads

? Cotoruelo, L.M., Marques, M.D., Rodriguez-Mirasol, J., Cordero, T. and Rodriguez, J.J. (2007), Adsorption of aromatic compounds on activated carbons from lignin: Kinetic study. *Industrial & Engineering Chemistry Research*, **46** (9), 2853-2860.

Full Text: [2007\Ind Eng Che Res46, 2853.pdf](2007/Ind%20Eng%20Che%20Res46,%202853.pdf)

Abstract: The kinetics of adsorption of five aromatic compounds in aqueous solution was studied in a batch system using activated carbons from eucalyptus kraft lignin as adsorbents. The batch adsorption processes were carried out in a range of temperatures; the values for the experimental variables were selected from previous tests. The rate and the adsorption yield were the main output information. The extent of adsorption is reported as plots of the adsorbate concentration on the solid phase versus time; an empirical equation has been applied for the experimental kinetic data fittings. The apparent mass-transfer order has been determined by applying a pseudo-nth-order rate equation. In addition, effective intraparticle diffusion coefficients have been estimated for all the studied cases.

Keywords: Phenolic-Compounds, Aqueous-Solutions, Waste-Water, Methylene-Blue, Removal, Equilibrium, Model, Adsorbent, Sorption, Mechanism

? Bhattacharyya, K.G. and Sen Gupta, S. (2007), Influence of acid activation of kaolinite and montmorillonite on adsorptive removal of Cd(II) from water. *Industrial & Engineering Chemistry Research*, **46** (11), 3734-3742.

Full Text: [2007\Ind Eng Che Res46, 3734.pdf](2007/Ind%20Eng%20Che%20Res46,%203734.pdf)

Abstract: Two common clay minerals, kaolinite and montmorillonite, are activated by treating with 0.25 M H2SO4, and the effects of acid treatment are monitored with XRD and FTIR measurements and by measuring changes in surface area and the cation exchange capacity (CEC). Kaolinite, montmorillonite, and their acid-activated forms are used as adsorbents for removing Cd(II) from water in a batch process with variations in initial Cd(II) concentration, amount of clay, pH, time, and temperature. Different models of kinetics and isotherms are tested by the data-fitting procedure. Kaolinite is much inferior to montmorillonite with respect to Cd(II) adsorption, and acid activation enhances adsorption to different extents for the two clays. Langmuir monolayer capacity has the values of 9.9, 11.4, 32.7, and 33.2 mg g-1 for kaolinite, acid-activated kaolinite, montmorillonite, and acid-activated montmorillonite respectively. Adsorption follows an endothermic path with decrease in entropy and Gibbs energy.

Keywords: Aqueous-Solution, Cadmium Adsorption, Catalytic-Activity, Waste-Waters, Heavy-Metal, Copper, Clays, Retention, Sorption, Temperature

? El Qada, E.N., Allen, S.J. and Walker, G.M. (2007), Kinetic modeling of the adsorption of basic dyes onto steam-activated bituminous coal. *Industrial & Engineering Chemistry Research*, **46** (14), 4764-4771.

Full Text: [2007\Ind Eng Che Res46, 4764.pdf](2007/Ind%20Eng%20Che%20Res46,%204764.pdf)

Abstract: The principal aim of this work is to investigate the mechanism of basic dye (methylene blue (MB) and basic red (BR)) adsorption onto activated carbons produced from steam-activated bituminous coal. The rate of adsorption onto various activated carbons, produced in small laboratory-scale and pilot-industrial-scale processes, was investigated under a variety of conditions. The kinetic data from these investigations were correlated to a number of adsorption models in an attempt to elucidate the mechanism of the adsorption processes. The adsorption mechanism was found to follow pseudo-second-order and intraparticle-diffusion models, with external mass transfer predominating in the first 5 min of the experiment. Filtrasorb 400 (Chemviron Carbon) exhibited the highest adsorption rate for the removal of basic dyes followed by activated carbons produced by our research group: PAC1 (activated carbon produced from Venezuelan bituminous coal in small laboratory scale using physical activation technique) and PAC2 (activated carbon produced by the steam activation of New Zealand bituminous coal on a pilot-industrial scale).

Keywords: Activated Carbon, Activated Carbons, Activation, Adsorption, Adsorption Mechanism, Adsorption Models, Adsorption Rate, Aqueous-Solution, Bagasse Pith, Basic Dye, Basic Dyes, Bituminous Coal, Br, Carbon, Coal, Color Removal, Diffusion-Model, Dye, Dyes, Experiment, External Mass Transfer, Group, Intraparticle Diffusion, Investigations, Kinetic, Liquid-Phase Adsorption, Mass Transfer, Mass-Transfer, Mass-Transfer Processes, MB, Mechanism, Metal-Ions, Methylene Blue, Methylene-Blue, Modeling, Models, New Zealand, Physical, Physical Activation, Pseudo Second Order, Pseudo-Second-Order, Reactive Dyes, Removal, Research, Scale, Steam Activation, Transfer, Waste-Water

? Biswas, K., Saha, S.K. and Ghosh, U.C. (2007), Adsorption of fluoride from aqueous solution by a synthetic Iron(III)-Aluminum(III) mixed oxide. *Industrial & Engineering Chemistry Research*, **46** (16), 5346-5356.

Full Text: [2007\Ind Eng Che Res46, 5346.pdf](2007/Ind%20Eng%20Che%20Res46,%205346.pdf)

Abstract: This paper presents the synthesis of iron(III)-aluminum(III) mixed oxide with some of its physicochemical characteristics and fluoride adsorption behavior thereon. Results showed that the optimum initial pH for fluoride adsorption is 4.0-10.0, and the equilibrium time required is 1.5 h. The isotherm data follow the order Redlich-Peterson >= Langmuir > Freundlich > Temkin. The Langmuir monolayer adsorption capacity of the adsorbent is determined to be 17.73 mg/g, which is higher than that of either of the pure oxides. The enthalpy change (Delta H degrees) and entropy change (Delta S degrees) for the adsorption reaction are +29.31 kJ/mol and +116.75 J mol-1 K-1, respectively. The adsorption is endothermic in nature. The kinetics follows a pseudo-second-order rate equation, and the reaction rate is a multistage-controlled diffusion process. The activation energy for this adsorption reaction is 6.35 kJ/mol.

Keywords: Activated Alumina, Activation, Activation Energy, Adsorbent, Adsorption, Adsorption Behavior, Adsorption Capacity, Aqueous Solution, Behavior, Capacity, Characteristics, Diffusion, Donnan Dialysis, Drinking-Water, Endothermic, Energy, Enthalpy, Entropy, Equilibrium, Equilibrium Time, Fluoride, Fluoride Adsorption, Fly-Ash, Freundlich, Ions, Isotherm, Isotherm Data, Kinetics, Langmuir, Langmuir Monolayer, Low-Cost Materials, Methylene-Blue, Monolayer, Order, Oxide, Oxides, Paper, pH, Process, Pseudo Second Order, Pseudo-Second-Order, Rate, Rate Equation, Reaction, Reaction Rate, Redlich-Peterson, Removal, Sorption, Synthesis, Synthetic, Time

? Wang, H.L. and Jiang, W.F. (2007), Adsorption of dinitro butyl phenol (DNBP) from aqueous solutions by fly ash. *Industrial & Engineering Chemistry Research*, **46** (16), 5405-5411.

Full Text: [2007\Ind Eng Che Res46, 5405.pdf](2007/Ind%20Eng%20Che%20Res46,%205405.pdf)

Abstract: Fly ash, which is a waste generated in local thermal power plants, has been collected and converted to a low-cost and efficient adsorbent. The prepared adsorbent has been characterized and used for the removal of a typical alkyl dinitro phenol compound, 2-sec-butyl-4,6-dinitrophenol (DNBP), from aqueous solution. Adsorption studies include the effect of contact time, temperature, initial solute concentration, adsorbent dosage, pH, and particle size on the uptake of DNBP. The results show that the high adsorption capacity and sufficient removal efficiencies can be achieved at an optimum pH of 4.0, using 5 g/L of adsorbent with a particle size of 160-200 mesh in 120 min of equilibration time. The adsorption of DNBP increased as the temperature increased, which indicated that the process was endothermic in nature. The thermodynamic parameters (such as the free energy, enthalpy, and entropy of adsorption) were calculated based on a statistical model. Interpretation of the results was given. Kinetic studies have been performed to understand the mechanism of adsorption. The adsorption occurred via a film diffusion mechanism at lower concentrations (<= 8.33 x 10(-5) M) and via particle diffusion at higher concentrations (>= 1.25 x 10(-4) M). The adsorption of DNBP followed pseudo-second-order rate kinetics. Some experiments have also been performed for the purpose of regenerating the used saturated fly ash. The results indicate that fly ash can be used for the efficient removal of DNBP from aqueous solutions.

Keywords: Activated Carbon-Cloth, Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Aqueous Solution, Aqueous Solutions, Ash, Capacity, Concentration, Concentrations, Contact Time, Diffusion, Dosage, Endothermic, Energy, Enthalpy, Entropy, Equilibrium, Film, Film Diffusion, Fly Ash, Fly-Ash, Free Energy, General Treatment, Kinetics, Local, Low-Cost Adsorbent, Mechanism, Mesh, Model, P-Nitrophenol, Parameters, Particle, Particle Diffusion, Particle Size, pH, Phenol, Plants, Power Plants, Process, Pseudo Second Order, Pseudo-Second-Order, Rate, Red Mud, Removal, Size, Solute Concentration, Solutions, Sorption, Sugar-Industry Waste, Temperature, Thermodynamic, Thermodynamic Parameters, Time, Uptake, Waste, Water

? Altintaş, E.B., Tüzmen, N., Uzun, L. and Denizli, A. (2007), Immobilized metal affinity adsorption for antibody depletion from human serum with monosize beads. *Industrial & Engineering Chemistry Research*, **46** (23), 7802-7810.

Full Text: [2007\Ind Eng Che Res46, 7802.pdf](2007/Ind%20Eng%20Che%20Res46,%207802.pdf)

Abstract: Iminodiacetic acid (IDA)-functionalized adsorbents have attracted increasing interest in recent years for immobilized metal-affinity chromatography (IMAC). In this study, IDA was covalently attached to nonporous monosize poly(glycidyl methacrylate) [poly(GMA)] beads (1.6 mu m in diameter). Cull ions were chelated via IDA groups for affinity depletion of immunoglobulin G (IgG) from human serum. The monosize poly(GMA) beads were characterized by scanning electron microscopy. The Cu2+ -chelated beads (628 mu mol/g) were used in the IgG adsorption - elution studies. Studies to determine the effects of IgG concentration, pH, and temperature on the adsorption efficiency Of Cull -chelated beads were performed in a batch system. Nonspecific binding of IgG to monosize beads in the absence of Cu2+ ions was very low (0.45 mg/g). The IgG adsorption to chelated Cull ions was 171.2 mg/g. The equilibrium IgG adsorption increased with increasing temperature. The negative change in Gibbs free energy (Delta G degrees < 0) indicated that the adsorption of IgG on the Cu2+ - chelated beads was a thermodynamically favorable process. The Delta S and Delta H values were 172.1 J/mol.K and -43.2 kJ/mol, respectively. A significant amount of the adsorbed IgG (up to 97.2%) was eluted in the elution medium containing 1.0 M NaCl in 1 h. The kinetics of the interactions suggest that the interactions could be best represented by a mechanism based on second-order kinetics (k = 9.8×10-5 to 118.9×10-5 g.mg-1.min-1). The adsorption followed the Langmuir isotherm model with monolayer adsorption capacity of 156.2-212.8 mg/g. Consecutive adsorption - elution experiments showed that the Cu2+ -chelated beads can be reused almost without any loss in the IgG adsorption capacity. To test the efficiency of IgG depletion from human serum, proteins in the serum and eluted portion were analyzed by two-dimensional gel electrophoresis. The depletion efficiency for IgG was above 98.2%. Eluted proteins include mainly IgG and a negligible amount of non-albumin proteins such as apo-lipoprotein A1, sero-transferrin, haptoglobulin, and alpha 1-antitrypsin. When anti-HSA-Sepharose adsorbent is used together with our metal-chelated monosize poly(GMA) beads, IgG and HSA can be depleted in a single step.

Keywords: Acid, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Efficiency, Affinity, Affinity Adsorption, Affinity Depletion, Antibody, Batch, Batch System, Beads, Binding, Binding Ligand, Biomimetic Ligands, Capacity, Chromatography, Concentration, Cu2+, Depletion, Diameter, Effects, Efficiency, Electron Microscopy, Electrophoresis, Elution, Energy, Equilibrium, Experiments, Free Energy, Free-Energy, G, Gel, Gel Electrophoresis, Gel-Electrophoresis, Gibbs Free Energy, Groups, Hollow-Fiber Membranes, Hsa, Human, Human Plasma, Human Serum, Human-Igg, Human-Immunoglobulin-G, Igg, Imac, Immobilized, Immobilized Metal Affinity, Immobilized Metal Affinity Chromatography, Immunoglobulin, Immunoglobulin G, Interactions, Ions, Isotherm, Isotherm Model, Kinetics, L-Histidine, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Langmuir-Isotherm, Low, Mass-Spectrometry, Mechanism, Metal, Metal Affinity, Metal-Affinity, Methacrylate, Microscopy, Model, Monolayer, Monolayer Adsorption, Monosize Beads, Nacl, Nonporous, pH, Poly(GMA), Process, Protein Depletion, Proteins, Proteomic Analysis, Recent, Scanning Electron Microscopy, Second Order, Second Order Kinetics, Second-Order Kinetics, Serum, Temperature, Test

? Pirillo, S., Ferreira, M.L. and Rueda, E.H. (2007), Adsorption of alizarin, eriochrome blue black R, and fluorescein using different iron oxides as adsorbents. *Industrial & Engineering Chemistry Research*, **46** (24), 8255-8263.

Full Text: [2007\Ind Eng Che Res46, 8255.pdf](2007/Ind%20Eng%20Che%20Res46,%208255.pdf)

Abstract: This work presents kinetic and thermodynamic analysis of the adsorption of three dyes: alizarin, eriochrome blue black R, and fluorescein onto goethite, Co-goethite, and magnetite of medium Brunauer-Emmett-Teller surface area. The adsorption of the dyes on the oxides is fast. Fluorescein exhibits the lowest level adsorption for all adsorbents with goethite being the most efficient adsorbent when milligrams of dye per gram of oxide are considered. The Langmuir isotherm is the most appropriate for describing the adsorption data for the following systems: alizarin-magnetite and eriochrome and fluorescein with the three adsorbents, while alizarin-goethite and alizarin-Co-goethite show better fits with Freundlich isotherm. Molecular modeling using MM2 was used to analyze the steric effects on adsorption.

Keywords: Aqueous-Solutions, Water Interface, Goethite, Removal, Surface, Dyes, Magnetite, Carbon, Color, Decomposition

? Rusten, H.K., Ochoa-Fernandez, E., Lindborg, H., Chen, D. and Jakobsen, H.A. (2007), Hydrogen production by sorption-enhanced steam methane reforming using lithium oxides as CO2-acceptor. *Industrial & Engineering Chemistry Research*, **46** (25), 8729-8737.

Full Text: [2007\Ind Eng Che Res46, 8729.pdf](2007/Ind%20Eng%20Che%20Res46,%208729.pdf)

Abstract: The kinetics of CO2-capture on Li4SiO4 has been examined experimentally and described by a mathematical reaction-rate model. Sorption-enhanced steam methane reforming has been simulated with a fixed-bed reactor model using the formulated capture kinetics. At working conditions of 20 bar, 848 K, a steam-to-carbon ratio of 5, and a superficial inlet gas velocity of 1 m/s, a dry hydrogen mole fraction at the outlet of 0.87 can be reached. The performance of the process with Li4SiO4 is compared to that with Li2ZrO3 as CO2-acceptor. Li4SiO4 gives higher conversion and production capacity at lower steam-to-carbon ratios. A drawback for the process with Li4SiO4 as acceptor is that high conversion is only reached at low fractional conversion of the acceptor. This is due to the fact that the capture kinetics is second order with respect to unreacted solid. The total reaction is endothermic, and effective heat exchange is necessary to avoid a dramatic drop in the reactor temperature. A fluidized-bed reactor has also been simulated, and the results have been compared to those of the fixed-bed reactor. The fluidized-bed reactor has some advantages in terms of easier heat integration and continuous regeneration of CO2-acceptor, but compared to the fixed bed, a longer reactor is needed to reach the same conversion.

Keywords: Carbon-Dioxide, Dispersion, Kinetics, Model, Packed-Beds, Solid Reactions, Temperature

? Kumar, K.V., Porkodi, K., Rondon, R.L.A. and Rocha, F. (2008), Neural network modeling and simulation of the solid/liquid activated carbon adsorption process. *Industrial & Engineering Chemistry Research*, **47** (2), 486-490.

Full Text: [2008\Ind Eng Che Res47, 486.pdf](2008/Ind%20Eng%20Che%20Res47,%20486.pdf)

Abstract: A three-layer feed-forward neural network was constructed and tested to analyze the kinetic dye uptake of a batch activated carbon adsorption process. The operating variables studied are the contact time, initial dye concentration, agitation speed, temperature, initial solution pH, activated carbon mass, and volume of the dye solution treated. The studied operating variables were used as the input to the constructed neural network to predict the dye uptake at any time as the output or the target. The constructed network was found to be precise in modeling the rate of dye uptake for the operating conditions studied. The constructed neural network was found to be highly precise in predicting the dye uptake rate for the new input data, which are kept unaware of the trained neural network showing its applicability to determine the reaction rate for any operating conditions.

Keywords: Activated Carbon, Adsorption, Carbon, Dye, Dye Uptake, Kinetic, Modeling, Removal, Temperature

? Basha, S., Murthy, Z.V.P. and Jha, B. (2008), Sorption of Hg(II) from aqueous solutions onto *Carica papaya*: Application of isotherms. *Industrial & Engineering Chemistry Research*, **47** (3), 980-986.

Full Text: [2008\Ind Eng Che Res47, 980.pdf](2008/Ind%20Eng%20Che%20Res47,%20980.pdf)

Abstract: The biosorption potential of Carica papaya for mercury from aqueous solutions was investigated. The biomass exhibited the highest mercury sorption capacity at optimum conditions of pH 6.5 and biomass dosage of 1.0 g/L. To predict the biosorption isotherms and to determine the characteristic parameters for process design, seven single and two parameter isotherm models-Henry’s law, Freundlich, Langmuir, Dubinin-Radushkevich, Temkin, Halsey, and Gin-six three-parameter equations-the Redlich -Peterson, Sips, Khan, Radke-Prausnitz, Toth, and Koble-Corrigan-and four- and five-parameter isotherm equations of Fritz and Schluender isotherm models were applied to experimental data. Three error analysis methods were used to evaluate the experimental data, viz., correlation coefficient, standard error (SE), and sum of squares error (SSE) of the estimate, to find the best fitting isotherm. The best fitting isotherms were found to be Langmuir, Khan, and Fritz - Schluender among the two-, three-, and five-parameter models, respectively. The amide groups of the biomass are involved in chemical interaction with the mercury ion forming a cagelike structure depicted by scanning electron microscopic (SEM) and Fourier transform infrared spectroscopic (FTIR) results.

Keywords: Activated Carbon, Phanerochaete-Chrysosporium, Organic Solutes, Methyl Mercury, Bakers-Yeast, Heavy-Metals, Adsorption, Biosorption, Removal, Biomass

? Bernal-Martínez, L.A., Hernández-López, S., Barrera-Díaz, C., Ureña-Núñez, F. and Bilyeu, B. (2008), Pb(II) sorption under batch and continuous mode using natural, pretreated, and amino-modified ectodermis of *Opuntia*. *Industrial & Engineering Chemistry Research*, **47** (4), 1026-1034.

Full Text: [2008\Ind Eng Che Res47, 1026.pdf](2008/Ind%20Eng%20Che%20Res47,%201026.pdf)

Abstract: This work presents the conditions for Pb(II) removal from aqueous solution using natural, pretreated, and amino-modified Ectodermis of Opuntia. The sorbent materials were characterized using Scanning Electron Microscopy, Fourier Transformed Infrared spectroscopy, Thermogravimetric Analysis (TGA) and UV-vis spectrometry, before and after contact with aqueous Pb(II) solutions. Pretreated Ectodermis of Opuntia with formaldehyde was the best material for the sorption of Pb(II). The Pb(II) uptake process was at a maximum at pH 5.0, which showed an adsoption capacity that was adequately described by a Langmuir adsorption isotherm. The Metcalf-Eddy model was used to describe the adsorption data from column studies; the sorption capacity was 58.46 mg Pb(II)/g for pretreated Ectodermis of Opuntia with 96% removal.

Keywords: Heavy-Metal Biosorption, Aqueous-Solutions, Functional-Groups, Lead Biosorption, Fungal Biomass, Ions, Adsorption, Removal, Waste, Biomaterials

? Maiti, A., Das Gupta, S., Basu, J.K. and De, S. (2008), Batch and column study: Adsorption of arsenate using untreated laterite as adsorbent. *Industrial & Engineering Chemistry Research*, **47** (5), 1620-1629.

Full Text: [2008\Ind Eng Che Res47, 1620.pdf](2008/Ind%20Eng%20Che%20Res47,%201620.pdf)

Abstract: Removal of arsenate (As(V)) ions by adsorption on natural laterite (NL) is investigated in the present study. Both equilibrium and kinetic study over a wide range of operating conditions are tested to evaluate the effectiveness of NL to remove As(V) from water. In the batch study, the effects of adsorbent dose, initial pH, ionic strength of solution, initial arsenate concentration, temperature, and contact time are examined. Batch study reveals that the uptake of arsenate is effective in the pH range of 5.5 to 7.5. The isotherm data is fitted well in the Langmuir isotherm model, and adsorption capacity is found to be 0.565 mg g-1. The effective intraparticle diffusion coefficient of arsenate ions in NL is observed to be in the range of 7.4 to 9.4×10-1 cm2 s-1. Continuous column study using a fixed bed is also carried out. The Adams-Bohart model is applied for the predicting breakthrough curve for column study.

Keywords: Zero-Valent Iron, Aqueous-Solutions, Drinking-Water, Removal, Bangladesh, Kinetics, Sorption, As(III), Alumina, Nanofiltration

? Vasudevan, S., Sozhan, G., Ravichandran, S., Jayaraj, J., Lakshmi, J. and Sheela, S.M. (2008), Studies on the removal of phosphate from drinking water by electrocoagulation process. *Industrial & Engineering Chemistry Research*, **47** (6), 2018-2023.

Full Text: [2008\Ind Eng Che Res47, 2018.pdf](2008/Ind%20Eng%20Che%20Res47,%202018.pdf)

Abstract: The present study provides an electrocoagulation process for the removal of phosphate from drinking water using mild steel as the anode and stainless steel as the cathode. The studies were carried out as a function of pH, temperature, current density, and so forth, and the adsorption capacity was evaluated using both Langmuir and Freundlich isotherm models. The results showed that the maximum removal efficiency of 98% was achieved at a current density of 0.05 A center dot dm-2 at a pH of 6.5. The adsorption of phosphate preferably fitting the Langmuir adsorption isotherm suggests monolayer coverage of adsorbed molecules. The adsorption process follows second-order kinetics. Temperature studies showed that adsorption was endothermic and spontaneous in nature.

Keywords: Adsorption, Adsorption Isotherm, Aluminum, Aqueous-Solutions, Blast-Furnace Slags, Capacity, Drinking Water, Efficiency, Electrodes, Electrolysis, Freundlich, Freundlich Isotherm, Function, Industrial Solid-Waste, Iron, Isotherm, Kinetics, Langmuir, Models, Monolayer, pH, Phosphate, Phosphorus Removal, Removal, Removal Efficiency, Second-Order Kinetics, Sludge, Temperature, Water

? Koƚodyńska, D., Hubicki, Z. and Gȩca, M. (2008), Application of a new-generation complexing agent in removal of heavy metal ions from aqueous solutions. *Industrial & Engineering Chemistry Research*, **47** (9), 3192-3199.

Full Text: [2008\Ind Eng Che Res47, 3192.pdf](2008/Ind%20Eng%20Che%20Res47,%203192.pdf)

Abstract: The paper presents the studies on removal of copper(II) and zinc(II) ions from aqueous solutions in the presence of the tetrasodium salt of polyaspartic acid carried out on commercially available, chelating ion exchangers with different functional groups which are widely applied in the recovery of heavy metal ions from industrial effluents. The research results indicate a high affinity of these resins for the zinc(II) and copper(II) ions. The sorption characteristics of each metal ion in the presence of the complexing agent onto the studied chelating ion exchangers with thiourea, amino methylphosphonate, iminodiacetate, and polyamine groups were represented by the Langmuir isotherms quite well.

Keywords: Sorption Characteristics, Polyaspartyl Polymers, Chelating Resins, Exchange Resins, Acid, EDTA, Adsorption, Binding, Cu(II), Cd(II)

? Chuang, Y.H., Tzou, Y.M., Wang, M.K., Liu, C.H. and Chiang, P.N. (2008), Removal of 2-chlorophenol from aqueous solution by Mg, Al layered double hydroxide (LDH) and modified LDH. *Industrial & Engineering Chemistry Research*, **47** (11), 3813-3819.

Full Text: [2008\Ind Eng Che Res47, 3813.pdf](2008/Ind%20Eng%20Che%20Res47,%203813.pdf)

Abstract: Sorption is a common treatment for removing pollutants from natural environments. Layered double hydroxides (LDHs), which consist of brucite-like positive layers and sodium dodecyl sulfate intercalated with LDH (SDS-LDH), are considered to be potential organic pollutant sorbents. The objectives of this study were (1) to evaluate the impact of removing 2-chlorophenol (2-CP) using Mg-3-Al-(NO3) LDH and SDS-LDH and (2) to investigate the removal efficiencies of these two compounds. All fitted sorption data reveal that the second-order model and the Langmuir model best describe the sorption kinetics and isotherms, respectively. By Visual MinteqA2 (2000) calculation, the dissociation pK(a) of 2-CP is 8.56. The experimental results indicate that a high concentration of 2-CP is sorbed by the hydrophilic-hydrophilic physical interaction of LDH when the pH is > 8.56; however, the hydrophobic-hydrophobic partition interaction of SDS-LDH is more vital when the pH is < 8.56. LDH and SDS-LDH can be removed,not only in the ionic form, but also in the molecular form of 2-CP. The efficiencies of LDH and SDS-LDH, in regard to enhancing 2-CP sorption, are strongly dependent on the pH, 2-CP speciation, ionic strength, and metal dissolution. These results are of practical interest, with respect to the selection of sorbents, to optimize aquatic environment remediation technologies.

Keywords: Adsorption, Aqueous Solution, Complexes, Delamination, Dissolution, Environment, Experimental, Hydrotalcite-Like Compounds, Interaction, Interlayer Anion, Ionic Strength, Isotherms, Kinetics, Langmuir, Langmuir Model, Metal, Model, Nanocomposites, Oxidation, pH, Pk(A), Potential, Remediation, Removal, Sodium Dodecyl Sulfate, Sodium Dodecyl-Sulfate, Solution, Sorption, Sorption Kinetics, Speciation, Sulfate, Surfactants, Technologies, Treatment

? Wang, L.H. and Lin, C.I. (2008), Adsorption of lead(II) ion from aqueous solution using rice hull ash. *Industrial & Engineering Chemistry Research*, **47** (14), 4891-4897.

Full Text: [2008\Ind Eng Che Res47, 4891.pdf](2008/Ind%20Eng%20Che%20Res47,%204891.pdf)

Abstract: Adsorption of lead(II) ion from aqueous solution using rice hull ash (RHA) was explored in this work. The RHA prepared was found to be an efficient adsorbent. Experimental results indicated the rate of removal and the removal at equilibrium could be increased by increasing the initial lead concentration, pH, stroke speed, or adsorption temperature. They were also found to be increased by decreasing RHA dosage. The effects of RHA dosage and initial lead concentration were found to be pronounced, while those of pH, stroke speed, and adsorption temperature were less significant. The data of adsorption kinetics indicated the process was physisorption controlled and the pseudo-second-order rate equation suitably interpreted the overall process. An empirical relationship between lead adsorption and time,was also determined.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Kinetics, Aqueous Solution, Cadmium, Equilibrium, Husk, Kinetics, Lead, Lead(II), Mercury, pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Removal, Rice, Rice Hull, Solution, Sorption, Temperature, Work, Zinc

? Kumar, K.V., Martins, P. and Rocha, F. (2008), Modelling of the batch sucrose crystallization kinetics using artificial neural networks: Comparison with conventional regression analysis. *Industrial & Engineering Chemistry Research*, **47** (14), 4917-4923.

Full Text: [2008\Ind Eng Che Res47, 4917.pdf](2008/Ind%20Eng%20Che%20Res47,%204917.pdf)

Abstract: A three-layer feed-forward artificial neural network (ANN) was constructed and tested to analyze the crystal growth rate of sucrose under different operating conditions. The operating variables studied were used as inputs to predict the corresponding crystal growth rate. The operating variables studied include the supersaturation, temperature, agitation speed, and seed crystal diameter. The constructed ANN was determined to be precise in modeling the crystal growth rate for any operating conditions. The constructed network was also found to be precise in predicting the crystal growth rate for the new input data, which are kept unaware of the trained neural network, showing its applicability to determine the growth rate for any operating conditions of interest. The ANN-predicted crystal growth rates were compared to those from the conventional nonlinear regression analysis. The ANN was observed to be more accurate in predicting the crystal growth rate, irrespective of the operating conditions studied. The correlation coefficients between the experimentally determined crystal growth rate and the crystal growth rates determined by the ANN and multiple nonlinear regression (MNLR) were determined to be 0.999 and 0.748, respectively. The correlation coefficient between the experimentally determined crystal growth rates and the crystal growth rates determined by the ANN for new inputs was observed to be >0.98.

Keywords: Crystal Growth, Crystal-Growth, Crystallization, Kinetics, Lysozyme, Modeling, Prediction, Solubility, Temperature

? Singh, V., Sharma, A.K., Kumari, P. and Tiwari, S. (2008), Efficient chromium(VI) adsorption by *Cassia marginata* seed gum functionalized with poly(methylmethacrylate) using microwave irradiation. *Industrial & Engineering Chemistry Research*, **47** (15), 5267-5276.

Full Text: [2008\Ind Eng Che Res47, 5267.pdf](2008/Ind%20Eng%20Che%20Res47,%205267.pdf)

Abstract: Increasing cost of the chemicals and production of toxic sludge in the Cr(VI) treatment methods have attracted attention toward the use of biosorbents for Cr(VI) removal. The present study evaluates a novel biosorbent derived from Cassia marginata seed gum in the removal of Cr(VI) from the aqueous solution and wastewater. The adsorbent was synthesized using microwave irradiation in the absence of any radical initiator or catalyst in good yield. Adsorbents of different performances could be obtained by varying the amount of the methylmethacrylate, microwave power, and exposure time. A representative sample of microwave synthesized adsorbent was characterized using FTIR, XRD, TGA, and SEM analysis. Cr(VI) sorption was optimized using the copolymer sample of highest grafting ratio and efficiency (270% G and 59.65% E) where the removal was found to be pH and concentration dependent, pH 1.0 being the optimum value at which from 20 mL of 100 ppm Cr(VI) solution, 16.94 mg/g Cr(VI), could be removed using 5 g/L adsorbent dose at 30 degrees C. The adsorption data followed both Langmuir (R-2 = 0.9703) and Freundlich isotherms (R-2 = 0.8957) probably due to the real heterogeneous nature of the surface sites involved in the metal uptake, and overall sorption of Cr(VI) on the biosorbent is complex and involves more than one mechanisms. The adsorption followed second order kinetics, the rate constant being 0.1×10-5 g/(mg min) at 100 mg/L Cr(VI) concentration. The adsorbent was also found efficient in Cr(VI) removal from real industrial wastewater. Used copolymer was recycled after stripping off the adsorbed chromium with 2 M NaOH where after each cycle a successive decrease in the binding capacity was observed. To understand the advantage of using microwaves in the adsorbent synthesis, the copolymer synthesized using a K2S2O8/ascorbic acid redox pair at identical monomer concentrations (220% G and 48.6% E) was also evaluated as Cr(VI) sorbent, and the results obtained were compared with that of microwave synthesized copolymer.

Keywords: Acrylonitrile, Activated Carbon, Adsorbent, Adsorbent Dose, Adsorption, Analysis, Aqueous Solution, Biosorbent, Biosorbents, Capacity, Catalyst, Chitosan, Chromium, Chromium(VI), Concentration, Cost, Cr(VI), Cr(VI) Removal, Cr(VI) Sorption, Efficiency, Exposure, Freundlich, Ftir, Grafting, Guar Gum, Hexavalent Chromium, Isotherms, Kinetics, Langmuir, Mechanisms, Metal, Metal Uptake, Methods, Microwave, Microwaves, Naoh, pH, Polyacrylamide, Rate Constant, Removal, Second Order, Second Order Kinetics, Second-Order, SEM, Sludge, Solution, Sorbent, Sorption, Stripping, Synthesis, System, Treatment, Value, Waste-Water, Wastewater, XRD

? Sarma, J., Sarma, A. and Bhattacharyya, K.G. (2008), Biosorption of commercial dyes on *Azadirachta indica* leaf powder: A case study with a basic dye Rhodamine B. *Industrial & Engineering Chemistry Research*, **47** (15), 5433-5440.

Full Text: [2008\Ind Eng Che Res47, 5433.pdf](2008/Ind%20Eng%20Che%20Res47,%205433.pdf)

Abstract: Biosorbents, collected and prepared from nature, are most widely used for this purpose. In the present work, removal of a basic dye called Rhodamine B from aqueous solution by adsorption onto a biosorbent, Azadirachta indica (neem) leaf powder (AILP), was investigated. Removal was tested in a batch process with concentration of dye solution, AILP load, pH, temperature, and contact time as the working variables. The adsorption was favored by an acidic pH range and was best described by a second-order rate equation. The experimental data were verified by fitting into both Freundlich and Langmuir isotherms. Thermodynamically, the process was found to be exothermic accompanied by a decrease in entropy and increase in Gibbs energy as the temperature of adsorption was increased from 303 to 333 K. The effect of solution temperature, and the determination of the thermodynamic parameters of adsorption of Rhodamine B (RB) on AILP enthalpy of activation, entropy of activation, and free energy of activation, on the adsorption rates are important in understanding the adsorption mechanism. The rate and the transport/kinetic processes of dye adsorption onto the adsorbents are described by applying various kinetic adsorption models. This would lead to a better understanding of the mechanisms controlling the adsorption rate. The pseudo-second-order model was the best choice among all the kinetic models to describe the adsorption behavior of RB onto AILP, suggesting that the adsorption mechanism might be a chemisorption process. The negative value of the enthalpy change suggested that the rise in the solution temperature did not favor RB adsorption onto AILP.

Keywords: Acid Dyes, Activation, Adsorbents, Adsorption, Adsorption Behavior, Adsorption Mechanism, Adsorption Rate, Agricultural Waste, Aqueous Solution, Aqueous-Solution, Azadirachta Indica, Basic Dye, Batch Process, Behavior, Bentonite, Biosorbent, Biosorption, Case Study, Chemisorption, Choice, Concentration, Dye, Dye Adsorption, Dyes, Enthalpy, Entropy, Equilibrium, Exothermic, Experimental, Freundlich, Isotherms, Kinetic, Kinetic Adsorption, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherms, Lead, Malachite Green, Mechanism, Mechanisms, Model, Models, pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Rates, Removal, Second Order, Second-Order, Solution, Temperature, Thermodynamic, Thermodynamic Parameters, Understanding, Value, Water, Work

? Huang, X., Jiao, L.M., Liao, X.P. and Shi, B. (2008), Adsorptive removal of As(III) from aqueous solution by Zr(IV)-loaded collagen fiber. *Industrial & Engineering Chemistry Research*, **47** (15), 5623-5628.

Full Text: [2008\Ind Eng Che Res47, 5623.pdf](2008/Ind%20Eng%20Che%20Res47,%205623.pdf)

Abstract: Compared with arsenate [As(V)], arsenite [As(III)] is more toxic to human health and more difficult to be removed from aqueous solution. In this study, a novel adsorbent, Zr(IV)-loaded collagen fiber (ZrCF), was prepared, and its adsorption characteristics to As(III) were investigated. It was found that ZrCF can effectively remove As(III) from aqueous solution in the pH range of 9.0-12.0. The maximum adsorption capacity of As(III) by ZrCF reached up to 54.02 mg As/g when the initial concentration of As(III) was 73.00 mg/L at 303 K and pH 11.0. The adsorption isotherms of ZrCF to As(III) were well fitted by the Langmuir-Freundlich equation. The adsorption kinetic experimental data were well described by the pseudo-second-order rate equation, and the calculated adsorption capacities were close to those obtained by experiments. The leakage of zirconium loaded on ZrCF was negligible during adsorption process. Therefore, this study indicates that ZrCF is a promising adsorbent for As(III) removal from aqueous solution.

Keywords: Activated Alumina, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherms, Adsorption Kinetic, Aqueous Solution, Arsenate, Arsenic Removal, Arsenite, As(III), Behavior, Capacity, Characteristics, Collagen, Collagen Fiber, Concentration, Experimental, Experiments, Ferric-Chloride, General Treatment, Health, Human, Iron, Isotherms, Kinetic, Langmuir-Freundlich, Model, Oxide, pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Removal, Solution, Speciation, Water

? Anirudhan, T.S. and Ramachandran, M. (2008), Synthesis and characterization of amidoximated polyacrylonitrile/organobentonite composite for Cu(II), Zn(II), and Cd(II) adsorption from aqueous solutions and industry wastewaters. *Industrial & Engineering Chemistry Research*, **47** (16), 6175-6184.

Full Text: [2008\Ind Eng Che Res47, 6175.pdf](2008/Ind%20Eng%20Che%20Res47,%206175.pdf)

Abstract: A new adsorbent, polyacrylonitrile/organobentonite composite with amidoxime functionality was prepared using in situ intercalation polymerization technique and characterized by Fourier transform infrared spectroscopy, X-ray diffraction pattern, scanning electron microscopy, surface area analyzer, thermogravimetry, and potentiometric analysis. The adsorption of Cu(II), Zn(II), and Cd(II) ions was, examined by batch-equilibrium technique with respect to the initial pH, adsorbent dose, ionic strength, contact time, and initial metal concentration. Adsorption-complexation, in addition to ion exchange, must be involved in the sorption process. Maximum adsorption of 99.8% Cu(II), 98.9% Zn(II), and 97.4% Cd (II) with 2 g/L of the adsorbent was observed at pH 6.0 for an initial metal concentration of 25 mg/ L. The kinetic data were reasonably correlated with pseudosecond-order kinetic equation. An increase of ionic strength on the medium caused a decrease in metal adsorption, indicating the occurrence of outer-sphere surface complex mechanism for the metal. The equilibrium isotherm data were analyzed using Langmuir, Freundlich, and Scatchard isotherm models; however, the Langmuir model was found to provide the best correlation. The maximum monolayer adsorption capacity was 77.43, 65.40, and 52.61 mg/g for Cu(II), Zn(II), and Cd(II) ions, respectively, at 30 degrees C. The adsorption efficiency toward heavy metals removal was tested using different industry wastewaters. Acid regeneration was tried for several cycles with a view to recover the adsorbed metals and also to restore the adsorbent to its original state.

Keywords: Heavy-Metals, Activated Carbon, Waste-Water, Natural Bentonite, Removal, Ions, Sorption, Nanocomposites, Acid, Cadmium(II)

? Kolodyńska, D., Hubicki, Z. and Gȩca, M. (2008), Polyaspartic acid as a new complexing agent in removal of heavy metal ions on polystyrene anion exchangers. *Industrial & Engineering Chemistry Research*, **47** (16), 6221-6227.

Full Text: [2008\Ind Eng Che Res47, 6221.pdf](2008/Ind%20Eng%20Che%20Res47,%206221.pdf)

Abstract: In the presented paper, the sorption of copper(II) and zinc(II) in the presence of polyaspartic acid sodium salt on polystyrene ion exchangers from aqueous solutions was studied. This polyaspartic acid sodium salt is an active, water soluble polyaminocarboxylate with the multifunctional property profile. It is a complexing agent of a new generation as it undergoes biodegradation thus being an alternative for the reagents of the EDTA or NTA type. On the basis of the research, the applicability of gel and macroporous polystyrene anion exchangers with different functional active groups, Lewatit MonoPlus M 500, Lewatit MonoPlus M 600, and Lewatit MonoPlus MP 500 as well as Lewatit MonoPlus MP 64 and Lewatit MP 62, was determined by the dynamic technique. Batch experiments were also carried out to determine the factors affecting sorption and kinetics of the sorption process.

Keywords: EDTA Complexes, Activated Carbon, Chelating-Agents, Aquatic Environment, Sorption, Copper, Kinetics, Recovery, Cadmium, Electrolysis

? Akar, T., Anilan, B., Kaynak, Z., Gorgulu, A. and Akar, S.T. (2008), batch and dynamic flow biosorption potential of *Agaricus bisporus*/*Thuja orientalis* biomass mixture for decolorization of RR45 Dye. *Industrial & Engineering Chemistry Research*, **47** (23), 9715-9723.

Full Text: [2008\Ind Eng Che Res47, 9715.pdf](2008/Ind%20Eng%20Che%20Res47,%209715.pdf)

Abstract: This work reports the batch and dynamic flow biosorption conditions for Reactive Red 45 clue using Agaricus bisporus/Thuja orientalis biomass mixture (ABTOC). Experiments were performed to determine optimum pH, biomass amount, contact time, temperature, dye concentration, and flow rate. The applicability of different kinetic and isotherm models for the biosorption process was evaluated. Biosorption showed a highly pH dependent profile. Under optimized batch conditions up to 93.04% dye could be removed from solution in a relatively short time. Kinetic experiments suggest that the biosorption process followed the pseudo-second-order model in comparison to intraparticle diffusion and the pseudo-first-order models. Thermodynamic data confirm that the biosorption process is spontaneous and endothermic in nature. Besides, the highest regression coefficient (r2 approximate to 1) for the Langmuir model indicates the monolayer coverage of biomass by RR45 dye molecules (q(max) = 108.90 mg g-1). Column studies showed that ABTOC effectively removes RR45 dye with a maximum biosorption yield of similar to 100%. ABTOC was able to give nearly 96% dye removal in the presence of Na+, K+, Mg2+, Ca2+, Pb2+, Ni2+, CU2+, and Cd2+ ions. Our results revealed that ABTOC could be employed as an effective and low-cost alternative biosorbent material for removal of reactive textile dyes from contaminated effluents.

Keywords: Aqueous-Solution, Biomass, Biosorbent, Biosorption, Column, Comparison, Cone Biomass, Coverage, Cu2+, Decolorization, Diffusion, Direct Azo-Dye, Dye, Dye Removal, Dyes, Endothermic, Fungal Biomass, Intraparticle Diffusion, Isotherm, Kinetic, Langmuir, Langmuir Model, Low-Cost Adsorbents, Methylene-Blue, Model, Models, Monolayer Coverage, Ni2+, Pb2+, pH, Pseudo Second Order, Pseudo-Second-Order, Reactive Dye, Regression, Removal, Temperature, Textile Dyes, Thermodynamic, Thuja-Orientalis, Treated Biomass, Waste Biomass

? Suryavanshi, U.S. and Shukla, S.R. (2009), Adsorption of Ga(III) on oxidized coir. *Industrial & Engineering Chemistry Research*, **48** (2), 870-876.

Full Text: [2009\Ind Eng Che Res48, 870.pdf](2009/Ind%20Eng%20Che%20Res48,%20870.pdf)

Abstract: Gallium is a strategic material due to its high-tech applications, but its availability in minerals is extremely poor to ensure economically feasible recovery. It is possible through the processing of other Ga-containing minerals, during which Ga gets concentrated. In the present work, Batch-wise adsorption of Ga(III) from the aqueous solution of gallium nitrate having different concentrations was attempted on unmodified (UC) and oxidized coir (OC). The SEM micrographs of OC show more porous structure due to the removal of pits from the coir surface by oxidation, leading to a 1.5 x increase in the surface area. The effect of increasing pH from I to 3 greatly enhanced the adsorption. At pH 3, as high as a 70.53% adsorption was achieved on OC, beyond which Ga does not remain in solution form. Ga(III), being a trivalent ion, possesses substantial acidity, which increases with its concentration. The mechanism of Ga(III) adsorption on UC and OC has been put forward based on ion exchange. The adsorption fits to the Langmuir isotherm model and has been shown to obey pseudo second order kinetics. Considerably high adsorption capacity is gained by the coir upon simple oxidation treatment. The maximum adsorption capacity of OC was observed to be 19.42 mg g(-1), as compared to 13.75 mg g(-1) for UC. Desorption using 0.5 M HCl leads to nearly complete recovery of Ga(III) without affecting the physical characteristics of the adsorbent, like strength and crystallinity.

Keywords: Heavy-Metal Ions, Biosorption Characteristics, Waste Materials, Gallium, Fibers, Dyes

? Anirudhan, T.S., Jalajamony, S. and Divya, L. (2009), Efficiency of amine-modified poly(glycidyl methacrylate)-grafted cellulose in the removal and recovery of vanadium(V) from aqueous solutions. *Industrial & Engineering Chemistry Research*, **48** (4), 2118-2124.

Full Text: [2009\Ind Eng Che Res48, 2118.pdf](2009/Ind%20Eng%20Che%20Res48,%202118.pdf)

Abstract: A cellulose-based anion exchanger (Cell-AE) bearing the -N+HR2Cl- functional group was prepared through graft copolymerization of glycidyl methacrylate onto cellulose (Cell) in the presence of N,N’-methylenebisacrylamide as a cross-linker using benzoyl peroxide as the initiator, followed by amination and hydrochloric acid treatment. The adsorbent was characterized by infrared spectroscopy, scanning electron microscopy, surface area analysis, thermogravimetry, and potentiometric titrations. Batch experiments were performed to evaluate the adsorption efficiency of Cell-AE toward V(V) ions in aqueous solutions. The maximum removal was observed in the pH range of 4.0-6.0. The adsorption process achieved more than 99.6% V(V) removal from an initial concentration of 25.0 mg/L. Adsorption kinetic data were described by pseudo-second-order equation. The equilibrium data fitted very well with the Langmuir model, and the maximum adsorption capacity of Cell-AE toward V(V) was found to be 197.75 mg/g at 30 degrees C. Over 96.0% desorption of V(V) was achieved with 0.1 M NaOH solution.

Keywords: Acid Treatment, Acid-Treatment, Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Efficiency, Adsorption Kinetic, Adsorption Process, Amination, Analysis, Aqueous Solutions, By-Products, Capacity, Cellulose, Chelating Resin, Chitosan, Chromium(III), Concentration, Copolymerization, Data, Desorption, Efficiency, Electron Microscopy, Equilibrium, Experiments, Functional Group, Glycidyl Methacrylate, Graft, Graft Copolymerization, Graft-Copolymers, Group, Infrared, Infrared Spectroscopy, Ions, Kinetic, Kinetics, Langmuir, Langmuir Model, Lignocellulosic Residue, Metal-Ions, Microscopy, Model, NAOH, pH, Process, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Equation, Recovery, Removal, Scanning Electron Microscopy, Solution, Solutions, Spectroscopy, Surface, Surface Area, Thermogravimetry, Treatment

? Gupta, N., Prasad, M., Singhal, N. and Kumar, V. (2009), Modeling the Adsorption Kinetics of Divalent Metal Ions onto Pyrophyllite Using the Integral Method. *Industrial & Engineering Chemistry Research*, **48** (4), 2125-2128.

Full Text: [2009\Ind Eng Che Res48, 2125.pdf](2009/Ind%20Eng%20Che%20Res48,%202125.pdf)

Abstract: The adsorption system was modeled and simulated to predict kinetic parameters for the adsorption of metal cations (lead, copper, and zinc) onto pyrophyllite, a low-cost adsorbent. The developed nonlinear sorption kinetic (NSK) mathematical model was solved using numerical integration (trapezoidal method), the gradient descent method, and least-squares analysis. It was based on application of the Freundlich isotherm to mass transfer across the film surrounding the adsorbent. Batch adsorption experiments were carried out for cation concentrations varying from 5.0 to 100.0 mg L-1. Code was developed in C language both for numerically integrating the model equation and for obtaining the best simulated values of the Freundlich constants, K and N; the order of reaction, n; and the film transfer coefficient, alpha. The model was sensitive to parameters alpha, n, and N, whereas it is insensitive to K. The values of parameters N, n, and a lie in the ranges of 0.185-2.06, 0.943-1.341, and 0.009-0.113 [(L/mg)(n-1) min-1], respectively, under different experimental conditions.

Keywords: Adsorption, Aqueous-Solutions, Cadmium, Cu2+, Kinetics, Lead, Ni2+, Pb(II), Removal, Sorption Kinetics, Surface, Zinc

? Cavus, S. and Gurdag, G. (2009), Noncompetitive Removal of Heavy Metal Ions from Aqueous Solutions by Poly[2-(acrylamido)-2-methyl-1-propanesulfonic acid-co-itaconic acid] Hydrogel. *Industrial & Engineering Chemistry Research*, **48** (5), 2652-2658.

Full Text: [2009\Ind Eng Che Res48, 2652.pdf](2009/Ind%20Eng%20Che%20Res48,%202652.pdf)

Abstract: Noncompetitive removal of Pb2+, Cu2+, and Cd2+ ions from aqueous solutions by the copolymer of 2-(acrylamido)-2-methyl-1-propanesulfonic acid with itaconic acid and its homopolymer poly [2-(acrylamido)2-methyl-1-propanesulfonic acid] was investigated. Both poly[2-(acrylamido)-2-methyl-1-propanesulforlic acid] and poly[2-(acrylamido)-2-methyl-1-propanesulfonic acid-co-itaconic acid] removed the maximum and same amounts (1.74 mmol Pb2+/g polymer) of Pb2+ ion among the ions investigated in this work. The equilibrium swelling values of poly (2-(acryl amido)-2-methyl-1-propanesulfonic acid] and poly [2-(acrylamido)-2-methyl-1-propanesulfonic acid-co-itaconic acid] showed that the swelling of the copolymer is dominated by its completely ionizable constituent 2-(acrylamido)-2-methyl-1-propanesulfonic acid. Although the incorporation of itaconic acid into poly [2-(acrylamido)-2-methyl-1-propane sulfonic acid] did not affect the removal rates of poly [2-(acrylamido)-2-methyl-1-propanesulfonic acid-co-itaconic acid] for Pb2+ and Cd2+ ions, it considerably enhanced the removal rates of the copolymer for the Cu2+ ion. The trends in the single-ion sorption of ions on poly [2-(acrylamido)-2-methyl-1-propanesulfonic acid] and poly [2-(acrylamido)-2-methyl-1-propanesulfonic acid-co-itaconic acid] followed the orders Pb2+ > Cd2+ > Cu2+ and Pb2+ > Cu2+ > Cd2+ respectively. Noncompetitive adsorption profiles of Pb2+, Cu2+, and Cd2+ ions on both polymers were demonstrated to fit the pseudo-second-order-type kinetics.

Keywords: Acrylamide, Acrylic-Acid, Adsorption Properties, Chitosan, Competitive Removal, Free-Radical Copolymerization, Mechanism, Poly(Acrylic Acid), Sulfonic-Acid, Water

? Oladoja, N.A., Aboluwoye, C.O. and Akinkugbe, A.O. (2009), Evaluation of loofah as a sorbent in the decolorization of basic dye contaminated aqueous system. *Industrial & Engineering Chemistry Research*, **48** (6), 2786-2794.

Full Text: [2009\Ind Eng Che Res48, 2786.pdf](2009/Ind%20Eng%20Che%20Res48,%202786.pdf)

Abstract: The hard fibrovascular network of the fruit of Luffa cylindrica, loofah, was used in a batch sorption system to remove methylene blue (MB) from aqueous solution. The effects of pH on the sorption of MB by loofah were studied using equilibrium isotherm experiment. The Langmuir sorption capacity (*q*m, mg/g) of the loofah increased with increase in pH. The Freundlich isotherm models favored the prediction of the theoretical sorption capacity more than the Langmuir isotherm models. The kinetics of the sorption process was studied at varying initial MB concentrations using pseudo-first-order and pseudo-second-order kinetic models. The pseudo-second-order kinetic model was found to fit the experimental data for the entire sorption period with high coefficient of determination (r2). The prospects of regenerating the loofah was studied using four different eluting solvents in batch desorption studies. The results of the batch desorption studies showed that both chemisorption and ion-exchange played prominent role in the sorption process. The elution curve obtained from the continuous desorption studies showed that the elution rate was very fast and high elution efficiency could be obtained with 0.1 M HCl as an eluting solvent. The IR analysis confirmed the presence of polar functional groups and established interactions between the MB molecules and these functional groups.

Keywords: Adsorption, Biosorption, Equilibrium, Isotherm, Kinetics, Methylene Blue, Methylene-Blue, Removal, Sorption

? Feng, H.M., Zhang, S.J., Chen, Y.Z., Ding, Y.W., Yu, H.Q. and Lam, M.H.W. (2009), Fabrication and evaluation of mesoporous poly(vinyl alcohol)-based activated carbon fibers. *Industrial & Engineering Chemistry Research*, **48** (7), 3398-3402.

Full Text: [2009\Ind Eng Che Res48, 3398.pdf](2009/Ind%20Eng%20Che%20Res48,%203398.pdf)

Abstract: Poly(vinyl alcohol)- (PVA-) based activated carbon fibers (ACFs) with a high mesoporosity have been fabricated. The surface area and pore size distribution were fine-tuned by the careful control of the activation temperature and time. A mesopore volume fraction of 66% was obtained by activation at 1173 K for 120 min or 1273 K for 90 min. Raman spectroscopy revealed that more defect sites in the graphitic structure were found in samples with higher mesoporosity. Adsorption experiments demonstrated that the PVA-ACFs exhibited good adsorption capacities for both small-molecular-size iodine and the larger-size methylene blue, with adsorption capacities of up to 1934 and 709 mg/g, respectively. The adsorption kinetics of methylene blue on the PVA-ACFs was simulated by both a pseudo-second-order kinetic model and an intraparticle diffusion model. With an increase in mesoporosity, rate limitations on adsorption due to intraparticle diffusion were dramatically reduced. This resulted in an increase of up to a factor of 7 in the adsorption rate compared to that on microporous PVA-based ACFs.

Keywords: Adsorption, Atrazine, Dyes, Equilibrium, Kinetics, Methylene-Blue, Model, Pore-Size, Rice-Husk, Sawdust

? Vijayaraghavan, K., Arun, M., Joshi, U.M. and Balasubramanian, R. (2009), Biosorption of As(V) onto the Shells of the Crab (*Portunus sanguinolentus*): Equilibrium and Kinetic Studies. *Industrial & Engineering Chemistry Research*, **48** (7), 3589-3594.

Full Text: [2009\Ind Eng Che Res48, 3589.pdf](2009/Ind%20Eng%20Che%20Res48,%203589.pdf)

Abstract: Worldwide concerns over inorganic arsenic in water bodies have prompted much research and policy development focusing on removal of this chronic human carcinogen. In the present study, the potential use of shell particles of crab (Portunus sanguinolentus) for removal of arsenic(V) from aqueous solution was investigated on the basis of systematic equilibrium and kinetic studies. Crab shells favor the removal of arsenate ion, especially under acidic pH conditions, because of the presence of CaCO3 and chitin in the biosorbent. The scanning electron micrographs together with energy dispersive X-ray analysis (EDX) confirmed the presence of arsenic on the crab shells. A series of isotherm experiments conducted at different pH conditions revealed that pH 3 favored arsenic biosorption. Among the four isotherm models (Langmuir, Freundlich, Redlich-Peterson, and Toth) employed in the study, the Toth model provided a better fit with the experimental data than others as revealed by high con-elation coefficients, low % error, and root-mean-square error (rmse) values. The arsenic biosorption kinetics was very fast, and the kinetics data were successfully modeled using nonlinear pseudo-second-order model. As the ionic strength increased, arsenic uptake declined to a great extent. Desorption experiments were conducted to explore the feasibility of regenerating the biosorbent for further use. Results indicated that 0.1 M NaOH was sufficiently strong to remove the biosorbed arsenate ions from the crab shell with elution efficiency of 98.2%.

Keywords: Adsorption, Aqueous-Solution, Arsenic Removal, Aspergillus-Fumigatus, Biomass, Biosorption, Chitosan, Desorption, Equilibrium, Groundwater, Metal-Ions, Particles, Sorption

? Zhu, L., Liu, Y. and Chen, J. (2009), Synthesis of N-Methylimidazolium functionalized strongly basic anion exchange resins for adsorption of Cr(VI). *Industrial & Engineering Chemistry Research*, **48** (7), 3261-3267.

Full Text: [2009\Ind Eng Che Res48, 3261.pdf](2009/Ind%20Eng%20Che%20Res48,%203261.pdf)

Abstract: N-Methylimidazolium functionalized strongly basic anion exchange resins in the Cl- form (RCI) and SO46- form (R2SO4) were synthesized and employed for adsorption of Cr(VI) from aqueous solution. FT-IR and elementary analysis proved the structures of anion exchange resins and the content of functional groups. The gel-type strongly basic anion exchange resins had high thermal stability according to TGA and good chemical stability under the experimental conditions. The adsorption behaviors of Cr(VI) on RCI and R2SO4 were studied using the batch technique. It was shown that adsorption equilibrium was reached rapidly within 60 min. The adsorption data for RCI and R2SO4 were consistent with the Langmuir isotherm equation. The maximum adsorption capacities of RCI and R2SO4 were 132 and 125 mg/g, respectively, with almost all active sites fully occupied. RCI and R2SO4 Could be used in the wide pH range 1-12 and were very suitable to remove Cr(VI) at a low concentration level. They also showed great preference to Cr(VI) compared to the other counterions. RCI was easily regenerated using the mixed solution of 0.3 mol/L NaOH and 0.3 mol/L NaCl, and retained nearly 100% of its orginal capacity during four cycles.

Keywords: Activated Carbon, Aqueous-Solution, Biosorption, Chromate Ion, Electroplating Waste-Water, Hexavalent Chromium, Metal-Ions, Removal, Sorption, Supported Ionic Liquids

? Li, Q., Xing, J.M., Li, W.L., Liu, Q.F. and Su, Z.G. (2009), Separation of succinic acid from fermentation broth using weak alkaline anion exchange adsorbents. *Industrial & Engineering Chemistry Research*, **48** (7), 3595-3599.

Full Text: [2009\Ind Eng Che Res48, 3595.pdf](2009/Ind%20Eng%20Che%20Res48,%203595.pdf)

Abstract: Succinic acid is one of the platform chemicals that can be bioproduced from renewable resources. Separation of succinic acid by adsorption from model solutions and fermentation broth by weak alkaline anion exchange adsorbents was studied. Adsorption capacities and regenerability of several sorts of adsorbents were tested. In a static test, the adsorbent NERCB 09 has the adsorption capacity of 0.11 g succinic acid g-1 at succinic acid concentrations of 5 g L-1. In packed column test, its capacity was as high as 0.56 g succinic acid g-1 when the feeding concentration wag 50 g L-1. NERCB 09 showed the high selectivity toward succinate over both glucose and amino acid at acidic or neutral conditions. Langmuir/Freundlich isotherm models and pseudo-first/second-order equations were presented to simulate the adsorption behavior. Data showed that the temperature had little effect on the adsorption isotherm. Kinetic parameters suggested that about 1.5 h were Sufficient for the adsorption equilibrium. The adsorbent was easily regenerated, The adsorption capacity was steady after 30 cycles and showed 96% average recovery.

Keywords: Adsorption, Aqueous-Solutions, Extraction, Kinetics, Mannheimia-Succiniciproducens, Ph-Greater-Than-Pk(A1), Purification, Recovery, Removal, Sorption

? Kumar, K.V. (2009), Neural network prediction of interfacial tension at crystal/solution interface. *Industrial & Engineering Chemistry Research*, **48** (8), 4160-4164.

Full Text: [2009\Ind Eng Che Res48, 4160.pdf](2009/Ind%20Eng%20Che%20Res48,%204160.pdf)

Abstract: Interfacial tension at the crystal/liquid interface is a crucial and important parameter in crystal growth kinetics. The objective of the present study is to develop a neural network that is simple to use for predicting this important parameter using only from the information of solubility, molecular weight, and density of the studied systems. A three-layer feed-forward neural network was constructed and tested to predict the interfacial tension at the crystal/solution interface. The concentration of solute in liquid phase, concentration of solute in solid phase, temperature, density and molecular weight of crystal were used as inputs to predict the interfacial tension at the crystal/liquid interface (sigma (SL)). The network was trained using the solubility information for 28 systems to predict the sigma (SL) value and was validated with 29 new systems. Despite the limited number of data used for training, the neural network was capable of predicting sigma (SL) successfully for the new inputs, which are kept unaware during the training process. The sigma (SL) value that is predicted by the artificial neural network during the training and testing process was compared with sigma (SL) predicted from the widely used empirical expression. For most of the systems, ANN better predicts sigma(SL), when compared to empirical correlation.

Keywords: Crystal Growth, Crystal-Aqueous-Solution, Crystallization Kinetics, Kinetics, Solubility, Solute, Sucrose, Temperature

? Singh, V., Sharma, A.K. and Maurya, S. (2009), Efficient cadmium(II) removal from aqueous solution using microwave synthesized guar gum-graft-poly(ethylacrylate). *Industrial & Engineering Chemistry Research*, **48** (10), 4688-4696.

Full Text: [2009\Ind Eng Che Res48, 4688.pdf](2009/Ind%20Eng%20Che%20Res48,%204688.pdf)

Abstract: Microwave induced emulsion copolymerization of ethylacrylate and guar gum resulted in copolymer samples of different % grafting (%G) by changing ethylacrylate and guar gum concentrations at fixed microwave power (100%) and exposure time (15 s). The synthesis was done in the absence of any redox initiator/catalyst, and the adsorption behavior of the copolymer (295%G) was investigated by performing both the kinetics and equilibrium studies in batch conditions. Several experimental parameters such as contact time, initial cadmium concentration, temperature, adsorbent dose, electrolyte amount, and pH of the solution were varied to optimize the adsorption conditions. The most favorable pH for the adsorption was pH 9, and at this pH the adsorption data were modeled using Langmuir and Freundlich isotherms. The data fitted satisfactorily to both the isotherms, indicating that the real heterogeneous nature of the surface sites involved in the metal uptake and overall sorption of Cd(II) on the adsorbent was complex and involved more than one mechanism. On the basis of the Langmuir model, Q(0) was calculated to be 714.28 mg/g for microwave synthesized copolymer (mwGG-g-PEA) in comparison to 270.27 for conventionally synthesized copolymer (cvGG-g-PEA), revealing the advantage of using microwaves in the adsorbent synthesis. The sorption by mwGG-g-PEA followed pseudo-second-order kinetics where a linear plot of t/(qt) versus t was obtained, the correlation coefficient (RI) and rate constant at 100 mg/L Cd(II) being 0.9978 and 4.6×10-4 g/mg/min, respectively. The adsorbent exhibited high reusability and could be successfully recycled for nine cycles where in the ninth cycle 38% adsorption was feasible. To understand the role of PEA grafts (in the copolymer) in the adsorption process, different %G samples were evaluated as adsorbent under optimized conditions.

Keywords: Acid Redox Pair, Adsorption, Chitosan, Copolymerization, Graft-Copolymerization, Heavy, Industrial Gums, Metal-Ions, Methacrylate, Seed Gum, Waste-Water

? Kumar, K.V. (2009), A semiempirical kinetics for modeling and simulation of the crystal growth process in pure solutions. *Industrial & Engineering Chemistry Research*, **48** (10), 5105-5110.

Full Text: [2009\Ind Eng Che Res48, 5105.pdf](2009/Ind%20Eng%20Che%20Res48,%205105.pdf)

Abstract: A kinetic model was proposed to explain the growth of crystals in pure solutions based on the solid-phase concentration, assuming that the crystal growth process follows a pseudo-second-order kinetics. The initial crystallization rate was defined based on the pseudo-second-order kinetics. The proposed model was determined to be useful in predicting the rate constant, the solid-phase concentration at equilibrium, and the initial crystallization rate. The pseudo-second-order kinetic model was applied to the experimental data of the sucrose crystal growth process for different operating temperatures and seed crystal diameters. The proposed model was accurate in modeling the experimental kinetics of sucrose crystallization process for the range of operating conditions studied. The coefficient of determination between experimental data and predicted kinetics varied from r(2) = 0.943 to r(2) = 0.982 at the studied temperatures. The calculated kinetic parameters were used to generate three-dimensional empirical correlations relating the crystal growth of sucrose for the range of temperature studied. The proposed model was very simple with only two unknown parameters, which can be easily determined by a simple linear or nonlinear regression analysis.

? Suryavanshi, U.S. and Shukla, S.R. (2009), Rebuttal to “Comments on ‘Adsorption of Ga(III) on Oxidized Coir’”. *Industrial & Engineering Chemistry Research*, **48** (12), 5919.

Full Text: [2009\Ind Eng Che Res48, 5919.pdf](2009/Ind%20Eng%20Che%20Res48,%205919.pdf)

Keywords: Adsorption

? Ho, Y.S. (2009), Comments on “Adsorption of Ga(III) on Oxidized Coir”. *Industrial & Engineering Chemistry Research*, **48** (12), 5920.

Full Text: [2009\Ind Eng Che Res48, 5920.pdf](2009/Ind%20Eng%20Che%20Res48,%205920.pdf)

Keywords: Peat, Sorption.

? Oladoja, N.A. and Akinlabi, A.K. (2009), Congo Red biosorption on palm kernel seed coat. *Industrial & Engineering Chemistry Research*, **48** (13), 6188-6196.

Full Text: [2009\Ind Eng Che Res48, 6188.pdf](2009/Ind%20Eng%20Che%20Res48,%206188.pdf)

Abstract: Palm kernel coat (PKC), a waste product of oil palm production, was studied as a biosorbent for Congo Red (CR) (an anionic dye) attenuation in an aqueous stream. A batch sorption system was used, and the system variables studied included initial CR concentration and PKC dosage. A batch sorption model, based on the assumption of pseudo-first-order and pseudo-second-order mechanisms, was applied to understand the sorption dynamics of CR onto PKC and to predict the rate constant of sorption, the equilibrium sorption capacity, and the initial sorption rate when the two process variables were optimized. The linear coefficient of determination (r2) and the nonlinear chi-square test (χ2) Were used to assess the fitting of the sorption dynamics to either model. An equation was developed using the pseudo-second-order model, which predicts the amount of CR at any contact time and initial concentration within the given range. The rate-limiting step of die sorption reaction was also determined using the intraparticle diffusion, liquid film diffusion, and Boyd kinetic models, The results obtained showed that intraparticle diffusion becomes rate controlling at low concentration while at high concentration film diffusion is the main rate-controlling parameter. The results of the batch desorption studies showed that chemisorption played a prominent role in the sorption process. Tire elution curve obtained from the continuous desorption studies showed that the elution rate was fast and high elution efficiency could be obtained with 0.1 M CH3COOH as an eluting solvent.

Keywords: Adsorbent, Adsorption, Aqueous Stream, Aqueous-Solutions, Basic Dye, Batch, Biosorbent, Biosorption, Capacity, Chemisorption, Chi-Square, Concentration, Congo Red, Cr, Desorption, Desorption Studies, Diffusion, Dye, Dynamics, Efficiency, Elution, Equilibrium, Film Diffusion, Intraparticle Diffusion, Kinetic, Kinetic Models, Liquid, Mechanisms, Model, Models, Orange Peel, PKC, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Rate Constant, Rate Limiting Step, Rate-Limiting Step, Removal, Role, Sawdust, Shell, Sorption, Sorption Capacity, Sorption Process, Stream, Waste

? Das, S., Pandey, A.K., Vasudevan, T., Athawale, A.A. and Manchanda, V.K. (2009), Adsorptive preconcentration of uranium in hydrogels from seawater and aqueous solutions. *Industrial & Engineering Chemistry Research*, **48** (14), 6789-6796.

Full Text: [2009\Ind Eng Che Res48, 6789.pdf](2009/Ind%20Eng%20Che%20Res48,%206789.pdf)

Abstract: Cross-linked hydrogels containing poly(ethylene glycol methacrylate phosphate) (EGMP), poly(2-acrylamido-2-methyl-1-propane sulfonate) (AMPS), poly(acrylamidoxime) (AO), and AO along with different acidic (acrylic acid (AA), methacrylic acid (MAA), AMPS, and EGMP) and basic (3-(acrylamido propyl) trimethylammonium chloride (APTAC)) comonomers were prepared by UV-initiated bulk polymerization. These hydrogels were characterized in terms of their chemical structure and U(VI)-uptake behavior from aqueous and seawater samples. Except AMPS hydrogel, all these hydrogels were found to sorb U(VI) quantitatively (approximate to 90%) from the seawater. The U(VI)-sorption kinetics in EGMP and AO+MAA (60:40) hydrogels were found to be faster than other hydrogels under seawater conditions. The presence of a strong acid (-SO3H) comonomer with AO retards the overall kinetics involve in the U(VI) sorption from seawater. It was also observed that the U(VI) sorption kinetics was high]), dependent on the composition of the acidic and AO groups in the hydrogel. The uptake of U(VI) from acidic solution in AO+MAA hydrogel was found to be dependent on the acidity of the feed solution, and there was no uptake of U(VI) in this hydrogel from solution containing 1 mol L-1 HNO3. Contrary to this, EGMP hydrogel could sorb the U(VI) from solution containing high concentration of HNO3. This indicated that EGMP hydrogel call also be used for U(VI) preconcentration from the nuclear waste. U(VI) complexed in EGMP hydrogel and AO+MAA could be desorbed by their equilibration with 0.5 mol L-1 Na2CO3 and 1 mol L-1 HCl/HNO3, respectively. The mechanism of sorption of U(VI) in the hydrogels was Studied to understand the factors that control the U(VI) sorption from seawater.

Keywords: Acidity, Amidoxime Adsorbents, Behavior, Binding, Chelating Functional-Group, Chemical, Chloride, Composition, Concentration, Control, Cross-Linked, Equilibration, Extraction, Feed, Group-Containing Adsorbent, Hydrogel, Hydrogels, Kinetics, L1, Mechanism, Membranes, Phosphate, Polymeric Adsorbent, Polymerization, Preconcentration, Recovery, Seawater, Solution, Sorption, Sorption Kinetics, Structure, Systems, U(VI), Uptake, Uranium, Uranyl-Ion, Waste

? Uslu, H., İnci, İ., Bayazit, Ş.S. and Demir, G. (2009), Comparison of solid-liquid equilibrium data for the adsorption of propionic acid and tartaric acid from aqueous solution onto amberlite IRA-67. *Industrial & Engineering Chemistry Research*, **48** (16), 7767-7772.

Full Text: [2009\Ind Eng Che Res48, 7767.pdf](2009/Ind%20Eng%20Che%20Res48,%207767.pdf)

Abstract: Investigation of adsorption parameters such as effect of initial acid concentration, effect of amount of adsorbent, effect of temperature, effect of contact time, fitting data to isotherms, and kinetic models for propionic acid and tartaric acid by using Amberlite IRA-67 adsorbent was studied. The maximum adsorption efficiencies were found to be 97.18% and 84.46% for tartaric acid and propionic acid, respectively. The best fitted isotherm was determined to be Langmuir for tartaric acid. The Langmuir isotherm was better fitted than the Frundlich isotherm for both acids. Elovich model equation was applied for data of each acids. The kinetics of the adsorption for both acids was determined as pseudo-second-order model.

Keywords: Adsorbent, Adsorption, Concentration, Data, Elovich, Elovich Model, Equilibrium, Extraction, Isotherm, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherm, Levulinic Acid, Model, Models, Plus Organic-Solvents, Propionic Acid, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Recovery, Removal, Sorption, Tartaric Acid, Temperature, Waste-Water

? Kumar, K.V. (2009), Regression analysis for the two-step growth kinetics of crystals in pure solutions. *Industrial & Engineering Chemistry Research*, **48** (16), 7852-7859.

Full Text: [2009\Ind Eng Che Res48, 7852.pdf](2009/Ind%20Eng%20Che%20Res48,%207852.pdf)

Abstract: The overall growth kinetics of ammonium pentaborate, borax decahydrate, and boric acid crystals in pure solution, were analyzed using a two-step mass transfer model. Four different linear expressions of the two-step mass transfer model (TSM), which include the widely used expressions of Sobczak and Karpinski, were discussed. The influence of linearization for an assumed second-order reaction kinetics on the mass transfer and reaction steps was studied for various crystallization systems with overall growth kinetic order ranging from 1 to >= 2. The overall growth kinetics of ammonium pentaborate and borax decahydrate were used to study the effect of linearization as a function of temperature and seed size. The complexities in using the linearized TSM expression to predict the mechanism of the crystal growth process in pure solutions were discussed. A Type 3 expression of Karpinski that successfully represents the overall crystal growth kinetics was determined to be successful in representing two-step growth of borax decahydrate and ammonium pentaborate crystals. Type 1 and Type 4 expressions were determined to be inappropriate for the studied crystallization systems, because they either poorly fit the growth kinetics or produce kinetic parameters without physical meaning. The Sobczak expression well-represents the overall crystal growth kinetics of second order or more, and the Karpinski expression was determined to be successful in representing the overall crystal growth kinetics of order near or equal to unity.

Keywords: Crystal Growth, Crystallization, Crystallization Kinetics, Dissolution, Kinetic, Kinetics, Mass Transfer, Mechanism, Model, Second Order, Temperature

? Mandal, S., Mayadevi, S. and Kulkarni, B.D. (2009), Adsorption of aqueous selenite [Se(IV)] species on synthetic layered double hydroxide materials. *Industrial & Engineering Chemistry Research*, **48** (17), 7893-7898.

Full Text: [2009\Ind Eng Che Res48, 7893.pdf](2009/Ind%20Eng%20Che%20Res48,%207893.pdf)

Abstract: Layered double hydroxide materials (Zn/Al, Mg/Al, Zn/Fe) with varying composition (M2+:M3+ molar ratio, x = 3, 2, 1, and 0.33) were synthesized and evaluated for their selenium adsorption characteristics in aqueous medium. Zn/Al and Mg/Al LDHs with x = 3 and 2, exhibited very high selenite adsorption capacity. XRD patterns of the pristine LDHs, LDH after selenite adsorption, and chloride ion leaching studies revealed that adsorption of selenium on the LDHs occurred through both surface adsorption and ion-exchange mechanism. The adsorption data was fitted to Langmuir and Freundlich isotherm models. A pseudo second-order kinetic model was used to describe the adsorption kinetics of selenite on LDH materials. Desorption of selenite ions in water from the LDH-Se matrix was Studied up to 5 h.

Keywords: Adsorption, Adsorption Capacity, Adsorption Kinetics, Al, Aqueous Medium, Capacity, Characteristics, Chloride, Coated Sand, Composition, Data, Desorption, Double Hydroxide, Fluoride, Freundlich, Freundlich Isotherm, Goethite, Hydroxide, Ion Exchange, Ion-Exchange, Ionexchange, Ions, Isotherm, Kinetic, Kinetic Model, Kinetics, Langmuir, Leaching, Matrix, Mechanism, Model, Models, Oxide, Oxyanions, Pristine, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Removal, Second Order, Second-Order, Selenate, Selenite, Selenium, Sorption, Surface, Water, XRD

? Liang, C.J., Lin, Y.T. and Shih, W.H. (2009), Treatment of trichloroethylene by adsorption and persulfate oxidation in batch studies. *Industrial & Engineering Chemistry Research*, **48** (18), 8373-8380.

Full Text: [2009\Ind Eng Che Res48, 8373.pdf](2009/Ind%20Eng%20Che%20Res48,%208373.pdf)

Abstract: For remediation of trichloroethylene (TCE) contaminated groundwater, activated carbon (AC) has been used to adsorb and reduce the TCE concentration and to manage contaminant migration. Additionally, AC may also act as all activator of the electron-transfer mediator in activating persulfate anion (S2O82-) to generate sulfate radical (SO4-center dot) for contaminant destruction. The objective of the present research was to examine the combined use of AC and persulfate to treat TCE. The degradation of persulfate in the presence of AC follows a first-order kinetic behavior, and the faster persulfate degradation is observed when elevated AC dosage is used. Higher initial persulfate concentration results in a decrease of the persulfate degradation rate. Upon persulfate oxidation, the AC surface properties are altered including: all increase in acidity of surface concentration, a decrease in pHzpc, and a slight decrease in the surface area. The results Of a Study of adsorption kinetics and isotherms suggest that the adsorption behavior for the original AC fits the pseudo-second-order kinetic model while the pseudo-first-order kinetic model is suitable for predicting oxidized AC performance. During the persulfate oxidation of TCE with AC as an activator, studies show that TCE removal call be a net result of adsorption and oxidation, in which a partial mineralization of TCE to release chloride occurs.

Keywords: 4-Chlorophenol, Acidity, Activated Carbon, Activated-Carbon, Activator, Adsorption, Adsorption Behavior, Adsorption Kinetics, Adsorption Kinetics and Isotherms, Aqueous-Solution, Behavior, Carbon, Catalyst, Chloride, Concentration, Contaminant, Contaminated Groundwater, Decomposition, Degradation, First Order, Groundwater, Hydrogen-Peroxide, Isotherms, Kinetic, Kinetic Model, Kinetics, Mechanism, Migration, Mineralization, Model, Oxidation, Performance, Persulfate, pHzpc, Phenol, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Release, Remediation, Removal, Research, Sulfate, Surface, Surface Area, Surface Properties, Surface-Chemistry, TCE, Treatment, Trichloroethylene, Waste-Water

? Kołodyńska, D., Hubicki, Z. and Skiba, A. (2009), Heavy metal ions removal in the presence of 1-hydroxyethane-1,1-diphosphonic acid from aqueous solutions on polystyrene anion exchangers. *Industrial & Engineering Chemistry Research*, **48** (23), 10584-10593.

Full Text: [2009\Ind Eng Che Res48, 10584.pdf](2009/Ind%20Eng%20Che%20Res48,%2010584.pdf)

Abstract: In the presented paper, the ability of commercially available gel and macroporous polystyrene anion exchangers for the removal of copper(II), zinc(II), nickel(II), and cadmium(II) complexes with 1-hydroxyethane-1,1-diphosphonic acid (HEDP) from aqueous Solutions was investigated under various experimental conditions. In the experiments, the strongly basic anion exchangers Lewatit MonoPlus M 600, Lewatit MonoPlus MP 500, and Amberlite IRA 402 with the quaternary ammonium functional groups as well as the medium basic anion exchanger Lewatit MonoPlus MP 64 with the quaternary ammonium/tertiary amine functional groups were used. Special attention was paid to the concentration of heavy metal ions, M(II)-HEDP molar ratio, pH of solutions, temperature, and the physicochemical properties of the anion exchangers used. The effect of the interfered ions such as Ca(II), Mg(II), Cl-, NO3-, and SO42- on the efficiency of heavy metal complexes with HEDP sorption was also investigated. It was found that polystyrene anion exchangers rapidly sorbed the test metal complexes with HEDP, and the process became saturated in 20 min. The sorption kinetic data showed pseudo-second-order reaction kinetics rather than the pseudo-first-order kinetics. The adsorption behavior of Cu(II), Zn(II), Ni(II), and Cd(II) complexes with HEDP was studied in single as well as in multicomponent competitive systems. The obtained data were fitted well by the Langmuir adsorption isotherm model. Maximum sorption capacities for Cu(II), Zn(II), Ni(II), and Cd(II) complexes with HEDP Occurred for strongly basic anion exchanger Lewatit MonoPlus M 600 at the optimal pH 11.5 and were found to be 96.15, 80.64, 70.42, and 142.85 mg/g, respectively. For binary and quaternary metal complexes solutions, these values were smaller than those from single metal Solutions. The presence of Cu(II) and Zn(II) complexes more strongly inhibited Ni(II) and Cd(II) once sorption occured which indicates their greater affinity than that of the remaining complexes for the anion exchangers.

Keywords: Adsorption, Adsorption Behavior, Adsorption Isotherm, Adsorption Isotherm Model, Ammonium, Anion Exchangers, Aquatic Model Systems, Behavior, Cadmium(II), Cd(II), Chelating-Agents HEDP, Chemistry, Competitive, Complexes, Concentration, Copper(II), Cu(II), Data, Degradation, Efficiency, Experimental, Experiments, Functional Groups, Gel, Heavy Metal, Heavy Metal Ions, Ions, Isotherm, Isotherm Model, Kinetic, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Macroporous, Metal, Metal Complexes, Metal Ions, Mineral Phases, Model, Ni(II), Nickel(II), pH, Phosphonates, Polystyrene, Pseudo First Order, Pseudo First Order Kinetics, Pseudo Second Order, Pseudo-First-Order, Pseudo-First-Order Kinetics, Pseudo-Second-Order, Reaction Kinetics, Removal, Solutions, Sorption, Systems, Temperature, Waste-Water Treatment, Zinc(II), Zn(II)

? Oubagaranadin, J.U.K. and Murthy, Z.V.P. (2009), Adsorption of divalent lead on a montmorillonite-illite type of clay. *Industrial & Engineering Chemistry Research*, **48** (23), 10627-10636.

Full Text: [2009\Ind Eng Che Res48, 10627.pdf](2009/Ind%20Eng%20Che%20Res48,%2010627.pdf)

Abstract: Lead(II) was removed from aqueous solution by adsorption on a montmorillonite-illite type of clay (MIC) collected from the Gulbarga district of Karnataka, India. The objectives of the current work were (i) to characterize the clay (adsorbent) and (ii) to perform equilibrium, kinetic, mass-transfer, and thermodynamic studies for the adsorption of Pb(II) on the clay. Batch adsorption equilibrium data were determined with different initial Pb(II) concentrations (100, 150, and 200 ppm) at pH 4 and 37ºC, and the data were tested with isotherm models. The three-parameter Freundlich-Langmuir model gave the best fit to the equilibrium data (R2 = 0.9979). However, as the initial Pb(II) concentration was increased (150 and 200 ppm), multilayer adsorption was observed. The maximum monolayer adsorption capacity of the clay was determined to be similar to 52 mg/g. Kinetic studies indicated that the rate of adsorption of Pb(II) on the clay followed a second-order rate mechanism, with decreasing rate constant values of 0.1097, 0.0571, and 0.0022 g/(mg min) as the initial Pb(II) concentration was increased in the order of 100, 150, and 200 ppm, respectively. The value of the Freundlich constant (n) in the range of 2.5-4.6 indicated that MIC was a good adsorbent of divalent lead. At a higher initial Pb(II) concentration (200 ppm), the adsorption process was determined to be film-diffusion-controlled, with a rate of 0.051 min-1. The mean values of the thermodynamic parameters-the change in the free energy (Δ*H*º), the change in the entropy (Δ*S*º), and the change in the Gibbs free energy (Δ*G*º) showed that the adsorption process was endothermic, thermodynamically favorable, and spontaneous. A two-stage adsorber system that has been proposed reduced the clay dose by 8.5%, compared to that of a single-stage adsorption system.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Aqueous Solution, Aqueous-Solutions, Batch Adsorption, Bentonite, Capacity, China-Clay, Clay, Concentration, Data, Endothermic, Energy, Entropy, Equilibrium, Fly-Ash, Freundlich, Freundlich Constant, Gibbs Free Energy, India, Intraparticle Diffusion, Ions, Isotherm, Isotherm Models, Kinetic, Kinetic Studies, Lead, Lead(II), Mass Transfer, Mechanism, Model, Models, Monolayer, Multilayer, Pb(II), Peat, pH, Rate Constant, Removal, Second Order, Second-Order, Solution, Sorption, Spontaneous, Thermodynamic, Thermodynamic Studies, Value, Work

? Guo, L., Li, G.Y., Liu, J.S., Yin, P. and Li, Q. (2009), Adsorption of aniline on cross-linked starch sulfate from aqueous solution. *Industrial & Engineering Chemistry Research*, **48** (23), 10657-10663.

Full Text: [2009\Ind Eng Che Res48, 10657.pdf](2009/Ind%20Eng%20Che%20Res48,%2010657.pdf)

Abstract: A new environment friendly adsorbent, cross-linked starch sulfate (CSS), was prepared and used to adsorb aniline from aqueous solution. Different adsorption parameters like initial pH, adsorption time, equilibrium aniline concentration, and temperature were thoroughly studied, and the kinetic, equilibrium, and thermodynamics of the adsorption process were further investigated. It showed that CSS can effectively remove aniline from the solution. The adsorption capacity is highly dependent on the amount of sulfate groups on adsorbents and the initial pH. The pseudo-first-order and pseudo-second-order kinetic models were applied to test the experimental data, and the pseudo-second-order kinetic model provided a better correlation of the experimental data in comparison with the pseudo-first-order model. The maximum removal efficiency of aniline is 75.29% using I g L-1 of CSS3 dose, Langmuir, Freundlich, Dubinin-Radushkevich, and Sips models have been applied to Study the adsorption equilibrium, and the equilibrium adsorption data were well described by the Sips isotherms. The Scatchard plot analysis was used to evaluate the binding sites of CSS. The adsorption of aniline on CSS is exothermic in nature.

Keywords: Activated Carbons, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Amphoteric Starch, Analysis, Aniline, Aqueous Solution, Aromatic-Compounds, Bifunctional Polymeric Adsorbent, Binding, Binding Sites, Biodegradation, Capacity, Comparison, Concentration, Correlation, Cross-Linked, Data, Efficiency, Environment, Equilibrium, Exothermic, Experimental, Freundlich, Isotherms, Kinetic, Kinetic Model, Kinetic Models, L1, Langmuir, Model, Models, Petrochemical Waste-Water, pH, Phenol, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Removal Efficiency, Solution, Starch, Sulfate, Sulfonic Groups, Temperature, Thermodynamics

? Kumar, K.V. (2009), Simple kinetic expressions to study the transport process during the growth of crystals in solution. *Industrial & Engineering Chemistry Research*, **48** (24), 11236-11240.

Full Text: [2009\Ind Eng Che Res48, 11236.pdf](2009/Ind%20Eng%20Che%20Res48,%2011236.pdf)

Abstract: First- and second-order kinetic expressions tire proposed to explain the growth of crystals in solutions limited by diffusion and integration kinetics, respectively. The experimental growth kinetic data of sucrose crystals at 30 and 40°C were fitted to the kinetic expressions by a linear regression method. A linear second-order expression proposed based on the Burton-Cabrera-Frank (BCF) model was found to be useful in identifying the transition in kinetics from the diffusion to the kinetic regime during the crystal growth process. A parameter, At-critical (product of crystal area and time) was defined according to a second-order kinetic expression. The growth process was found to be limited by diffusion and surface reaction kinetics for At < At-critical and At > At-critical, respectively. An initial reaction rate was defined according to a second-order surface reaction kinetics. The mass-transfer coefficient during the growth of crystals increases with increasing temperature, whereas the reaction kinetic constant was found to decrease with increasing temperature. The total adsorption energy for the growth of sucrose crystals in the diffusion and kinetic regime during was found to be >95 kJ/mol according to the derived expressions.

Keywords: Adsorption, Crystal Growth, Diffusion, Fluidized-Bed Crystallizer, Integration, Kinetic, Kinetics, Linear Regression, Mass Transfer, Second Order, Sucrose Crystallization Kinetics, Temperature

? Kołodyńska, D. (2010), Cu(II), Zn(II), Ni(II), and Cd(II) Complexes with HEDP removal from industrial effluents on different ion exchangers. *Industrial & Engineering Chemistry Research*, **49** (5), 2388-2400.

Full Text: [2010\Ind Eng Che Res49, 2388.pdf](2010/Ind%20Eng%20Che%20Res49,%202388.pdf)

Abstract: The aim of this research is to investigate sorption characteristic of polyacrylate anion exchangers and chelating ion exchangers for the removal of Cu(II), Zn(II), Ni(II), and Cd(II) complexes with HEDP (1-hydroxyethylene-1,1-diphosphonic acid) from aqueous solutions. Optimum sorption conditions were determined as a function of phase contact time (1-180 min), pH (5-13), ion exchanger dosage (0.1-1.0 g), temperature (293-333 K), and chloride ions concentration (0.01-0.5 mol/L of NaCl). The Langmuir, Freundlich, Temkin, and Dubinin-Radushkevich (D-R) models were applied to describe the adsorption isotherm of Cu(II), Zn(II), Ni(II), and Cd(II) complexes with HEDP on Amberlite IRA 458 and Amberlite IRA 958 as well as Purolite S-920 and Purolite S-930. In the case of M(II)-HEDP complexes the adsorption capacities of Amberlite 458 were found to be 1.96 meq/g for Cu(II), 3.94 meq/g for Zn(II), 2.98 meq/g for Ni(II), and 4.25 meq/g for Cd(II). The metal ions were desorbed using 1 M HCl. The ion exchange capacity of ion exchangers applied decreased 8% in the recovery of Cu(II)-HEDP after 10 times of the sorption-desorption processess. Experimental data were also tested in terms of sorption kinetics using the pseudo-first-order and pseudo-second-order kinetic models. The results showed that the sorption processes of Cu(II), Zn(II), Ni(II), and Cd(II) complexes with HEDP on Amberlite IRA 458 and Amberlite IRA 958 as well as Purolite S-920 and Purolite S-930 followed well the pseudo-second-order kinetics.

Keywords: Adsorption, Adsorption Capacities, Adsorption Isotherm, Aqueous Solutions, Aqueous-Solution, Capacity, Cd(II), Chloride, Concentration, Cu(II), Data, Freundlich, Function, Ion Exchange, Ion Exchange Capacity, Ion Exchangers, Ion-Exchange, Ions, Isotherm, Isotherm Models, Kinetic, Kinetic Models, Kinetics, Langmuir, Mar, Metal, Metal Ions, Models, NaCl, Ni(II), pH, Phosphate, Phosphonates, Pseudo First Order, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Recovery, Removal, Research, Resins, Solutions, Sorption, Sorption Kinetics, Sorption-Desorption, Temperature, Time, Waste-Water, Zinc Ions, Zn(II)

? Chauhan, K., Chauhan, G.S. and Ahn, J.H. (2010), Novel polycarboxylated starch-based sorbents for Cu2+ Ions. *Industrial & Engineering Chemistry Research*, **49** (6), 2548-2556.

Full Text: [2010\Ind Eng Che Res49, 2548.pdf](2010/Ind%20Eng%20Che%20Res49,%202548.pdf)

Abstract: In this article we report use of novel starch-based functional hydrogels as Cu2+ ions sorbents. Starch was functionalized by acid hydrolysis and/or oxidized by nitrogen oxides to generate carboxylic groups at C-6. Sorption of Cu2+ ions was studied as a function of hydrogel structure and environmental factors, Hydrogels exhibit structure-property relationship in the sorption of Cu2+ ions. The hydrogel that exhibited the maximum ion uptake was used to investigate the effect of contact time, temperature, pH, and Cu2+ ions concentration on the sorption capacity. The maximum sorption capacity of 128.26 mg g-1 was obtained in 2 h at 40ºC, 7.0 pH, and 50 ppm of Cu2+ ions. Sorption data show good match both with Langmuir and Freundlich isotherms and obey pseudo-second-order kinetics. Cu2+ ions bind to sorbents by chelation. Evidence of Cu2+ uptake on hydrogels was obtained from FTIR spectrum of the ions-loaded hydrogel.

Keywords: Acid-Hydrolysis, Acrylamide-Based Hydrogels, Aqueous-Solutions, Capacity, Carboxylic, Carboxymethylated Starch, Chelation, Concentration, Corn Starches, Cu2+, Data, Environmental, Freundlich, Ftir, Function, Hydrogel, Hydrogels, Hydrolysis, Ions, Isotherms, Kinetics, Langmuir, Langmuir and Freundlich Isotherms, Linked Amphoteric Starch, Mar, Mediated Oxidation, Metal-Ions, Nitrogen, Oxides, pH, Physicochemical Properties, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Sorbents, Sorption, Sorption Capacity, Structural Characteristics, Structure, Temperature, Time, Uptake

? Ofomaja, A.E., Naidoo, E.B. and Modise, S.J. (2010), Kinetic and pseudo-second-order modeling of lead biosorption onto pine cone powder. *Industrial & Engineering Chemistry Research*, **49** (6), 2562-2572.

Full Text: [2010\Ind Eng Che Res49, 2562.pdf](2010/Ind%20Eng%20Che%20Res49,%202562.pdf)

Abstract: The sorption of lead(II) onto pine cone powder (PCP) and 0.15 mol/L NaOH treated pine cone powder (PCP 0.15), an abundant agricultural waste from the wood industry, was studied to evaluate the effect of NaOH treatment on the kinetics of lead(II) uptake by performing batch kinetic sorption experiments. Batch biosorption kinetics was performed by varying biosorbent dose and initial lead(II) concentration and the kinetic data modeled using the pseudo-first, pseudo-second intraparticle, and Bangham diffusion models. The results revealed that NaOH treatment changed the pattern of the biosorption kinetics, the biosorption kinetic parameters, and influenced the rate-limiting step. The pseudo-second-order kinetic model gave a better fitting of the kinetic data for both PCP and PCP 0.15. The batch biosorption model, based on the pseudo-second-order mechanism, was applied to predict the rate constant of biosorption, the equilibrium capacity, the initial sorption rate, the effects of biosorbent dose, and initial lead(II) concentration. Equilibrium concentrations were evaluated with the equilibrium capacity obtained from the pseudo-second-order rate equation. In addition, pseudo-isotherms were obtained by changing initial lead(II) concentration using the equilibrium concentration and equilibrium capacity obtained based on the pseudo-second-order constants.

Keywords: Adsorptive Removal, Agricultural, Agricultural Waste, Aqueous-Solution, Batch, Biomass, Biosorbent, Biosorption, Biosorption Kinetic, Biosorption Kinetics, Capacity, Coconut Copra Meal, Concentration, Data, Diffusion, Equilibrium, Experiments, Ion Sorption, Kinetic, Kinetic Model, Kinetic Parameters, Kinetic Sorption, Kinetics, Lead, Lead(II), Low-Cost Adsorbent, Mar, Mechanism, Model, Modeling, Models, NaOH, NaOH Treatment, Palm Kernel Fiber, Pattern, Pseudo Second Order, Pseudo-Isotherms, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Pseudo-Second-Order Rate, Rate Constant, Rate Limiting Step, Rate-Limiting Step, Sorption, Treatment, Uptake, Waste, Waste-Water, Wood

? Cai, J.H. and Jia, C.Q. (2010), Mercury removal from aqueous solution using coke-derived sulfur-impregnated activated carbons. *Industrial & Engineering Chemistry Research*, **49** (6), 2716-2721.

Full Text: [2010\Ind Eng Che Res49, 2716.pdf](2010/Ind%20Eng%20Che%20Res49,%202716.pdf)

Abstract: Sulfur-impregnated activated carbons (SIACs) produced from oil-sands fluid coke by KOH-SO2 activation were applied to remove mercury ions from aqueous solutions. A pseudo-first-order rate expression can describe the Hg2+ adsorption behavior of SIACs produced in this study. The rate constants were found to be 0.01-0.102 min(-1). The Hg2+ adsorption capacities of the examined SIACs ranged from 43 to 72 mg/g, which were comparable to those reported in the literature (35-100 mg/g) and that of a commercial SIAC (41 mg/g). The adsorption capacity increased with increasing Specific Surface area (S-BET) of the SIACs, and a positive correlation was found between the S-BET-normalized adsorption capacity and the total sulfur content of the SIACs. Elemental sulfur, disulfide, and thiophene seemed particularly effective in Hg2+ adsorption, as SIACs with these sulfur compounds showed higher adsorption capacities in general.

Keywords: Waste-Water, Adsorption, Chloride, Kinetics, Cadmium, Surface, Ions

? Rodríguez, A., Ovejero, G., Mestanza, M. and García, J. (2010), Removal of dyes from wastewaters by adsorption on sepiolite and pansil. *Industrial & Engineering Chemistry Research*, **49** (7), 3207-3216.

Full Text: [2010\Ind Eng Che Res49, 3207.pdf](2010/Ind%20Eng%20Che%20Res49,%203207.pdf)

Abstract: In this work, experiments to examine the liquid-phase adsorption features of sepiolite and pansil have been conducted with synthetic dye wastewaters prepared from commercial grade dye, methylene blue (MB). The adsorption experimental results were analyzed in terms of the equilibrium adsorption capacity and equilibrium time. The Langmuir, Freundlich, and Sips adsorption models are applied to describe the isotherm equilibrium and to determine some parameters. The Sips model agrees well with the experimental data, and the pseudo-second-order kinetic model reproduces properly the kinetic experimental data of the system MB sepiolite. The highest MB adsorption was obtained at acid pH for sepiolite and at basic pH for pansil. Besides, several kinetics models were employed to study the adsorption mechanism of MB on sepiolite.

Keywords: Acid, Activated Carbon, Adsorption, Adsorption Capacity, Adsorption Mechanism, Aqueous-Solutions, Basic Dye, Capacity, Data, Dye, Dyes, Equilibrium, Experimental, Experiments, Fly-Ash, Freundlich, Isotherm, Kinetic, Kinetic Model, Kinetics, Kinetics Models, Langmuir, Liquid-Phase Adsorption, Mb, Mechanism, Methylene Blue, Methylene-Blue, Model, Models, Ph, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Reactive Dye, Removal, Sepiolite, Time, Wastewaters, Work

? Quek, A., Zhao, X.S. and Balasubramanian, R. (2010), Mechanistic insights into copper removal by pyrolytic tire char through equilibrium studies. *Industrial & Engineering Chemistry Research*, **49** (10), 4528-4534.

Full Text: [2010\Ind Eng Che Res49, 4528.pdf](2010/Ind%20Eng%20Che%20Res49,%204528.pdf)

Abstract: This study showed that copper(II) can be removed from aqueous solution by activated pyrolytic tire char in three mechanistically distinct ways. On the basis of equilibrium studies, the mechanisms involved in the adsorptive removal of copper(II), namely, precipitation, surface adsorption, and pore diffusion, were elucidated. Precipitation of copper(II) resulted from changes in the solution pH to neutral levels. This was attributed to amphoteric zinc oxide on the char surface, formed during production of the pyrolytic char. Surface adsorption was revealed by X-ray photoelectron spectroscopy data, which showed a significant increase in copper(II) on the char surface after shaking in the copper solution. This surface adsorption took place despite the relatively low surface area and porosity of the char. However, some cracks and fissures were found to exist in the char that can trap small species such as copper ions. These trapped copper species were partially recovered by microwave-assisted acid digestion of the char.

Keywords: Activated Carbon; Aqueous-Solution; Waste Tires; Automobile Tires; Heavy-Metals; Scrap Tires; Bed Reactor; Adsorption; Water; Adsorbents

? Maiti, A., Basu, J.K. and De, S. (2010), Development of a treated laterite for arsenic adsorption: Effects of treatment parameters. *Industrial & Engineering Chemistry Research*, **49** (10), 4873-4886.

Full Text: [2010\Ind Eng Che Res49, 4873.pdf](2010/Ind%20Eng%20Che%20Res49,%204873.pdf)

Abstract: A porous and efficient arsenic adsorbent (specific surface area, 181±4 m2/g; pore volume, 0.35±0.01 mL/g) is prepared from raw laterite by acid followed by alkali treatment. FTIR, XRD, SEM-EDAX, HRTEM, and a surface area analyzer are used for detailed characterization of treated materials. Adsorption of arsenic on treated laterite (TL) using arsenic spiked distilled water and contaminated groundwater (CGW) is studied in the batch and fixed-bed column modes. The Langmuir isotherm fits better to the experimental data compared to the Freundlich isotherm. The Langmuir maximum capacities of As(V) and As(III) on the best-performing treated material are found to be 24.8±3.9 and 8.0±1.4 mg/g, respectively. Arsenic adsorption on TL follows pseudo-second-order kinetics. The Langmuir maximum adsorptions of arsenic on raw laterite and TL using CGW as the total arsenic are found lobe 0.11±0.01 and 7.5±0.4 mg/g, respectively. In the fixed-bed column run, the 6.5 cm TL bed is capable to produce similar to 3000 times the bed volume of treated water with an effluent arsenic concentration <10 mu g/L using CGW as an influent. The arsenic adsorption capacity of TL is found to be 30 to 40 times higher compared to that of raw laterite.

Keywords: Acid, Activated Alumina, Adsorbent, Adsorption, Adsorption Capacity, Aqueous-Solution, Arsenic, Arsenic Adsorption, As(III), As(V), Batch, Capacity, Characterization, Column, Column Modes, Concentration, Contaminated Groundwater, Data, Experimental, Fixed Bed, Freundlich, Freundlich Isotherm, FTIR, Groundwater, Hrtem, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Laterite, Oxide, Pore Volume, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Real-Life Groundwater, Red Mud, Removal, Specific Surface, Specific Surface Area, Surface, Surface Area, Treatment, Volume, Water, XRD, Zero-Valent Iron

? Yesil-Celiktas, O. and Senyay, D. (2010), The breadth and intensity of supercritical particle formation research with an emphasis on publication and patent disclosures. *Industrial & Engineering Chemistry Research*, **49** (15), 7017-7026.

Full Text: [2010\Ind Eng Che Res49, 7017.pdf](2010/Ind%20Eng%20Che%20Res49,%207017.pdf)

Abstract: The drawbacks of the conventional mechanical treatments for particle micronization often resulting in product damage or performance degradation have highlighted the need for alternative particle formation processes. The aim of this study was to shed light on the trends of the scientific studies and innovations in the field of particle formation using supercritical fluids (SCF) in order to observe the progress of science and technology and to satisfy the need for a global view of research activities. The publications in the ISI Web and the patents in a patent database were screened using nine different keywords in title or topics. A total of 939 journal publication and 206 patent disclosures between 1980-2009, with the contributions of 3588 authors and 604 innovators, were found to focus on particle formation using SCF. The results showed that the majority of the publication (59.2%) and patent (40.3%) disclosures were related to antisolvent precipitation and rapid expansion of SCF (18.3, 16%). Patents originating from United States (56.8%) were dominating, followed by those from the European Union (30.1%) and Japan (9.2%). The analysis revealed the appetite of the companies for commercialization (73.8%), which can be interpreted as an indicator of upcoming industrial applications.

Keywords: Anti-Solvent Process, Bibliometric Analysis, Carbon-Dioxide, CO2, Fluid Technology, ISI, Micronization, Pharmaceutical Applications, Publication, Publications, Rapid Expansion, Research, Ress Process, Submicron Particles, Web

? Biswal, N.R. and Paria, S. (2010), Effect of electrolyte solutions on the adsorption of surfactants at PTFE-water interface. *Industrial & Engineering Chemistry Research*, **49** (15), 7060-7067.

Full Text: [2010\Ind Eng Che Res49, 7060.pdf](2010/Ind%20Eng%20Che%20Res49,%207060.pdf)

Abstract: Adsorption of ionic and nonionic surfactants on low surface energy hydrophobic PTFE water interfaces in the absence and presence of electrolytes have been studied here. The objective of this study is to see the surfactant adsorption behavior in the presence of electrolytes that may reduce the consumption of surfactants. The kinetics of adsorption fits well pseudo-second-order kinetic model for the three surfactants studied here. Adsorption isotherms of TX-100 follow Langmuir type, whereas sodium dodecylbenzene sulfonate (SDBS) and cetylpyridinium bromide (CPB) follow Freundlich type. However, in the presence of electrolytes both the ionic surfactants show better fitting with Langmuir type isotherm. The effect of electrolytes on the surfactant concentration far below the CMC shows there is a linear increase in amount adsorbed with the increase in ionic strength of the electrolyte mainly due to reduction in headgroup repulsion and finally reaches a plateau level when the equilibrium concentration reaches CMC at that electrolyte concentration.

Keywords: Adsorption, Adsorption Behavior, Adsorption Isotherms, Aqueous Solution Interface, Behavior, Bromide, Cationic Surfactants, Cetyltrimethylammonium Bromide, Chain-Length, CMC, Concentration, Consumption, Energy, Equilibrium, Freundlich, Interfaces, Ionic Strength, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Kinetics Of Adsorption, Langmuir, Mixtures, Model, Nonionic Surfactant, Polystyrene Particles, Polytetrafluoroethylene, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Reduction, Sodium, Strength, Surface, Surface Energy, Surfactant, Surfactants, Triton X-100, Water, Wettability

? Sreelatha, G., Kushwaha, S., Rao, V.J. and Padmaja, P. (2010), Kinetics and equilibrium studies of adsorption of anionic dyes using acid-treated palm shell. *Industrial & Engineering Chemistry Research*, **49** (17), 8106-8113.

Full Text: [2010\Ind Eng Che Res49, 8106.pdf](2010/Ind%20Eng%20Che%20Res49,%208106.pdf)

Abstract: This study investigates the potential uses of palm shell, pretreated with sulfuric acid (APSP) for the adsorption of AOII, DSB, and AV7. The effects of different system variables like adsorbent dosage, pH, contact time, and temperature were studied. Optimum pH values for all the three dyes were determined as 1.0. Equilibrium was achieved within 30 min. Langmuir I, II, III, IV and Freundlich isotherm models were applied to describe the equilibrium isotherms at different temperatures, and the langmuir model was found to agree very well with the experimental data. The maximum adsorption capacity was found to be 2180.05 mg/g, 1199.99 mg/g, and 243.9 mg/g for AOII, DSB, and AV7, respectively. Thermodynamic parameters such as change in free energy (ΔG(0)), enthalpy (ΔH-0), and entropy (ΔS-0) were also determined. Pseudo-first-order, pseudo-second-order, and intraparticle diffusion models were used to fit the experimental data. The pseudo-second-order equation was able to fit well and provide a realistic description of the adsorption kinetics.

Keywords: Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Adsorption Kinetics, Aqueous-Solution, Banana Pith, Biogas Residual Slurry, Blue, Capacity, Coir Pith, Color Removal, Congo Red, Data, Diffusion, Dyes, Energy, Enthalpy, Entropy, Equilibrium, Equilibrium Isotherms, Experimental, Fe(III), Cr(III), Freundlich, Freundlich Isotherm, Intraparticle Diffusion, Isotherm, Isotherm Models, Isotherms, IV, Kinetics, Langmuir, Low-Cost Adsorbents, Model, Models, pH, Potential, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Equation, Temperature, Thermodynamic, Thermodynamic Parameters, Waste-Water

? Hasan, S.H. and Ranjan, D. (2010), Agro-industrial waste: A low-cost option for the biosorptive remediation of selenium anions. *Industrial & Engineering Chemistry Research*, **49** (19), 8927-8934.

Full Text: [2010\Ind Eng Che Res49, 8927.pdf](2010/Ind%20Eng%20Che%20Res49,%208927.pdf)

Abstract: For remediation purposes, initially, the screening and selection of potent biosorbent, among, three agro-industrial wastes (i.e., wheat bran, maize bran, and rice bran) was done. Wheat bran was found to show maximum uptake in the case of both Se(IV) and Se(VI) ions. Effect of various parameters (pH, temperature, initial metal ion concentration, and biomass dose) was extensively investigated on the uptake of these metal ions by potent biosorbent using hatch mode. Langmuir, Freundlich, and Dubinin-Radushkevich (D-R) isotherm models were applied and all three isotherms fitted well to sorption data. The maximum sorption capacity of wheat bran was 89.28 mu g/g for Se(VI) and 80.65 mu g/g for Se(VI) at 20ºC and pH 2.0. Values of mean sorption energy indicated sorption to be chemisorption. Thermodynamic study revealed that sorption was feasible, spontaneous and exothermic. The sorption reaction was determined to be pseudo-second-order. Fourier transform infrared (FTIR) analysis of raw and metal-loaded biosorbent was done to determine changes on the surface of the sorbent after sorption.

Keywords: Adsorption, Analysis, Aqueous-Solution, Biomass, Biosorbent, Capacity, Changes, Chemisorption, Chromium, Concentration, Data, Energy, Equilibrium, Exothermic, Freundlich, FTIR, Ions, Isotherm, Isotherm Models, Isotherms, Langmuir, Maize, Maize Bran, Metal, Metal Ions, Mode, Models, pH, Pseudo Second Order, Pseudo-Second-Order, Remediation, Removal, Rice, Rice Bran, Rice Polish, Screening, Se(IV), Sorbent, Sorption, Sorption Capacity, Surface, Temperature, Thermodynamic, Thermodynamic Study, Tree Fern, Uptake, Water, Wheat Bran

? Kumar, N.S., Suguna, M., Subbaiah, M.V., Reddy, A.S., Kumar, N.P. and Krishnaiah, A. (2010), Adsorption of phenolic compounds from aqueous solutions onto chitosan-coated perlite beads as biosorbent. *Industrial & Engineering Chemistry Research*, **49** (19), 9238-9247.

Full Text: [2010\Ind Eng Che Res49, 9238.pdf](2010/Ind%20Eng%20Che%20Res49,%209238.pdf)

Abstract: Chitosan-coated perlite (CCP) beads were prepared by dropwise addition of a liquid slurry containing chitosan and perlite to an alkaline bath. The resulting beads were characterized using Fourier transform infrared (FTIR) spectroscopy, scanning electron microscopy (SEM), and surface area analysis. The chitosan content of the beads is 23% as determined by a pyrolysis method. Adsorption of phenolic compounds (phenol, 2-chlorophenol, and 4- chlorophenol) from aqueous solutions on chitosan-coated perlite beads was studied under batch equilibrium and column flow conditions. The binding capacity of the biosorbent was investigated as a function of initial pH, contact time, initial concentration of adsorbate, and dosage of adsorbent. Adsorption kinetic and isotherm studies, respectively, showed that the adsorption process followed a pseudo-first-order kinetic model and the Langmuir isotherm. The maximum monolayer adsorption capacity of phenol, 2-CP, and 4-CP on to the chitosan-coated perlite beads was found to be 192, 263, and 322 mg g-1, respectively.

Keywords: 2-Chlorophenol, Acid Dyes, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Kinetic, Analysis, Aqueous Solutions, Batch, Beads, Bed Reactor, Binding, Biosorbent, Capacity, CCP, Chitosan, Column, Concentration, Electron Microscopy, Equilibrium, Flow, Fly-Ash, FTIR, Function, Granular Activated Carbon, Isotherm, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Liquid, Low-Cost Adsorbents, Model, Monolayer, P-Chlorophenol, Perlite, pH, Phenol, Pseudo First Order, Pseudo-First-Order, Pyrolysis, Removal, Scanning Electron Microscopy, SEM, Solutions, Sorption, Spectroscopy, Surface, Surface Area

? Zhang, R.H., Ma, H.Z. and Wang, B. (2010), Removal of chromium(VI) from aqueous solutions using polyaniline doped with sulfuric acid. *Industrial & Engineering Chemistry Research*, **49** (20), 9998-10004.

Full Text: [2010\Ind Eng Che Res49, 9998.pdf](2010/Ind%20Eng%20Che%20Res49,%209998.pdf)

Abstract: A type of polyaniline was synthesized and its Cr(VI) removal potential was investigated in this work. The kinetics study, adsorption isotherm, pH effect, and thermodynamic study were examined in batch experiments. Adsorption data for Cr(VI) uptake by polyaniline were analyzed according to Langmuir and Freundlich adsorption models. Thermodynamic parameters for the adsorption system were determinated at 293 K, 303 K, and 313 K (ΔHº = 23.87 kJ mol-1; ΔGº = -10.76 to -13.13 kJ mol-1 and ΔSº = 118.20 J K-1 mol-1) The positive values of both ΔH degrees and ΔSº suggest an endothermic reaction, increasing in randomness at the solid liquid interface during the adsorption process. ΔG° values obtained were negative, indicated that the adsorption of the Cr(VI) ion on the surface of polyaniline was a spontaneous adsorption process. The kinetics process can be described by a pseudosecond-order rate equation very well. The Cr(VI) adsorption capacity tended to increase with a decrease of pH. The maximum uptake of Cr(VI) was 95.79 mg g-1. These results show that the polyaniline doped with sulfuric acid could be considered as a potential adsorbent for chromium hexavalent ions in aqueous solutions.

Keywords: Activated Carbons, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Isotherm, Aqueous Solutions, Batch, Batch Experiments, Capacity, Chromium, Chromium(VI), Cr(VI), Data, Endothermic, Experiments, Freundlich, Hexavalent Chromium, Interface, Ions, Isotherm, Kinetics, Langmuir, Liquid, Metal-Ions, Models, Part I, pH, pH Effect, Polyaniline, Potential, Randomness, Removal, Solutions, Sorption, Surface, Thermodynamic, Thermodynamic Parameters, Uptake, VI, Waste-Water, Work

? Anirudhan, T.S. and Suchithra, P.S. (2010), Synthesis and characterization of iron(III)-coordinated amine-modified poly(glycidylmethacrylate)-grafted densified cellulose and its applicability in defluoridation from industry effluents. *Industrial & Engineering Chemistry Research*, **49** (23), 12254-12262.

Full Text: [2010\Ind Eng Che Res49, 12254.pdf](2010/Ind%20Eng%20Che%20Res49,%2012254.pdf)

Abstract: In this study, the development and characterization of a novel adsorbent, iron(III)-coordinated amine-modified poly(glycidylmethacrylate)-grafted densified cellulose (AM-Fe-PGDC), for the removal and recovery of fluoride ions from aqueous solutions is reported. The adsorbent was characterized by FTIR, X-ray diffraction, SEM, TG/DTG, surface area analyzer, and potentiometric titration. The effect of process parameters such as agitation time, concentration, pH, ionic strength, adsorbent dose, and temperature on the extent of fluoride adsorption was investigated. The adsorbent exhibits very high adsorption potential (>99.9%) at an optimum equilibrium pH 7.0. The nonlinear form of a pseudo second-order kinetic model and Langmuir isotherm model adequately described the experimental kinetic and equilibrium data. The thermodynamic parameters showed that the adsorption of fluoride onto AM-Fe-PGDC was feasible, spontaneous, and exothermic. Adsorption experiments were also conducted using a commercial anion exchanger, Duolite-A7, for comparison. Utility of the adsorbent was tested with a simulated industry wastewater sample. Adsorbed fluoride ions were desorbed effectively by 0.1 M HCl.

Keywords: Activated Alumina, Adsorbent, Adsorbent Dose, Adsorption, Agitation, Aqueous Solutions, Aqueous-Solutions, Beads, Cellulose, Characterization, Comparison, Composite, Concentration, Data, Defluoridation, Development, Equilibrium, Exothermic, Experimental, Experiments, Fluoride, Fluoride Adsorption, Fluoride Removal, Ftir, Ionic Strength, Ions, Isotherm, Isotherm Model, Kinetic, Kinetic Model, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Mixed-Oxide, Model, pH, Potential, Potentiometric Titration, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Recovery, Removal, Second Order, Second-Order, SEM, Solutions, Strength, Surface, Surface Area, Synthesis, Temperature, Thermodynamic, Thermodynamic Parameters, Wastewater, Water, X-Ray, X-Ray Diffraction

? Parida, K.M., Sahu, S., Reddy, K.H. and Sahoo, P.C. (2011), A kinetic, thermodynamic, and mechanistic approach toward adsorption of Methylene blue over water-washed manganese nodule leached residues. *Industrial & Engineering Chemistry Research*, **50** (2), 843-848.

Full Text: [2011\Ind Eng Che Res50, 843.pdf](2011/Ind%20Eng%20Che%20Res50,%20843.pdf)

Abstract: The present study aims to investigate and develop a cheap adsorption method for color removal from wastewater using water-washed manganese nodule leached residues (WMNLR) as adsorbent. The method was employed for the removal of methylene blue (MB), and the influence of various factors such as adsorbent dose, adsorbate concentration, electrolytes (NaCl, Na2HPO4, Na2SO4, NaNO3, and Na2CO3), temperature, and pH was studied. The equilibrium of adsorption was modeled by using the Langmuir and Freundlich isotherm models; the kinetic parameters and intraparticle diffusion were also then determined for the MB-WMNLR system. Kinetic data were well described by the pseudo second-order model. The thermodynamics of the MB-WMNLR system indicates spontaneous and endothermic nature of the process. The results in this study indicated that WMNLR was an attractive candidate for removing MB (98%), which could be reused up to four times without significant loss in its adsorption capacity.

Keywords: Adsorbent, Adsorbent Dose, Adsorption, Adsorption Capacity, Aqueous-Solutions, Capacity, Carbon Slurry, Color Removal, Concentration, Data, De-Oiled Soya, Diffusion, Endothermic, Equilibrium, Freundlich, Freundlich Isotherm, Hazardous Dye, Intraparticle Diffusion, Intraparticle Mass-Transport, Isotherm, Kinetic, Kinetic Parameters, Langmuir, Low-Cost Adsorbents, Manganese, Materials-Bottom Ash, MB, Metanil-Yellow, Methylene Blue, Model, Models, NaCl, pH, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Removal, Second Order, Second-Order, Second-Order Model, Temperature, Thermodynamic, Thermodynamics, Waste-Water, Wastewater

? Anirudhan, T.S., Tharun, A.R. and Rejeena, S.R. (2011), Investigation on poly(methacrylic acid)-grafted cellulose/bentonite superabsorbent composite: synthesis, characterization, and adsorption characteristics of bovine serum albumin. *Industrial & Engineering Chemistry Research*, **50** (4), 1866-1874.

Full Text: [2011\Ind Eng Che Res50, 1866.pdf](2011/Ind%20Eng%20Che%20Res50,%201866.pdf)

Abstract: Investigation on adsorption behavior of bovine serum albumin. (BSA): on superabsorbent composite is critical for many analytical and biomedical applications In this study, a novel poly(methacrylic acid) grafted cellulose/bentonite (PMAA-g-Cell/Bent) superabsorbeut composite Was synthesized by graft copolymerization reaction of methacrylic acid on cellulose (Cell) in the presence of bentonite (Bent) using N,N’-methylenebisacrylamide as a cross; linker. The original Cell and Bent and composite were analyzed using FTIR, XRD, SEM, TG, and potentiometric titrations: The ability of the composite to adsorb BSA from aqueous solutions has been studied at different optimized conditions. The optimum pH range for the maximum uptake of BSA was 4.5. Maximum adsorption of the BSA, i.e, 99.7%, was achieved from an initial concentration of 100 mg/L using 1.0 g composite at pH 4.0. The equilibrium time of adsorbing BSA was about 3 h. Experimental kinetic data were tested with pseudo-first-order and pseudo-second-order kinetic equations. The experimental data fitted very well with the pseudo-second-order kinetic model, indicating the coexistence of chemisorptions and physisorption. It was also found that the film diffusion played an important role in the rate control of the adsorption process. The applicability of the Langmuir, Freundlich, and Sips isotherms was used to try to describe the experimental isotherm equilibrium data The BSA adsorption isotherm was best represented by the Sips model, which indicates a multilayer adsorption at lower concentration and monolayer at higher concentration. The equilibrium sorption capacity of 196.15 mg/g was determined from the Sips isotherm, The results of the six time consecutive adsorption-desorption cycles showed the feasibility of repeated use of this composite.

Keywords: Adsorption, Adsorption Isotherm, Aqueous-Solutions, Characterization, Composite, Kinetic Model, Langmuir, pH

? He, S., Zhao, Y.F., Wei, M. and Duan, X. (2011), Preparation of oriented layered double hydroxide film using electrophoretic deposition and its application in water treatment. *Industrial & Engineering Chemistry Research*, **50** (5), 2800-2806.

Full Text: [2011\Ind Eng Che Res50, 2800.pdf](2011/Ind%20Eng%20Che%20Res50,%202800.pdf)

Abstract: Oriented Mg/Al-NO3-layered double hydroxide (LDH) films have been fabricated by the electrophoretic deposition method (EPD) on aluminum substrate, which can be used to remove heavy metal ion and anionic dye from aqueous solutions. The LDH films with thickness of similar to 4 mu m by EPD method show a high degree of c-orientation of the LDH platelets (the ab-plane parallel to the substrate) an strong adhesion to the substrate confirmed by XRD and SEM. The sorption kinetics of the LDH film for Cr(VI) and Remazol Brilliant Blue R dye (RBBR) was appropriately described by the pseudo-second-order model. Sorption isotherms for Cr(VI) and RBBR by the LDH film were studied, which can be fitted by the Langmuir model more satisfactorily than by the Freundlich model. It was found that the sorption capacity (q(MAX)) reached similar to 79.4 mg g-1 for Cr(VI) and similar to 222 mg g(-1) for RBBR respectively much larger than that of the corresponding LDH powder sample (similar to 67.6 mg g(-1) for Cr(VI) and similar to 192.3 mg g-1 for RBBR, respectively). Furthermore, the LDH film exhibits excellent sorption regeneration performances as compared to the powder sample, Which facilitates its repeatable and cyclic usage over a long period. Because of the low-cost preparation, high sorption capacity, convenient manipulation; as well as easy regeneration of the LDH film, it is expected that this film can be potentially used as a structured adsorbent in the field of water treatment.

Keywords: Adsorption, Al, Anion-Exchange, Aqueous-Solutions, Hydrotalcite, Ion-Exchange, Kinetics, Langmuir, Mg, Orange, Removal, Sorption

? Huang, J.H., Wang, X.L., Wang, X.M. and Huang, K.L. (2011), Hyper-cross-linked polystyrene-co-divinylbenzene resin modified with acetanilide: Synthesis, structure, and adsorptive removal of salicylic acid from aqueous solution. *Industrial & Engineering Chemistry Research*, **50** (5), 2891-2897.

Full Text: [2011\Ind Eng Che Res50, 2891.pdf](2011/Ind%20Eng%20Che%20Res50,%202891.pdf)

Abstract: A series of novel hyper-cross-linked resins were prepared from macroporous cross-linked chloromethylated polystyrene-co-divinylbenzene (PS) by adding a different quantity of acetanilide in the Friedel-Crafts reaction. The results indicated that the synthesized resin l. possessed predominant mesopores (2-5 nm) and medium-values specific surface area with a few acetanilide groups on the surface. Among these resins, HJ-W02 had the largest adsorption capacity toward salicylic acid and hence selected as the model resin for adsorptive removal of salicylic acid from aqueous solution. The kinetic and isotherm data could be well-fitted by pseudo-second-order rate equation and Freundlich model, respectively. Increase of the solution pH had a negative effect while Cd2+ posed a positive effect on the adsorption. Hydrogen bonding between the carbonyl groups of HJ-W02 and carboxyl (hydroxyl) groups of salicylic acid played an important role. The breakthrough point of HJ-W02 toward salicylic acid was 122.5 BV and 5% of sodium hydroxide aqueous solution regenerated it completely.

Keywords: Adsorption, Blue Adsorption, Hypercrosslinked Polystyrene, Ions, Kinetics, Oxygenated Aromatic-Compounds, pH, Polymeric Adsorbents, Renewable Resources, Sorption, Thermodynamics

? Sun, S.S. and Tang, R.C. (2011), Adsorption and UV protection properties of the extract from honeysuckle onto wool. *Industrial & Engineering Chemistry Research*, **50** (8), 4217-4224.

Full Text: [2011\Ind Eng Che Res50, 4217.pdf](2011/Ind%20Eng%20Che%20Res50,%204217.pdf)

Abstract: The adsorption and UV-protection properties of water-extract from honeysuckle whose main ingredient is chlorogenic acid onto wool were studied. The effect of initial pH on the adsorption was investigated, and the extent of adsorption was found to increase with decreasing pH in the range 2-7. Four kinetic equations, namely pseudo-first-order, pseudo-second-order, Elvoich, and intraparticle diffusion equations were employed to investigate the adsorption rates. The pseudo-second-order model provided the best fit to the experimental data and was indicated with the activation energy of 47.91 kJ mol-1. The equilibrium adsorption data were fitted by Freundlich, Langmuir, Redlich-Peterson, and Langmuir-Nernst isotherm models. The adsorption behavior accorded with Redlich-Peterson and Langmuir-Nernst models well. The honeysuckle extract showed good build-up properties, and the UV transmittance in the range of UVA and UVB of wool treated with honeysuckle extract decreased obviously while the ultraviolet protection factors increased. The extract of honeysuckle may be developed as a natural UV-absorbing agent applied to wool finishing.

Keywords: Adsorption, Chitosan, Chlorogenic Acid, Cotton, Equilibrium, Freundlich, Isotherm, Kinetic, LAC, Langmuir, Models, Natural Dyes, pH, Silk, Tea

? Biswal, N.R. and Paria, S. (2011), Wetting of TX-100 and lgepal CO-630 Surfactants on a PTFE Surface. *Industrial & Engineering Chemistry Research*, **50** (10), 6138-6145.

Full Text: [2011\Ind Eng Che Res50, 6138.pdf](2011/Ind%20Eng%20Che%20Res50,%206138.pdf)

Abstract: Nonionic surfactants are advantageous in a diversified range of applications from household cleaners, laundry detergents, and shampoo to paints, coatings, and food emulsifiers because of their low CMC and surface tension values over the ionic surfactants. Nonionic surfactants, in general, are very useful in mixed surfactant systems because of their electrical neutrality. Among the similar class of nonionic surfactants, structural difference is important in the performance. In this study, we report on the adsorption and wetting behavior of two nonionic surfactants (TX-100 and Igepal CO-630) having the same head group but structurally different tail groups. The kinetics of adsorption follows a pseudo-second-order kinetic model and a Langmuir-type isotherm for both the surfactants. The change in contact angle with the concentration of surfactant follows a trend similar to that for adsorption onto a PTFE surface. At low surfactant concentration, Igepal CO-630 shows a slightly higher adsorption density and better wetting properties than TX-100. Both surfactants show lower adsorption densities at the PTFE water interface than at the air-water interface.

Keywords: Adsorption, Aqueous-Solutions, Cationic Surfactants, Cetyltrimethylammonium Bromide, Contact Angles, Hydrophobic Surfaces, Isotherm, Kinetic, Kinetic Model, Kinetics, Low-Energy Solids, Nonionic Surfactants, Propanol Mixtures, Triton X-100, Wettability

? Zhan, Y.C., Luo, X.B., Nie, S.S., Huang, Y.N., Tu, X.M. and Luo, S.L. (2011), Selective separation of Cu(II) from aqueous solution with a novel Cu(II) surface magnetic ion-imprinted polymer. *Industrial & Engineering Chemistry Research*, **50** (10), 6355-6361.

Full Text: [2011\Ind Eng Che Res50, 6355.pdf](2011/Ind%20Eng%20Che%20Res50,%206355.pdf)

Abstract: A novel Cu(II) magnetic ion-imprinted polymer (MIIP) was prepared via the sol gel method. The Cu(II)-MIIP exhibited good magnetic property and thermal stability. The binding characteristics of Cu(II)-MIIP were studied by adopting both static and dynamic adsorption experiments. The maximum adsorptions calculated from the Langmuir isotherm are 58.20 and 23.10 mg/g for Cu(II)-MIIP and magnetic nonimprinted polymer (MNIP), respectively. The kinetics studies showed that the adsorption process obeyed a pseudo-second-order kinetic model. The selectivity coefficients of the Cu(II)-MIIP for Cu(II) in the presence of Zn(II) and Ni(II) are 49.44 and 50.38, respectively. The relative selectivity coefficients of Cu(II)-MIIP for Cu(II)/Zn(II) and Cu(II)/Ni(II) are 12.36 and 8.73, respectively. Moreover, Cu(II)-MIIP could be used five times without obvious deterioration in their adsorption capacities.

Keywords: Adsorption, Aqueous Solution, Beads, Carbon Nanotubes, Composite, Copper, Cu(II), Isotherm, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Magnetic, Metal-Ions, Ni(II), Particles, Removal, Selective, Sol-Gel, Solid-Phase Extraction, Sorption

? Martinez, M., Oliveros, R. and Aracil, J. (2011), Synthesis of biosurfactants: Enzymatic esterification of diglycerol and oleic acid. 1. Kinetic modeling. *Industrial & Engineering Chemistry Research*, **50** (11), 6609-6614.

Full Text: [2011\Ind Eng Che Res50, 6609.pdf](2011/Ind%20Eng%20Che%20Res50,%206609.pdf)

Abstract: The growing application of environmentally friendly products raised in the last few years has increased the interest in biodegradable nonionic surfactant products. As an example of these, polyglycerol fatty acid esters have a wide field of application in many industries as additives of cosmetics, food, photography, inks, etc. Also, the huge range of possible raw materials for these products increases cited interest. The esterification of diglycerol with oleic acid using an enzyme (NOVOZYM-435) as catalyst was studied in this work. Several experiments were carried out at different temperatures, catalyst concentrations, and acid/alcohol molar ratios. A pseudo-second-order kinetic model, including Langmuir adsorption factors for the acid, was developed. The results show that this proposed kinetic model reproduces the experimental data with a maximum 10% error.

Keywords: Adsorption, Kinetic, Kinetic Model, Langmuir, Oil, System

? Tomul, F. (2011), Synthesis, characterization, and adsorption properties of Fe/Cr-pillared bentonites. *Industrial & Engineering Chemistry Research*, **50** (12), 7228-7240.

Full Text: [2011\Ind Eng Che Res50, 7228.pdf](2011/Ind%20Eng%20Che%20Res50,%207228.pdf)

Abstract: Bentonites pillared with iron, iron/chromium with different Fe/Cr molar ratios, and chromium were synthesized and tested as adsorbents of cadmium. The pillared bentonites were characterized by using scanning electron microscopy with energy dispersive system (SEM-EDS), powder X-ray diffraction (XRD), N(2)-adsorption/desorption, and Fourier-transformed infrared spectroscopy (FTIR). The thermal stability of the samples was studied with thermogravimetry (TG). Adsorption experiments were conducted by varying pH, contact time, and temperature. The content of the pillaring solution was the most important parameter that influenced the physicochemical, textural, and acidic properties of the pillared bentonites. The results revealed that the adsorption capacity of the materials increased with an increase in pH and contact time. The results also indicated that the equilibrium adsorption data of Cd(2+) onto Cr-pillared bentonite best fit the Redlich-Peterson model, whereas adsorption onto Fe-pillared bentonite and Fe/Cr-pillared bentonite with Fe/Cr molar ratio of 5:5 correlated with the first-order model. Adsorption kinetics results showed that the adsorption followed the pseudo-second-order kinetic model. Thermodynamic studies suggested that the adsorption of Cd(2+) onto Fe-pillared bentonite was an endothermic and spontaneous process.

Keywords: Acid-Activated Montmorillonite, Adsorption, Adsorption Kinetics, Aqueous-Solution, Cadmium, Catalytic-Properties, Cd(II), Equilibrium, Kaolinite Clay, Kinetics, Model, Pb(II), Peroxide Oxidation, Pseudo-Second-Order, Removal, Thermodynamic

? Andersson, K.I., Eriksson, M. and Norgren, M. (2011), Removal of lignin from wastewater generated by mechanical pulping using activated charcoal and fly ash: adsorption kinetics. *Industrial & Engineering Chemistry Research*, **50** (13), 7733-7739.

Full Text: [2011\Ind Eng Che Res50, 7733.pdf](2011/Ind%20Eng%20Che%20Res50,%207733.pdf)

Abstract: The possible application of adsorption for the removal of lignin-related material found in wastewater generated by mechanical pulping was investigated. Activated charcoal and fly ash were used as adsorbents in batch experiments. The lignin-related material exhibited properties well-suited for adsorption onto both adsorbents, although the sorption capacity of activated charcoal exceeds that of fly ash. The experimental data were fitted to pseudo-first- and pseudo-second-order rate kinetic expressions, and an attempt was made to find the rate-limiting step involved in the adsorption processes. The results showed that lignin adsorption onto both activated charcoal and fly ash follows pseudo-second-order rate kinetics and that both boundary-layer diffusion and intraparticle diffusion are likely involved in the rate-limiting mechanisms. Adsorption is an interesting option in advanced wastewater treatment, and fly ash appears to be a suitable low-cost adsorbent for recalcitrant organic pollutants.

Keywords: Adsorption, Aqueous-Solution, Basic Dye, Carbon, Diffusion, Dissolved Lignin, Efficiency, Effluent, Kinetics, Lignin, Phenols, Pseudo-Second-Order, Sorption, Substances, Wastewaters

? Mohamed, M. and Ouki, S. (2011), Removal mechanisms of toluene from aqueous solutions by chitin and chitosan. *Industrial & Engineering Chemistry Research*, **50** (16), 9557-9563.

Full Text: [2011\Ind Eng Che Res50, 9557.pdf](2011/Ind%20Eng%20Che%20Res50,%209557.pdf)

Abstract: Low-cost materials of natural origin such as chitin and chitosan were found to effectively remove toluene from aqueous solutions. Batch adsorption experiments for the removal of toluene (5-200 mg/L) were conducted to obtain the isotherm profile. The effects of various parameters such as initial concentrations, adsorbent dose, and contact time on the removal performance of toluene were evaluated. Chitosan shows better removal efficiency, compared to chitin, both in terms of the level of toluene adsorbed per unit mass of adsorbent and in terms of the adsorption kinetics. Adsorption capacity in the range of 33%-58% efficiency was obtained when the chitosan materials were used. The adsorption data on toluene were found to best fit the Langmuir and Redlich-Peterson isotherm models. The kinetic studies revealed that the adsorption of toluene followed the pseudo-second-order rate model. Overall, the study demonstrated that chitosan is a potential adsorbent for the removal of toluene at concentrations as high as 200 mg/L.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Kinetics, Batch, Batch Adsorption, BTEX, Chitin, Chitosan, Equilibrium Isotherm, Isotherm, Kinetic, Kinetics, Langmuir, Low-Cost Adsorbents, Mechanisms, Metal-Ions, Removal, Toluene, Water

? Anirudhan, T.S. and Rejeena, S.R. (2011), Thorium(IV) removal and recovery from aqueous solutions using tannin-modified poly(glycidylmethacrylate)-grafted zirconium oxide densified cellulose. *Industrial & Engineering Chemistry Research*, **50** (23), 13288-13298.

Full Text: [2011\Ind Eng Che Res50, 13288.pdf](2011/Ind%20Eng%20Che%20Res50,%2013288.pdf)

Abstract: A novel adsorbent, tannin-modified poly(glycidylmethacrylate)-grafted zirconium oxide-densified cellulose (TMPGZDC) was synthesized by graft copolymerization reaction of glycidylmethacrylate onto zirconium oxide densified cellulose (ZDC) in the presence of N,N’-methylenebisacrylamide as cross-linker followed by tannin immobilization, and well characterized. The adsorption efficiency of TMPGZDC toward thorium(IV) from aqueous solutions was studied at different optimized conditions. The optimum pH for maximum adsorption was found to be 5.5 with the adsorption percentage of 99.2% for an initial concentration of 10 mg/L. Equilibrium was achieved within 2 h. The kinetic data were found to follow pseudo-second-order model, which assumes the presence of chemisorption. The temperature dependence indicates an exothermic process. The well agreement of equilibrium data with Langmuir isotherm and Redlich-Peterson isotherm models confirms the monolayer coverage of Th(IV) onto TMPGZDC surface and the maximum adsorption capacity was found to be 96.7 mg/g. Complete removal of Th(IV) from simulated seawater was possible with an adsorbent dosage of 3.0 g/L. Spent adsorbent was effectively degenerated with 0.1 M HNO3. The present investigation shows that TMPGZDC is a promising adsorbent for the removal and recovery of Th(IV) from aqueous solutions.

Keywords: Adsorbent, Adsorption, Alumina, Biosorption, Equilibrium, Expanded Bed Adsorption, Extraction, Isotherm, Isotherm Models, Kinetic, Langmuir, pH, Preconcentration, Recovery, Removal, Silica, Sorption, Thermodynamic Parameters, Uranium(VI)

? Arshadi, M., Ghiaci, M. and Gil, A. (2011), Schiff base ligands immobilized on a nanosized SiO2-Al2O3 mixed oxide as adsorbents for heavy metals. *Industrial & Engineering Chemistry Research*, **50** (24), 13628-13635.

Full Text: [2011\Ind Eng Che Res50, 13628.pdf](2011/Ind%20Eng%20Che%20Res50,%2013628.pdf)

Abstract: Three adsorbents have been synthesized by immobilization of Schiff base ligands on the surface of SiO2-Al2O3 mixed oxides and evaluated for the removal of Cd(II) and Pb(II) from aqueous solutions. The contact time to attain equilibrium for maximum adsorption was 120 min. These heterogeneous Schiff base ligands were found to be effective adsorbents for the removal of heavy metal ions from solution, with Si/Al-pr-N=salicylaldehyde having a high adsorption capacity for Cd(II) ions and Si/Al-pr-N=pyridine-2-carbaldehyde having a high adsorption capacity for Pb(II) ions. The adsorption of heavy metal ions has been studied in terms of pseudo-first-order and pseudo-second-order kinetics, and the Freundlich, Langmuir, and Langmuir-Freundlich isotherm models have also been applied to the equilibrium adsorption data.

Keywords: Activated Carbon, Adsorption, Aqueous-Solutions, Cd(II), Freundlich, Ion Adsorption, Isotherm, Isotherm Models, Kinetics, Langmuir, Lead(II), Models, Removal, Silica, Sorption, ZSM-5 Zeolite

? He, S., Zhao, Y.F., Wei, M., Evans, D.G. and Duan, X. (2012), Fabrication of hierarchical layered double hydroxide framework on aluminum foam as a structured adsorbent for water treatment. *Industrial & Engineering Chemistry Research*, **51** (1), 285-291.

Full Text: [2012\Ind Eng Che Res51, 285.pdf](2012/Ind%20Eng%20Che%20Res51,%20285.pdf)

Abstract: A hierarchical Mg-Al layered double hydroxide (LDH) framework has been fabricated via the in situ crystallization technique on aluminum foam, which can be used to remove heavy metal ion Cr(VI) and anionic dye (Remazol Brilliant Blue R, denoted as RBBR) from aqueous solutions. The as-prepared LDH/Al-foam displays flowerlike LDH microspheres composed of numerous LDH nanoplatelets, which was confirmed by XRD and SEM. The sorption kinetics of hierarchical LDH framework for Cr(VI) was appropriately described by a pseudo-second-order model. Sorption isotherms of both Cr(VI) and RBBR were also studied, which can be fitted by the Langmuir model more satisfactorily than the Freundlich one. It was found that the sorption capacities (q(MAX)) of the LDH framework reached 27.8 mg g-1 for Cr(VI) and 212.8 mg g-1 for RBBR, respectively, much larger than those of the corresponding LDH powder sample (21 mg g-1 for Cr(VI) and 166.7 mg g-1 for RBBR). Furthermore, the hierarchical LDH framework exhibits excellent sorption-regeneration performances compared with the powder sample, which facilitates its repeatable and cyclic usage over a long period. Owing to the high sorption capacity, low-cost preparation, convenient manipulation, and easy regeneration of the hierarchical LDH framework, it can be potentially used as a structured adsorbent in the field of water treatment.

Keywords: Adsorbent, Aluminum, Aqueous-Solutions, Cr(VI), Freundlich, Heavy Metal, Hydrotalcite, Isotherms, Kinetics, Langmuir, Metal Ion, Nanostructures, Oxidation, Regeneration, Removal, Sorption, Sorption Kinetics

? Liu, T.T., Yang, M., Wang, T.X. and Yuan, Q.P. (2012), Prediction strategy of adsorption equilibrium time based on equilibrium and kinetic results to isolate taxifolin. *Industrial & Engineering Chemistry Research*, **51** (1), 454-463.

Full Text: [2012\Ind Eng Che Res51, 454.pdf](2012/Ind%20Eng%20Che%20Res51,%20454.pdf)

Abstract: We proposed a systematic strategy based on the studies about the adsorption performance of AB-8 macroporous adsorption resins for prediction of the equilibrium time in taxifolin isolation. Batch experiments were appropriately designed to obtain the best fitting model and to gain insight into the adsorption mechanisms. A modified Langmuir model was used to calculate the adsorption capacity at the adsorption equilibrium point (Q(e)). Subsequently, the reformed pseudo-second-order model was employed to predict the effects of the second-order rate index (k2Q(e)) on the adsorption time (t). Then, the effects of the initial adsorption factor (R(i)) on the relative adsorption time (t/t(e)) were predicted by the reformed intraparticle diffusion model. On the basis of mathematical deduction, the value of the adsorption equilibrium time (t(e)) can be predicted, which may lead to reduced sampling in adsorption kinetics studies. Furthermore, the good agreement between experimental and predicted data confirmed the reliability of the proposed strategy.

Keywords: Activated Carbon, Adsorption, Adsorption Kinetics, Aqueous-Solution, Batch, Behavior, Equilibrium, Kinetic, Kinetics, Langmuir, Macroporous Resins, Model, Polystyrene, Preparative Separation, Sorption, Thermodynamics, Waste

# Title: Industrial Health

Full Journal Title: Industrial Health

ISO Abbreviated Title:

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ISSN: 0019-8366

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

: Impact Factor

? Shamy, M.Y., Elgazzar, R.M., Elsayed, M.A. and Attia, A.M. (1994), Study of some biochemical-changes among workers occupationally exposed to phenol, alone or in combination with other organic-solvents. *Industrial Health*, **32** (4), 207-214.

Full Text: [1994\Ind Hea32, 207.pdf](1994/Ind%20Hea32,%20207.pdf)

Abstract: The present study was aimed for the effects of exposure to multiple organic solvent vapors in comparison with single exposure to phenol. It included 20 workers exposed to phenol alone and 32 workers of combined exposure to phenol, benzene, toluene and methyl ethyl ketone. A control group of 30 subjects was also included. The levels of transaminases, total proteins, prothrombin time, bleeding time, clotting time, fasting blood sugar, serum creatinine and some trace elements (copper, zinc, iron, magnesium, manganese and calcium) were determined in blood together with a complete blood picture. Urine samples were analyzed for phenol, hippuric acid and methyl ethyl ketone, The effects of combined exposure did not differ from that of exposure to phenol alone concerning the majority of the tested parameters, Only the levels of platelets count, prothrombin time, eosinophils, copper and iron have been affected by combined exposure in a probably additive manner.

Keywords: Phenol, Benzene, Methyl Ethyl Ketone, Toluene, Benzene

? Smith, D.R. (2007), Historical development of the journal impact and its relevance for occupational health. *Industrial Health*, **45** (6), 730-742.

Full Text: [2007\Ind Hea45, 730.pdf](2007/Ind%20Hea45,%20730.pdf)

Abstract: For better or for worse, the advent of journal impact factors last century marked a key turning point in the global development of scientific publication and referencing systems. Since that time however, the concept has attracted considerable attention from a variety of sources, and its usefulness for relatively small research fields such as occupational health, has also been debated. For these reasons, the current paper provides a descriptive history of the journal impact factor and a discussion of its relevance for occupational health. Developmental milestones, inherent shortcomings and future challenges are also described, along with techniques used for increasing the impact factor and some potential strategies for improvement of the citation indexing system. While many scholars now question its increasingly prominent role in the evaluation of scientific research, the journal impact factor continues to form an important component in the dissemination and retrieval of scientific literature in the occupational health field, as elsewhere. Due to the controversy incurred since its inception however, and the increasingly diverse manner in which it is now being used, it remains to be seen what the next 50 years of journal impact factors will bring.

Keywords: Association, Citation Classics, Citation Index, Classics, Editors, Epidemiology, Future, History of The Journal, Impact Factor, Journal, Journal Publishing, Literature, Medical Journals, Occupational Health, Publication, Quality, Research, Science-Citation-Index, Scientific Journals, Scientific Research

? Smith, D.R., Gehanno, J.F. and Takahashi, K. (2008), Bibliometric research in occupational health. *Industrial Health*, **46** (6), 519-522.

Full Text: [2008\Ind Hea46, 519.pdf](2008/Ind%20Hea46,%20519.pdf)

Keywords: Bibliometric, Citation-Classics, Environmental-Health, Impact Factor, Journal Impact, Manuscripts, Medicine, Research, Trends

? Smith, D.R. and Leggat, P.A. (2009), Estimation of some missing bibliometric indicators at *Industrial Health*. *Industrial Health*, **47** (2), 202-203.

Full Text: [2009\Ind Hea47, 202.pdf](2009/Ind%20Hea47,%20202.pdf)

Keywords: Bibliometric, Health, Impact Factor, Industrial, Journal Impact, Mar, Trends

? Scutaru, C., Quarcoo, D., Takemura, M., Welte, T., Fischer, T.C. and Groneberg-Kloft, B. (2010), Density-equalizing mapping and scientometric benchmarking in *Industrial Health*. *Industrial Health*, **48** (2), 197-203.

Full Text: [2010\Ind Hea48, 197.pdf](2010/Ind%20Hea48,%20197.pdf)

Abstract: Bibliometric techniques have been introduced to the field of industrial health in the past two decades. Since then, several studies have assessed progression of science in this area using quantitative measures and qualitative measures such as impact factor or H-indices. Since novel procedures such as density-equalizing mapping have not been used so far, the present study combined classical bibliometric tools with novel scientometric and visualizing techniques. All “INDUSTRIAL HEALTH” entries listed in the ISI database since 1987 were screened and analyzed. Using bibliometric approaches, a continuous increase in qualitative markers such as collaboration numbers or citations were found while quantity markers such as author numbers or publication numbers remained relatively constant. The combination with density equalizing mapping revealed a distinct global pattern of research productivity and citation activity with Japanese institutions at the leading position. Radar chart techniques were used to visualize bi- and multilateral research cooperations and institutional cooperations. In summary, the present study supplies a first scientometric-bibliometric approach that visualizes research activity in “INDUSTRIAL HEALTH” over the past decades.

Keywords: Bibliometric, Bibliometric Techniques, Burden, Citation, Citations, Collaboration, Database, Density Equalizing, Disease, Global, Health, Impact, Impact Factor, Industrial Health, ISI, ISI Database, Journals, Mapping, Medicine, Occupational Health, Occupational-Health, Productivity, Publication, Quantitative, Radar, Radar Chart, Research, Research Activity, Research Productivity, Science, Scientometric, Scientometry, Techniques, Tools, Trends

# Title: Industrial & Labor Relations Review,

Full Journal Title: Industrial & Labor Relations Review,

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

: Impact Factor

? Casey, D.L. and McMillan, G.S. (2008), Identifying the “invisible colleges” of the *Industrial & Labor Relations Review*: A bibliometric approach. *Industrial & Labor Relations Review*, **62** (1), 126-132.

Abstract: Since its inaugural issue in 1947, the Industrial and Laboy-RelationsReview (ILRR) has been considered among the foremost industrial relations Journals. Prominent among subjects treated by ILRR’s articles in the journal’s early years were collective bargaining and industrial strife, but the subject mix has changed greatly with the times. This paper employs bibliometric techniques to compare IIRR’s intellectual bases across three recent periods: 1974-1984, 1985-1995, and 1996-2006. Using co-citation and network analyses, the authors identify the “invisible colleges”-research networks that refer to each other in their publications-of ILRA Economics-oriented journals were heavily cited by ILRR authors across the entire 33-year observation period, but there is evidence that another field, human resource management, was of growing importance in the most recent years.

Keywords: Authors, Bibliometric, Co-Citation, Journals, Management, Networks

# Title: Industrial Laboratory

Full Journal Title: Industrial Laboratory

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Journal Country/Territory: Russia

Language: English

Publisher: Plenum Publ Corp

Publisher Address: Consultants Bureau, 233 Spring St, New York, NY 10013

Subject Categories

Instruments & Instrumentation Materials Science, Characterization & Testing: Impact Factor

? Orient, I.M. (1967), A statistical study of citation of papers on analytical chemistry. *Industrial Laboratory*, **33** (11), 1575-??.

? Venitsia, E.V., Volkov, B.I., Ioffee, V.P., Kolosova, G.M. and Rubinsht, R.N. (1971), Some problems in sorption dynamics in linear isotherm range with external diffusion kinetics. *Industrial Laboratory*, **37** (5), 694-??.

Keywords: Kinetics, Sorption

? Zhukhovitskii, A.A., Yanovskii, S.M., Silaeva, I.A., Chernogorova, Z.D., Arinshtein, A.E. and Aranovich, G.L. (1983), Chromatogram interpretation. *Industrial Laboratory*, **49** (4), 348-353

? Aranovich, G.L., Arinshtein, A.E., Zhukhovitskii, A.A., Silaeva, I.A., Chernogorova, Z.D. and Yanovskii, S.M. (1983), Interpretation of overlapping chromatographic peaks. *Industrial Laboratory*, **49** (11), 1136-1138.

? Aranovich, G.L. (1984), Method of interpreting chromatograms with overlapping peaks. *Industrial Laboratory*, **50** (9), 860-863.

? Aranovich, G.L. (1985), Resolution of partially overlapping chromatographic peaks into peaks of individual components. *Industrial Laboratory*, **51** (10), 887-891.

? Berezkin, V.G., Koshevnik, M.A., Sorokina, E.Y. and Guglya, E.B. (1989), Scientometric analysis of advances in chromatography (review). *Industrial Laboratory*, **55** (11), 1221-1229.

? Petrov, S.I. and Ivanova, Z.V. (2000), Analytical monitoring in water treatment: Alternating-current inversion-voltammetric determination of KF-91 flocculant. *Industrial Laboratory*, **66** (2), 77-79.

Abstract: An alternating-current inversion-voltammetric method for dt termination of KF-91 cationite flocculant (2-methyl-N-methylpyridinium-5-polyvinylmethyl sulfate) is proposed. The method is based on suppress ion of the anodic current of cadmium dissolution (DeltaH) in the presence of KF-91 using a mercury-graphite electrode and a 2 M NaCl solution as the background electrolyte. The analytical function DeltaH of the KF-91 concentration resembles a Langmuir adsorption isotherm.

# Title: Industrial Marketing Management

Full Journal Title: Industrial Marketing Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Backhaus, K., Lugger, K. and Koch, M. (2011), The structure and evolution of business-to-business marketing: A citation and co-citation analysis. *Industrial Marketing Management*, **40** (6), 940-951.

Full Text: [2011\Ind Mar Man40, 940.pdf](2011/Ind%20Mar%20Man40,%20940.pdf)

Abstract: The field of business-to-business (B2B) marketing has grown considerably in the past four decades. However the state of knowledge about its structure and evolution remains limited. Who are the key players and what are the key papers in B2B marketing? What main research topics have been investigated over time? This article answers these questions by applying bibliometric methods for the first time to the existing body of scholarly B2B research. The key findings reveal a highly dynamic discipline in the 1970s and 1980s, when new knowledge was being intensively exchanged among an increasing number of B2B researchers. Since that time, the pace of development has slowed, and diversification in the discipline manifested itself in a distinctive number of core research subfields. Yet initial research topics such as organizational buying behavior, where much research is still undone, are to a large extent not addressed by modern B2B scholars. (C) 2011 Elsevier Inc. All rights reserved.

Keywords: Analysis, Author Co-Citation Analysis, Author Cocitations, B2B Marketing, Behavior, Bibliometric, Bibliometric Methods, Buyer-Seller Relationships, Citation, Citation Analysis, Co-Citation Analysis, Cocitation, Consumer Research, Development, Evolution, Intellectual Development, Intellectual Structure, Journals, Knowledge, Management, Model, Networks, Papers, Relative Presence, Research, Research Topics, Researchers, Topics

# Title: Industrial Pollution Control, the Practial Implications

Business Books, London

Tearle, K. (1973), Industrial Pollution Control, the Practial Implications, Business Books, London.

Tearle, K. (1973), Introduction. in *Industrial Pollution Control*, *the Practial Implications*. (Edited by Tearle, K.), Business Books, London, 1-9.

Farquhar, J.T. (1973), Total systems approach to pollution control. in *Industrial Pollution Control*, *the Practial Implications*. (Edited by Tearle, K.), Business Books, London, 10-21.

O’Dell, D.S. (1973), Medical effects of pollutants. in *Industrial Pollution Control*, *the Practial Implications*. (Edited by Tearle, K.), Business Books, London, 22-28.

Chalmers, R.K. (1973), Pretreatment of toxic wastes. in *Industrial Pollution Control*, *the Practial Implications*. (Edited by Tearle, K.), Business Books, London, 65-74.

# Title: Industrial Wastes

Full Journal Title: Industrial Wastes

ISO Abbreviated Title: Ind. Wat.

JCR Abbreviated Title: Ind Wat

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories

: Impact Factor

Roherer, K.L. (1971), An integrated facility for the treatment of lead and fluoride wastes. *Industrial Wastes*, **17**, 36-39.

# Title: Industrial Water Treatment

Full Journal Title: [Industrial Water Treatment](http://www.ilib2.com/P-ISSN~1005-829X.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1005-829X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories

: Impact Factor

? He, X.H. (2004), Removal of heavy metals from wastewater by using peat adsor. *Industrial Water Treatment*, **24** (9), 1-4.

Full Text: [2004\Ind Wat Tre24, 1.pdf](2004/Ind%20Wat%20Tre24,%201.pdf)

Abstract: The physicochemical properties of peat, a natural and cheap mineral, are introduced. The modifying methods of peat and its adsorption capacity for various heavy metals are reviewed. The influences of pH, modifying method, and concentrations of competing metals on peat adsorption are discussed. The adsorption mechanisms and rules of peat are summarized. The mechanisms of heavy metal ions binding to peat includes ion exchange, complexation, surface adsorption, and chemisorption. The sorption usually conforms to Langmuir isotherm or Freundlich isotherm. At the end, the application prospects of peat on the treatment of wastewater containing heavy metals are forecast, and some suggestions are proposed.

Keywords: Peat, Heavy Metals, Wastewater

? Chen, W.S., Wei, M., Li, Y.J. and Gao, B.Y. (2004), Adsorption removal of anionic surfactants from aqueous solution by Zn-Al-O mixed oxide. *Industrial Water Treatment*, **27** (11), 52-54.

Full Text: [2004\Ind Wat Tre27, 52.pdf](2004/Ind%20Wat%20Tre27,%2052.pdf)

Abstract: A hydrotalcite-like compound has been prepared by coprecipitation method. The hydrotalcite-like compound is calcined at 500°C, transformed into Zn-Al-O mixed oxide. The hydrotalcite-like compound and Zn-Al-Al-O mixed oxide are characterized by XRD, TG/DTA and FT-IR respectively. The removal of anionic surfactants from aqueous solution by the Zn-Al-O mixed oxide has been investigated. The conditions of the experiment and the influential factors are studied and the adsorption mechanism is discussed. The results show that the Zn-Al-O oxide has remarkable effect on the removal rate of anionic surfactants.

Keywords: Hydrotalcite-Like Compound, Zn-Al-O Mixed Oxide, Adsorption, Anionic Surfactants

? Jiao, L.M., Liao, X.P. and Shi, B. (2008), Adsorption of Cr(VI) from electroplating wastewater by collagen fiber immobilized ferric(III). *Industrial Water Treatment*, **28** (9), 17-20.

Full Text: [2008\Ind Wat Tre28, 17.pdf](2008/Ind%20Wat%20Tre28,%2017.pdf)

Abstract: A new adsorbent, collagen fiber immobilized Fe3+(FeICF), has been prepared, and its adsorption behaviors to Cr(VI) in electroplating wastewater has been investigated. It is found that the adsorption capacity of Cr(VI) on FeICF is more than 21.0 mg/g in the pH range of 3.0-8.0. The removal extent of Cr(VI) increases with the increase of adsorbent offer. When the initial concentration of Cr(VI) in the mixed solution is 25 mg/L, and the adsorbent dosage is 0.100 g, the removal rate of Cr(VI) by FeICF is 71.5%, while it is 90.3% with 0.500 g of adsorbent. The absorbing effect of co-existed cations, like Ni(II), Cu(II) and Zn(II) in the solution, on the removal of Cr(VI) is inconsiderable. The adsorption rate of Cr(VI) by FeICF is fast, and the adsorption equilibrium is attained in 50 min. The adsorption kinetic of Cr(VI) can be well described by the pseudo-second-order rate model. Furthermore, the results of column adsorption and desorption experiments show that FeICF could be effectively used for the adsorption removal of Cr(VI) from electroplating wastewater.

Keywords: Collagen Fiber, Immobilized Ferric(III), Adsorption, Electroplating Wastewater

# Title: Industrie Alimentari

Full Journal Title: Industrie Alimentari

ISO Abbreviated Title: Ind. Aliment.

JCR Abbreviated Title: Ind Aliment-Italy

ISSN: 0019-901X

Issues/Year: 12

Journal Country/Territory: Italy

Language: English

Publisher: Chiriotti Editori

Publisher Address: Po Box 66, 10064 Pinerolo, Italy

Subject Categories:

Food Science & Technology: Impact Factor 0.036, / (2001)

? Pagella, C., Galli, R. and De Faveri, D.M. (1998), Water reuse in industrial food processing. *Industrie Alimentari*, **3-8**, Suppl. 13.

Abstract: While water, as an industrial commodity, is considered increasingly as a valuable material and the subject of responsible care for the environment, water reuse is increasingly regarded as a tool for substantial reduction in water supply needs, and saving in related costs.

A strategic approach to water reuse must be based on a systematic analysis and on the principle that any water user must never use more water of a higher quality than strictly needed.

In this paper some hints are given for implementing water reuse in the food processing industry, particularly referring to the practical case of tomato processing for which a case study is also reported.

The results clearly show how remarkable environmental and economic advantages can be simply obtained by implementing low investment cost solutions, and that water supply and discharge flow rates can be dramatically reduced without implementing any special water upgrading treatment process.

# Title: Industry and Innovation

Full Journal Title: Industry and Innovation

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Valentin, F. and Jensen, R.L. (2003), Discontinuities and distributed innovation: The case of biotechnology in food processing. *Industry and Innovation*, **10** (3), 275-310.

Full Text: Ind Inn10, 275

Abstract: This paper examines the organization of distributed innovation shaped by the major discontinuity in the life sciences and their associated technologies that has unfolded over the past three decades. While most studies have focused on its effects on pharmaceutical R&D, this paper studies food processing technologies, taking biotech exploitation of the ubiquitous micro-organism of Lactic Acid Bacteria as its example. Patents provide most of the data. Although highly distributed forms of innovation emerge from 1980 onwards, incumbents introduce virtually all innovations in this field, while the role of dedicated biotechnology firms (DBFs) remains negligible. Public research organizations contribute significantly to distributed R&D, and to a limited extent they also take on the role of economic actors. To explain the organizational characteristics of this distributed innovation this paper suggests a distinction between definition and solution of innovation problems. Extending Simon’s analysis of complex problems, it is argued that definition and problem solving in innovation need not have the same levels of decomposability. By implication, the US model for biotech growth, emphasizing the market mechanisms of DBF formation, venture capital and scientist entrepreneurs, should not incautiously be pursued in all contexts and for all applications of biotechnology. Low decomposability of problem definition in innovations may preclude the emergence of these vehicles for market-driven growth, and in such cases distributed innovation must take other forms, including not least an active role of public science.

# Title: Infection

Full Journal Title: Infection

ISO Abbreviated Title: Infection

JCR Abbreviated Title: Infection

ISSN: 0300-8126

Issues/Year: 6

Journal Country/Territory: Germany

Language: Multi-Language

Publisher: MMV Medien & Medizin Verlagsgesellschaft MBH

Publisher Address: Neumarkter Str 18, D-81673 Munich, Germany

Subject Categories:

Infectious Diseases: Impact Factor

? Bert, F. and Lambert Zechovsky, N. (1996), Pathogens responsible for concurrent sinusitis and pneumonia in intensive care unit patients. *Infection*, **24** (1), 52-53.

? Tang, H., Huang, T., Jing, J., Shen, H. and Cui, W. (2009), Effect of procalcitonin-guided treatment in patients with infections: A systematic review and meta-analysis. *Infection*, **37** (6), 497-507.

Abstract: Objective: The aim of this study was to review the effectiveness of procalcitonin (PCT)-guided therapy in companson to standard therapy in patients with suspected or confirmed bacterial infections in terms of antibiotic prescription at inclusion, duration of antibiotic therapy, total antibiotic exposure days/1,000 days, length of stay in the intensive care unit (ICU), Length of stay in the hospital, and mortality. Methods: MEDLINE, EMBASE, Web of Science, and the Cochrane central register of controlled trials were searched up to November 2008. Studies considered to be eligible were randomized controlled trials comparing PCT-guided therapy with standard therapy in adult patients with bacterial infections. No language restriction was applied. Data were combined in a meta-analysis using random-effect models. Results: Seven studies with 1,458 patients were included. PCT-guided therapy was associated with a significant reduction in antibiotic prescription at inclusion (four studies; pooled odds ratio [OR] 0.506, 95% confidence interval [CI] 0.290-0.882, p = 0.016), duration of antibiotic therapy (six studies; weighted mean difference [WMD] 2.785, 95% CI 1.225-4.345, p = 0.000), total antibiotic exposure days/1,000 days (four studies; pooled relative risk [RR] 1.664, 95% CI 1.155-2.172, p = 0.000), and length of stay in the ICU (three studies; 292 patients; pooled WMD 3.49 days, 95% CI 1.28-5.70, p = 0.002). There were no significant differences in length of stay in the hospital (three studies; pooled WMD 1.003, 95% CI -0.430 to 2.437, p = 0.17) and mortality (seven studies; pooled OR 0.838, 95% CI 0.571-1.229, p = 0.365). Conclusions: Based on the results of this meta-analysis, it would appear that an algorithm based on serial PCT measurements would allow a more judicious use of antibiotics than currently occurs during the traditional treatment of patients with infections. PCT-guided antibiotic treatment appears to be safe and may also improve clinical outcome.

Keywords: Adult, Antibiotic, Antibiotic-Treatment, Antibiotics, Cochrane, Critically-Ill Patients, Diagnosis, Effectiveness, Embase, Exacerbations, Hospital, Icu, Intensive Care, Intensive Care Unit, Length Of Stay, Medline, Meta-Analysis, Methods, Mortality, Optimal Antimicrobial Therapy, Outcome, Randomized Controlled Trials, Randomized-Trial, Ratio, Relative Risk, Resistance, Respiratory-Tract Infections, Review, Risk, Science, Sepsis, Septic Patients, Systematic, Systematic Review, Therapy, Traditional, Treatment, Web of Science

# Title: Infection, Genetics and Evolution

Full Journal Title: [Infection, Genetics and Evolution](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6650&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=e75c0f8c24c7f050596233ef8244a1b5)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Gonzalez, J.P.J. and Editorial Board Member of Infection, Genetics and Evolution (2003), SARS: at least and at last, are we learning from the worst? *Infection, Genetics and Evolution*, **3** (2), 83-85.

Full Text: [I\Inf Gen Evo3, 83.pdf](I/Inf%20Gen%20Evo3,%2083.pdf)

# Title: Infection and Immunity

Full Journal Title: Infection and Immunity

ISO Abbreviated Title: Infect. Immun.

JCR Abbreviated Title: Infec Immunity

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Menezes, J., Jondal, M., Leibold, W. and Dorval, G. (1976), Epstein-barr virus interactions with human lymphocyte subpopulations - virus adsorption, kinetics of expression of epstein-barr virus-associated nuclear antigen, and lymphocyte- transformation. *Infection and Immunity*, **13** (2), 303-310.

# Title: Infectious Disease Clinics of North America

Full Journal Title: Infectious Disease Clinics of North America

ISO Abbreviated Title: Infect. Dis. Clin. North Am.

JCR Abbreviated Title: Infect Dis Clin N Am

ISSN: 0891-5520

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: W B Saunders Co

Publisher Address: Independence Square West Curtis Center, Ste 300, Philadelphia, PA 19106-339

Subject Categories:

Immunology Infectious Diseases: Impact Factor

? Holmberg, S.D. (1988), Vibrios and Aeromonas. *Infectious Disease Clinics of North America*, **2** (3), 655-676.

Abstract: There are many similarities in the Vibrionaceae that cause human illness in the United States (see Table 1). Vibrios are characteristically indigenous to marine, estuarine, and brackish environments. They are distributed mainly in Gulf of Mexico coastal water, and these organisms “bloom” when the water is warm. Outbreaks of disease in humans frequently occur in summer, coinciding with multiplication of vibrios in warm water. Sporadic cases and small outbreaks of cholera continue to occur in persons living on or near the Gulf of Mexico, but infection in most persons is unrecognized. In fact, more serious and frequent illnesses result from V. vulnificus wound infections and from gastroenteritis caused by vibrios other than *V. cholerae* 01. Underlying hepatic or neoplastic disease (especially leukemia) apparently increases the likelihood and severity of illnesses caused by V. vulnificus and Aeromonas. Some Vibrionaceae produce clinical illness by means of enterotoxins identical or similar to cholera toxin. For many others, hemolysins, cytotoxins, and other exotoxins are necessary to produce disease; the importance of these virulence factors often is not known or the importance of these virulence factors often is not known or is of doubtful significance. Also, purported pathogenicity as demonstrated by animal models, such as fluid accumulation in ligated ileal loops, is quite nonspecific and needs to be interpreted cautiously. For Plesiomonas, a mode of pathogenesis has not been discovered. Eating raw shellfish (frequently raw oysters) has been linked epidemiologically to enteric infections with most of these bacteria; foreign travel and exposure to seawater are other frequently observed epidemiologic associations with infection. Foreign travel, particularly to the Yucatan Peninsula of Mexico, has been strongly associated with the acquisition of non-01 *V. cholerae* and Plesiomonas organisms. Most Vibrionaceae in the United States are susceptible in vitro-and illnesses from them are responsive-to tetracycline, trimethoprim-sulfamethoxazole, and other common antimicrobial agents. However, as for other bacteria that cause diarrhea, the main treatment for uncomplicated disease is the judicious replacement of fluids and electrolytes lost in diarrhea. A loose network of surveilance for these organisms comprises hospital and public health laboratories in Gulf coastal states that plate diarrheal stools on TCBS agar. As recognized pathogens are more assiduously screened for, and as newly identified vibrios are definitely included or excluded as enteric pathogens, the clinical importance of these members of the Vibrionaceae family should become clearer.

? Jamall, I.S. and Davis, B. (1991), Chemicals and environmentally caused diseases in developing countries. *Infectious Disease Clinics of North America*, **5** (2), 365-375.

Abstract: This chapter discusses international aspects of diseases resulting from exposure to chemical pollutants in the environment, with an emphasis on developing countries. These countries share many of the same problems of air, water, and pesticide pollution that face the more industrialized countries. In developing countries, however, the problems are compounded by a number of unique situations, viz., economic priorities, high burden of infectious diseases, impoverishment, and absence of a regulatory framework for the disposal of toxic chemicals. This discussion emphasizes the importance of interactions among toxicants, malnutrition, and infectious diseases for both urban and rural populations insofar as these interactions contribute to disease. Toxicants not only produce disease directly but also exacerbate diseases with other causes. Specific examples from developing countries demonstrate how human health effects from exposures to environmental chemicals can be assessed. While they do not strictly fall under the rubric of “developing countries, “ the public health consequences of inadequate control of environmental pollution in the East European countries should demonstrate the magnitude of the problem, except that in developing countries the public health consequence of environmental chemicals will be aggravated by the widespread malnutrition and high prevalence of infectious diseases. Much needs to be done before we can adequately quantify the contribution of environmental chemicals to morbidity and mortality in developing countries with the level of sophistication now evident in the charting of infectious diseases in these countries.

# Title: Infectious Diseases in Clinical Practice

Full Journal Title: Infectious Diseases in Clinical Practic

ISO Abbreviated

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Horn, D.L., Hewlett, D., Alfalla, C., Pella, P., Franchini, D., Peterson, S. and Opal, S.M. (1995), Limited Tolerance of of Ofloxacin and Pyrazinamide Prophylaxis in Health-Care Workers Following Exposure to Rifampin- Isoniazid-Streptomycin-Ethambutol-Resistant Tuberculosis. *Infectious Diseases in Clinical Practice*, **4** (3), 219-225.

Abstract: late October 1991, nosocomial rifampin-isoniazid-streptomycin- ethambutol (RISE)-resistant tuberculosis began to spread in our institution. We investigated prophylaxis with ofloxacin and pyrazinamide for those health care workers whose tuberculin skin test converted after exposure to patients with RISE- resistant tuberculosis. Tolerance and completion rates for 16 such persons were compared with a group of 34 workers receiving isoniazid preventive therapy. In the first group, compliance was lower and adverse reactions were significantly more likely than in the isoniazid group. In the doses used, ofloxacin and pyrazinamide were poorly tolerated by health care workers in our institution. Because of the paucity of suitable alternatives, attempts at prophylaxis with a quinolone and pyrazinamide should still be considered. Alternative dosing regimens or other agents should be evaluated for preventive therapy for isoniazid-, multidrug-, or RISE-resistant tuberculosis

Keywords: AIDS, *Mycobacterium tuberculosis*, Ofloxacin, Outbreak, Patient, Transmission, Tuberculosis

# Title: Infections in Medicine

Full Journal Title: Infections in Medicine

ISO Abbreviated Title: Infect. Med.

JCR Abbreviated Title: Infect Med

ISSN: 0749-6524

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Elsevier Scp Communications Inc

Publisher Address: 134 W 29th St, New York, NY 10001-5304

Subject Categories:

Infectious Diseases: Impact Factor 0.439, / (2001)

? Fox, S. (2003), SARS continues global spread. *Infections in Medicine*, **20** (5), 217.

# Title: Inflammatory Bowel Diseases

Full Journal Title: Inflammatory Bowel Diseases

ISO Abbreviated

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Herfarth, H.H., Osterman, M.I., Isaacs, K.L., Lewis, J.D. and Sands, B.E. (2010), Efficacy of methotrexate in ulcerative colitis: Failure or promise. *Inflammatory Bowel Diseases*, **16** (8), 1421-1430.

Full Text: [2010\Inf Bow Dis16, 1421.pdf](2010/Inf%20Bow%20Dis16,%201421.pdf)

Abstract: Background: Low-dose methotrexate is a widely used and efficacious therapy in chronic inflammatory disorders such as psoriasis and rheumatoid arthritis. Prospective randomized controlled trials have demonstrated the efficacy of parenteral methotrexate in Crohn’s disease (CD). We performed a systematic review of the efficacy of methotrexate in ulcerative colitis (UC) and discuss the results in the context of the known pharmacokinetics and adverse events of methotrexate therapy in inflammatory bowel diseases and other inflammatory conditions. Materials and Methods: We performed a systematic review of the literature in MEDLINE, EMBASE, and Web of Science. All publications describing patients with UC treated with methotrexate were included. Results: We identified 12 studies or retrospective case series and 5 meeting abstracts that met the inclusion criteria. Only I study reported a prospective randomized placebo-controlled trial using methotrexate at a dose of 12.5 mg orally with no significant clinical benefit. However, the majority of uncontrolled retrospective analyses suggest a clinical response to methotrexate therapy in a range of 30%-80% when the drug is applied by parenteral route in doses between 20-25 mg. Conclusions: The only randomized controlled trial of methotrexate in UC employed oral dosing and doses lower than those shown to be effective in CD and did not demonstrate efficacy, whereas uncontrolled, retrospective studies using doses and routes of administration similar to those employed in CD suggest benefit. Well-designed, prospective, placebo-controlled trials of methotrexate in UC are needed.

Keywords: Case Series, Cd, Crohn’S Disease, Disease, Double-Blind, Drug, Efficacy, Inflammatory Bowel Disease, Inflammatory-Bowel-Disease, Israeli Multicenter Trial, Literature, Low-Dose Methotrexate, Maintaining Remission, Methods, Methotrexate, of-the-Literature, Oral Methotrexate, Parenteral Methotrexate, Pediatric Crohns-Disease, Publications, Randomized Controlled Trial, Randomized Controlled Trials, Review, Rheumatoid-Arthritis, Science, Systematic, Systematic Review, Therapy, Ulcerative Colitis, Web of Science

? Khan, N., Abbas, A.M., Whang, N., Balart, L.A., Bazzano, L.A. and Kelly, T.N. (2012), Incidence of liver toxicity in inflammatory bowel disease patients treated with methotrexate: A meta-analysis of clinical trials. *Inflammatory Bowel Diseases*, **18** (2), 359-367.

Full Text: [2012\Inf Bow Dis18, 359.pdf](2012/Inf%20Bow%20Dis18,%20359.pdf)

Abstract: Background: Crohn’s disease and ulcerative colitis are chronic debilitating diseases for which there are multiple treatment options. There are limited data on methotrexate’s efficacy and safety profile. Our aim was to estimate the hepatotoxicity associated with its use in inflammatory bowel diseases (IBDs). Methods: We systematically searched the Medline, Cochrane Library, Web of Science, and EMBASE databases and manually examined references in selected articles for trials that used methotrexate as a treatment for IBDs. Thirteen trials that fulfilled the inclusion and exclusion criteria were included in the meta-analysis. Information on trial and patient characteristics, use of methotrexate as well as other treatments or placebo, and levels of hepatic aminotransferase enzymes were abstracted by two independent investigators using a standardized form. A random effects model was used to pool the incidence rates of reported abnormalities in hepatic aminotransferases. Results: The pooled incidence rate of abnormal hepatic aminotransferase levels (defined as up to a 2-fold increase over the upper limit of the normal range) in patients treated with methotrexate for IBD was 1.4 per 100 person-months, while the rate of hepatotoxicity (defined as greater than a 2-fold over the upper limit of the normal range) was 0.9 per 100 person-months. The rate of withdrawal from treatment due to these abnormalities was 0.8 per 100 person-months. Conclusions: The incidence of methotrexate-related hepatotoxicity as measured by elevation in transaminases and drug withdrawal secondary to elevated transaminases is relatively low.

Keywords: Active Crohns-Disease, Articles, Azathioprine, Clinical Trials, Cochrane, Combining Infliximab, Crohn’s Disease, Databases, Debilitating, Disease, Double-Blind, Drug, Efficacy, Embase, Incidence, Inflammatory Bowel Disease, Inflammatory Bowel Diseases, Israeli Multicenter Trial, Liver Aminotransferase, Low, Medline, Meta Analysis, Meta-Analysis, Methods, Methotrexate, Model, Normal, Patients, Profile, Remission, Resistant, Rheumatoid-Arthritis, Safety, Science, Toxicity, Treatment, Ulcerative Colitis, Ulcerative-Colitis, Web of Science, Web-of-Science

# Title: Informacao & Sociedade-Estudos

Full Journal Title: Informacao & Sociedade-Estudos

ISO Abbreviated

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Graeml, A.R., Macada, M.A. and Rossoni, L. (2010), Intellectuals in social networks and information administration: Scientometric analysis of the period 1997-2006 abstract. *Informacao & Sociedade-Estudos*, **20** (1), 95-110.

Abstract: The purpose of this paper is to identify and analyze the social and intellectual networks in the field of Information Management, trying to understand the social conditioning to knowledge construction in the area. Having the bibliometric data from all papers published in the proceedings of Enanpad (the major yearly management academic conference in Brazil), from 1997 to 2006, scientometric analyses were developed about the academic profile of the Information Management field. Thus, social networks were built based on the authorship information and co-authorship networks, generated from the references adopted, in the proceedings. 339 papers were included in the study, involving 9287 references that were analyzed using UCINET 6 and PAJEK 1.22 software. The social relationships had showed the existence of a still very fragmented co-authoring network, and the main post-graduation courses leading the structuring of the area. Besides, from the analysis of the co-citation network it was possible to identify what is main stream in the area and the relevant topics. Finally, the results made possible to state that the relationship among the researchers first, conditioned the individual intellectual preferences, but later (2002-2006) the influence were broader, conditioning the groups.

Keywords: Authorship, Bibliometric, Bibliometric Data, Bibliometrics, Citation, Co-Authorship, Co-Citation, Collaboration, Groups, Intellectual Networks, Knowledge, Management, Networks, Researchers, Science, Scientometric, Scientometrics, Social Networks, Software, State, Topics

? Vanz, S.A.D. and Stumpf, I.R.C. (2010), Procedures and Tools Applied to Bibliometric Studies. *Informacao & Sociedade-Estudos*, **20** (2), 67-75.

Abstract: Discusses the process of scientific prodution evaluation and the necessary development of indicators for this purpose. Presents sources for data collection for development of scientific production indicators and presents the procedures for cleaning/standardization and organization of bibliometric data. Describes free softwares for bibliometric analysis and the importance of using relative indicators. Discusses some procedures adopted by the international scientific community for multivariate analysis of bibliometric data.

Keywords: Analysis, Author Cocitation Analysis, Bibexcel, Bibliometric, Bibliometric Analysis, Bibliometrics, Brazil, Evaluation, Information, International Scientific Collaboration, Jaccard Index, Pearsons R, Production, Quantitative Analysis, Saltons Cosine, Science, Scientometrics, Similarities Measures, Similarity Measures

? de Moura, A.M.M. and Caregnato, S.E. (2010), Co-classification between articles and patents: A study of the interaction between S & T on Brazilian biotech. *Informacao & Sociedade-Estudos*, **20** (2), 119-132.

Abstract: The article examines the interaction between science and technology (S&T) from a scientometrics perspective, using the technique of co-classification, also used in other studies. It aims at showing the transit of researchers and inventors from the area of Biotechnology in Brazil, from 2001 to 2005, through the scientific and technological spheres by means of the correlation between articles and patents of their own. The corpus is made up of 194 patents and 2584 articles, collected from the INPI Applications for Patents database and the WebofScience, respectively. The correlation between the subjects of the articles and patents was done by a specialist in the area of biotechnology, by mapping the categories proposed by Glanzel and Schubert (2003) and the codes of the International Patent Classification (IPC). The results indicate the area of Biotechnology in Brazil is characterized by an interaction between S&T, as shown by the co-classification between the two types of documents produced by the researchers, reaching a high percentage of interaction.

Keywords: 2001, Biotechnology, Co-Classification, Indicators, Interaction S&T, Patent, Researchers, Science, Scientific Article, Scientometrics, Technology

? Alvarado, R.U. (2010), Scientometric as a scientific field. *Informacao & Sociedade-Estudos*, **20** (3), 41-62.

Full Text: [2010\Inf Soc-Est20, 41.pdf](2010/Inf%20Soc-Est20,%2041.pdf)

Abstract: It explores the possibility that both the elite of authors and those who are at research front, in the area of authors’ productivity or Lotka’s law, are the consequence of their position in the field of Bibliometrics. To achieve this purpose, we adopted the concepts of “habitus”, “cultural capital”, “field”, and “practice theory”, developed by Pierre Bourdieu. When analyzing the formation of the elite and the research front from the perspective of the position occupied by authors, it appears that explanatory variables are the fact that authors devote themselves to teaching as university professors. In addition, taking part in the editorial board of an academic journal, being director of a information center, or leader in an association or professional organization are variables that grant visibility, prestige and authority in the researched area, thence, likely to be cited. From the perspective of the habitus of the authors in the field of Bibliometrics, it was found that having obtained the academic degree of doctor, which somehow ensures the mastery of matrices that make it possible to have familiarity with the doxa of the area, as well as being trained in the statistical, mathematical and scientometric secrets are the variables with the greatest explicative chances.

Keywords: Association, Authors, Authors’ Productivity, Bibliometrics, Cultural Capital, Field, Habitus, Infometrics, Information, Journal, Law, Lotka’s Law, Organization, Productivity, Purpose, Research, Research Front, Scientometric, Scientometrics, Teaching, University, Visibility

# Title: Information Communication & Society

Full Journal Title: Information Communication & Society

ISO Abbreviated

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Raban, D.R., Gordon, A. and Geifman, D. (2011), The information society the development of a scientific specialty. *Information Communication & Society*, **14** (3), 375-399.

Full Text: [2011\Inf Com Soc14, 375.pdf](2011/Inf%20Com%20Soc14,%20375.pdf)

Abstract: This study explains the application of three bibliometric tools for the exploration of the maturity of the information society as a field of research. The authors discovered a disparity between the realization of the information society in everyday life and the state of the research in the area which is at a fairly early stage of evolving into a mature research discipline. Preliminary analysis of the data uncovers the three disciplinary foundations as Library and Information Science, Communication, and Information systems. The Bradford distribution reveals that the core of information society journals is not yet fully established. Journal citation and self-citation patterns lend further support for this and help identify which journals are firmly part of the core and which are less so. Finally, research collaboration patterns demonstrate that this area of research is moving towards disciplinary maturity. The paper concludes with some practical and academic recommendations.

Keywords: Analysis, Application, Authors, Bibliometric, Bibliometric Analysis, Citation, Co-Authorship, Collaboration, Communication, Core and Peripheral Journals, Data, Disciplines, Disparity, Distribution, Field, Field Cohesiveness, Field Maturity, Information, Information Society, Journal, Journals, Library and Information Science, Life, Multiple Authorship, Patterns, Quality, Recommendations, Research, Research Collaboration, Science, Scientific Collaboration, Self-Citation, Society, State, Support, Systems

# Title: Information Communication & Society

Full Journal Title: Information Communication & Society

ISO Abbreviated

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Johnson, I.M. (2011), Bibliometrics and the brain dead. *Information Development*, **27** (2), 92-93.

Full Text: [2011\Inf Dev27, 92.pdf](2011/Inf%20Dev27,%2092.pdf)

Abstract: Many bibliometric and webometric studies are superficial, failing to explore the reasons underlying the phenomenon that they measure. Why do so many LIS researchers show so little curiosity about the context within which information is produced and used? Why do they neglect this opportunity to demonstrate the importance of information to development? What more do teachers need to communicate about the purpose of bibliometrics and how to apply them in an influential way?

Keywords: Bibliometric, Bibliometrics, Development, Library and Information Science Research, Scientometrics, Webometrics

# Title: Information & Management

Full Journal Title: [Information & Management](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5968&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=59e46df62ae76552476ee4cb929cf21f)

ISO Abbreviated Title: Inf. Manage.

JCR Abbreviated Title: Inform Manage-Amster

ISSN: 0378-7206

Issues/Year: 12

Journal Country/Territory: Netherlands

Language: English

Publisher: Elsevier Science BV

Publisher Address: Po Box 211, 1000 Ae Amsterdam, Netherlands

Subject Categories:

Computer Science, Information Systems: Impact Factor 1.299, 14/77 (2002) SCI

Information Science & Library Science: Impact Factor 1.299, 7/55 (2002) SSCI

Management: Impact Factor 1.299, 16/65 (2002) SSCI

Suomi, R. (1993), On the nationality balance of authors and references in selected MIS journals. *Information & Management*, **24** (6), 339-347.

Full Text: [1993\Inf Man24, 339.pdf](1993/Inf%20Man24,%20339.pdf)

Abstract: Citation analysis is an established technique in literature analysis. It can be used to reveal citation patterns and thus results stemming from the analysis, including co-citation patterns and groupings of researchers, even reveal paradigmatic schools within a certain field. In this article, twelve major MIS journals –– six European and six American –– are studied to find out whether there are any differences in author selection and referencing patterns. It was discovered that the American MIS community is much more self-sustaining than the European one, which relies heavily on work by American authors. This points either to the superiority of the American MIS community, or the under-appreciation of foreign research, or possibly both. On the European side, the result might be interpreted as a sign of low-quality research, lack of self-esteem and pride, or again both. Clear differences between the editorial policy of the journals can be discerned: some journals accept the American hegemony; some try to maintain a balance between contributions from different countries; and some favour European research.

Keywords: Authors, Bibliometrics, Citation, Citation Analysis, Co-Citation, Co-Citation Analysis, Communication of Research, Diffusion of IS Research, Diffusion of MIS Research, IS Journal Orientation, IS Literature, IS Research, Journal Stratification, Journals, Literature, Management Information-Systems, MIS, MIS Journal Orientation, MIS Literature, Nationality Issues, Reference Analysis, Referencing, Research, Researchers

# Title: Information Processing & Management

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Bourne, C.P. (1977), Frequency and impact of spelling errors in bibliographic data bases. *Information Processing & Management*, **13** (1), 1-12.

Full Text: [1960-80\Inf Pro Man13, 1.pdf](1960-80/Inf%20Pro%20Man13,%201.pdf)

Abstract: Using a composite sample of over 3600 index terms drawn from 11 different machine-readable bibliographic data bases, estimates were made of the spelling error frequencies of each of these data bases, as well as the frequency of posting to misspelled terms. The terms studied included assigned index terms as well as some terms from titles and abstracts. The frequency of index term misspellings ranged from a high of almost 23% for one data base to a low of less than 1/2% for another data base. The frequency of posting to misspelled terms ranged from about one posting in 8000 citations for one data base, to about one posting in 160 citations in another data base. The impact of these error rates is discussed for the tape supplier, tape user and end user. Some suggestions are given regarding search strategry.

Culnan, M.J. (1979), Literature and bibliometrics: Nicholas, D, Ritchie, M. Clive Bingley Ltd., London 1978. 183 pp. (Published in the United States by Linnet Books, Hamden, Connecticut.) *Information Processing & Management*, **15** (3), 170.

Full Text: [1960-80\Inf Pro Man15, 170.pdf](1960-80/Inf%20Pro%20Man15,%20170.pdf)

? Small, H. (1981), The relationship of information-science to the Social-Sciences - A co-citation analysis. *Information Processing & Management*, **17** (1), 39-50.

Full Text: [1981\Inf Pro Man17, 39.pdf](1981/Inf%20Pro%20Man17,%2039.pdf)

Abstract: A co-citation cluster analysis of a three year (1975–1977) cumulation of the Social Sciences Citation Index is described, and clusters of information science documents contained in this data-base are identified using a journal subset concentration measure. The internal structure of the information science clusters is analyzed in terms of co-citations among clusters, and external linkages to fields outside information science are explored. It is shown that clusters identified by the journal concentration method also cohere in a natural way through cluster co-citation. Conclusions are drawn regarding the relationship of information science to the social sciences, and suggestions are made on how these data might be used in planning an agenda for research in the field.

Hurt, C.D. (1983), A comparison of a bibliometric approach and an historical approach to the identification of important literature. *Information Processing & Management*, **19** (3), 151-157.

Full Text: [1983\Inf Pro Man19, 151.pdf](1983/Inf%20Pro%20Man19,%20151.pdf)

Abstract: This study examines the problem of identification of important literature in a specific scientific area, quantum mechanics. An examination was conducted using two literature sets. The first set was identified using a bibliometric approach and the second was identified using an historical approach. A gamma test of association was employed, resulting in a finding of no significant association between the two files of important literature. Particular attributes of the literature under examination were also studied. These tests supported the finding of no association. Validation testing was done to insure the integrity of the results. The major conclusion in the study was that the use of citation analysis alone or historica analysis alone will not result in the same set of literature being produced. Use of one method singly appears to be risky since the second method of selection produces an entirely different literature. Areas for further investigation of this problem are suggested.

Keywords: Bibliometric

O’Connor, J. (1983), Biomedical citing statements: Computer recognition and use to aid full-text retrieval. *Information Processing & Management*, **19** (6), 361-368.

Full Text: [1983\Inf Pro Man19, 361.pdf](1983/Inf%20Pro%20Man19,%20361.pdf)

Abstract: Citing statements can be used to aid retrieval, to increase the efficiency of citation indexes and for the study of information flow and use. These uses are only feasible on a large scale if computers can identify citing statements within the texts of documents with reasonable accuracy.

Computer recognition of multi-sentence citing statements is not easy. Procedures developed for chemistry papers in an earlier experiment were tested on biomedical papers (dealing with various aspects of cancer) and were almost as successful. Specifically, (1) 78% of the words in computer-recognized citing statements were correctly attributable to the corresponding cited papers; and (2) the computer procedures missed 4% of the words in the actual citing statements. When the procedures were modified on the basis of those results and tested on a new sample of cancer papers the results were comparable: 72 and 3% respectively.

In an earlier experiment in use of full-text searching to retrieve answer-passages from cancer papers, recall in the “test phase” averaged about 70% and the false retrieval rate was thirteen falsely retrieved *sentences* per answer-paper retrieved. Unretrieved answer-papers in that experiment’s “development phase”, and citing statements referring to them, were studied to develop computer procedures for using citing statements to increase recall. The procedures developed only produced slight recall increases for development phase answer-papers, and similarly for the test phase papers on which they were then tested. Specifically, the test phase results were the following: recall was increased from 70 to 74%, and there was no increase in false retrieval. This contrasts with an earlier experiment in which 50% recall of chemistry papers by search of index terms and abstract words was increased to 70% by the addition of words from citing statements. The difference may be because the average number of citing papers per unretrieved cancer paper was only six while that for chemistry papers was thirteen.

Notes: MModel

Brookes, B.C. (1984), Ranking techniques and the empirical log law. *Information Processing & Management*, **20** (1-2), 37-46.

Full Text: [1984\Inf Pro Man20, 37.pdf](1984/Inf%20Pro%20Man20,%2037.pdf)

Abstract: Four empirical laws of bibliometrics––those of anomalous numbers, of Lotka, Zipf and Bradford, together with Laplace’s notorious “law of succession” and de Solla Price’s cumulative advantage distribution, are shown to be almost identical. Some of these laws are expressed as frequency distributions, some are frequency-ranked. A simple model which discriminates these various forms is described. It shows that the frequency forms conform with an inverse square law over the appropriate interval and that the equivalent rank distribution––the Log Law––has the Df

Q (r)=logb(r+l)

where b is the rank interval. It is further shown that frequency distributions discard empirical statistical information which the equivalent rank distributions retain for analysis. So that rank distributions offer theoretical advantages in this field. The paper concludes with comments on the analysis of the empirical hybrid forms which arise. The reduction of the above laws, empirical and hypothetical, to a single law is achieved by NOT equating the ordinals 1st, 2nd, 3rd, .... to the numbers 1, 2, 3, 4. as is commonly done.

Pao, M.L. (1985), Lotka’s law: A testing procedure. *Information Processing & Management*, **21** (4), 305-320.

Full Text: [1985\Inf Pro Man21, 305.pdf](1985/Inf%20Pro%20Man21,%20305.pdf)

Abstract: Instead of the commonly accepted inverse square law, Lotka’s original formulation was based on a more general inverse power law: xn.y = c. The exponent and the constant must be estimated from the given set of author productivity data. A step-by-step outline is presented for testing the applicability of Lotka’s law. Steps include the computation of the values of the exponent and the constant based on Lotka’s method, and the test for significance of the observed frequency distribution against the estimated theoretical distribution derived from Lotka’s formula.

Pao, M.L. and McCreery, L. (1986), Bibliometric application of Markov Chains. *Information Processing & Management*, **22** (1), 7-17.

Full Text: [1986\Inf Pro Man22, 7.pdf](1986/Inf%20Pro%20Man22,%207.pdf)

Abstract: A rudimentary description of Markov chains is presented in order to introduce its use to describe and to predict authors’ movements among subareas of a discipline. Other possible applications are suggested.

Tomer, C. (1986), A statistical assessment of two measures of citation: The impact factor and the immediacy index. *Information Processing & Management*, **22** (3), 251-258.

Full Text: [1986\Inf Pro Man22, 251.pdf](1986/Inf%20Pro%20Man22,%20251.pdf)

Abstract: The dynamics and internal structure of the system of scientific communication are greatly influenced by the varying quality of the primary journals in which scientific information is published. The analysis of citations is among the means by which policy-makers, scientists and librarians seek to achieve a greater understanding of the qualitative forces that affect formal communications in science. This paper reports the findings of an investigation which was conducted in order to determine if either the impact factor or the immediacy index––two derivative measures of citation formulated by Garfield and the Institute for Scientific Information––provide useful insights into the qualitative relations among scientific journals. The results of the investigation, which was concerned with the statistical characteristics of the relationships among the variables forming the basis for the two measures, indicate that the measures are not significant and that the order which either produces among a list of journals is not markedly different than that which is produced when such journals are ranked in terms of uncorrected rates of citation.

Notes: MModel

Nicholls, P.T. (1986), Empirical validation of Lotka’s law. *Information Processing & Management*, **22** (5), 417-419.

Full Text: [1986\Inf Pro Man22, 417.pdf](1986/Inf%20Pro%20Man22,%20417.pdf)

Abstract: Two modifications to the Pao procedure for testing Lotka’s law are proposed and applied to 15 samples drawn from the humanities, social sciences, and sciences.

? Tague, J. and Nicholls, P. (1987), The maximal value of a Zipf size variable sampling properties and relationship to other parameters. *Information Processing & Management*, **23** (3), 155-170.

Full Text: [1987\Inf Pro Man23, 155.pdf](1987/Inf%20Pro%20Man23,%20155.pdf)

Abstract: Because the Zipf size-frequency distribution is used to so often as a mathematical model for bibliometric variables, it is important that the relationships among its parameters and its sampling properties be understood by investigators in this field. This paper examines these relationships and properties. In addition, it provides tables for the sampling distribution of the maximal value of a finite Zipf distribution and an approximation formula for confidence intervals. Confidence limits for the maximal value in a number of previous studies are determined.

Chen, Y.S. and Leimkuhler, F.F. (1987), Analysis of Zipf’s law: An index approach. *Information Processing & Management*, **23** (3), 171-182.

Full Text: [1987\Inf Pro Man23, 171.pdf](1987/Inf%20Pro%20Man23,%20171.pdf)

Abstract: A rigorous analysis of Zipf’s law is made using an index for the sequence of observed values of the variables in a Zipf-type relationship. Three important properties relating rank, count, and frequency are identified. Using this approach, the shape of Zipf-type curves can be described in terms of three distinct regions and two parameters of the Mandelbrot-Zipf law. This result has considerable practical significance, since it provides rigorous foundations for the application of Zipf’s law.

Burton, H.D. (1988), Use of a virtual information system for bibliometric analysis. *Information Processing & Management*, **24** (1), 39-44.

Full Text: [1988\Inf Pro Man24, 39.pdf](1988/Inf%20Pro%20Man24,%2039.pdf)

Abstract: This article defines and discusses bibliometrics, particularly as carried out in automated systems. The specific requirements to which the data should conform in order to support bibliometric analysis are detailed and explained. Examples of earlier bibliometric work are presented, followed by a discussion of efforts supported by the Intelligent Gateway of the University of California’s Lawrence Livermore National Laboratory. Difficulties in doing manual analysis are discussed and the article concludes with a recommendation for greater use of this type of analysis via the increasingly available automated tools.

Notes: MModel

Nicholls, P.T. (1988), Price’s square root law: Empirical validity and relation to Lotka’s law. *Information Processing & Management*, **24** (4), 469-477.

Full Text: [1988\Inf Pro Man24, 469.pdf](1988/Inf%20Pro%20Man24,%20469.pdf)

Abstract: Price’s well-known square root law states that half of the literature on a subject will be contributed by the square root of the total number of authors publishing in that area. Price’s contention is treated here as a hypothesis and assessed against the evidence presented by both empirical and simulated author productivity distributions. The results do not support the square root hypothesis. The problem with Price’s original claim is traced to its basis in Lotka’s law, which is considered as an inverse square law rather than as a generalized model taking variable parameter values. Varying parameter values engender a family of related, but systematically different, distributions in which the nature of inequality in publication productivity, including the size and relative contribution of the most prolific subset of authors, also varies.

Egghe, L. (1988), Mathematical relations between impact factors and average number of citations. *Information Processing & Management*, **24** (5), 567-576.

Full Text: [1988\Inf Pro Man24, 567.pdf](1988/Inf%20Pro%20Man24,%20567.pdf)

Abstract: Instead of the two-year impact factor as used in the *Journal Citation Reports*, there is much m favor of using *x*-year impact factors (*x*>0). These impact factors are studied as a function of *x* and compared with the average number of citations per paper to papers that appeared in the journal *x* years ago. It is shown that both are equal if and only if the derivative of the impact-factor function is zero. Based on this, a simple classification of impact-factor curves versus mean citation curves is established and examples are given. These results are also applied to recent practical data that were obtained by Rousseau.

Hamers, L., Hemeryck, Y., Herweyers, G., Janssen, M., Keters, H., Rousseau, R. and Vanhoutte, A. (1989), Similarity measures in scientometric research: The Jaccard index versus Salton’s cosine formula. *Information Processing & Management*, **25** (3), 315-318.

Full Text: [1989\Inf Pro Man25, 315.pdf](1989/Inf%20Pro%20Man25,%20315.pdf)

Abstract: It is shown that in most practical cases Salton’s cosine formula yields a numerical value that is twice Jaccard’s index.

Notes: MModel

Chen, Y.S. (1989), Analysis of Lotka’s law: The Simon-Yule approach. *Information Processing & Management*, **25** (5), 527-544.

Full Text: [1989\Inf Pro Man25, 527.pdf](1989/Inf%20Pro%20Man25,%20527.pdf)

Abstract: A major difficulty in using the well-known Lotka’s law in information science is in the estimation of parameters. In this paper, we argue that the difficulty arises from the misuse of goodness-of-fit tests. As an alternative, we adopt Simon’s five-step modeling process for the study of Lotka’s law. Three significant contributions can be identified. First, an index approach is used to identify a general formulation of Lotka’s law. Second, a time series approach is used to identify two influential variables associated with the empirical data. Third, the constructive mechanism proposed by Simon is used to derive a distribution resembling the general formulation of Lotka’s law. Further research on refining the constructive mechanism is suggested.

Notes: JJournal

Zmaić, L., Maričić, S. and Simeon, V. (1989), Visibility of peripheral journals through the Science Citation Index. *Information Processing & Management*, **25** (6), 713-719.

Full Text: [1989\Inf Pro Man25, 713.pdf](1989/Inf%20Pro%20Man25,%20713.pdf)

Abstract: The effect of the inclusion of a journal into the SCI source journals selection on the journal’s “visibility” was studied by analyzing the number of independent citations of the articles published in two journals (*Croatica Chemica Acta* (CCA) and *Roczniki Chemii*(RC)) in two periods. The “echo factor, “ i.e. the citation count normalized by the size of CCA and RC publication source pools and of SCI citing pool, did not show any increase upon the inclusion of either of the two journals into SCI selection: for CCA it even showed a decrease and for RC remained essentially constant. A statistically significant increase in the SCI citing pool, that took place around 1976, was also noticed.

Rousseau, R. (1989), Constraint propagation applied to citation analysis: An example. *Information Processing & Management*, **25** (6), 721-725.

Full Text: [1989\Inf Pro Man25, 721.pdf](1989/Inf%20Pro%20Man25,%20721.pdf)

Abstract: A simple numeric constraint-propagation technique is applied to impact factors of scientific journals. This eliminates part of the irregular behavior of this bibliometric measure.

Qiu.L.W. (1990), An empirical examination of the existing models for Bradford’s law. *Information Processing & Management*, **26** (5), 655-672.

Full Text: [1990\Inf Pro Man26, 655.pdf](1990/Inf%20Pro%20Man26,%20655.pdf)

Abstract: All the existing models for Bradford’s law were summarized and classified into different categories (e.g., rank-frequency cumulative, rank-frequency noncumulative, size-frequency, and other forms). The relationships between some models were established by mathematical deduction. Nineteen data sets were used to estimate the parameters of the models and then goodness of fit tests were conducted to identify empirically the model in each category which can best describe the phenomenon of journal productivity.

Todorov, R. and Glaenzel, W. (1990), Computer bibliometrics for journal classification. *Information Processing & Management*, **26** (5), 673-680.

Full Text: [1990\Inf Pro Man26, 673.pdf](1990/Inf%20Pro%20Man26,%20673.pdf)

Abstract: Data on article distributions over journal titles and subject subdivisions of a selected field could be extracted (on- or offline) from every bibliographic file including a classification scheme. On the basis of such data, journals could be subdivided into specialized, average, or general using an appropriate measure of dispersion (or concentration). To this end, Pratt’s absolute measure of dispersion *q* = σr\* *F*r, is suggested, where the *F*r, represent the relative frequencies (in descending order) of articles from a given journal in the unidentified subject subdivisions with rank *r* = 1, 2, ..., *n*. In order to separate specialized and general journals from average ones, it is assumed that each empirical *q*-value has a ‘random’ deviation *d*. A w-statistic is introduced to test whether the *q*-values differ significantly from the average *q*av on a specified confidence level, where *w* = (*q* –– *qav*)/*d*. In addition, a subject relative measure of dispersion *Q* is used to determine which subdivisions are favored by which journals. Another *w*-statistic is proposed to test whether the *Q*-values differ significantly from *Q*s (absolute measure of dispersion of the subject distribution). This bibliometric technique is applied to data from the 1984 INSPEC file. The results could help library staff and information scientists in classifying journals according to the two measures of article dispersion over subject subdivisions.

Notes: MModel

Kinnucan, M.T. and Wolfram, D. (1990), Direct comparison of bibliometric models. *Information Processing & Management*, **26** (6), 777-790.

Full Text: [1990\Inf Pro Man26, 777.pdf](1990/Inf%20Pro%20Man26,%20777.pdf)

Abstract: This study describes a technique for statistically comparing bibliometric models, and illustrates its use with three different examples. The technique is based on the idea of comparing full and restricted models as developed in analysis of variance, regression, and log-linear models. In bibliometrics, any two models where one is a special case of the other can be thought of as a full model and a restricted model. One can use the likelihood-ratio chi-square statistic, which has gained acceptance with log-linear models, as a test statistic to directly compare the full model and the restricted model. The first two examples involved Lotka’s law. In the first example we investigated the feasibility of applying a single set of global parameter values to eight different author productivity distributions drawn from two different disciplines. In the second example we looked at whether or not a finite maximum productivity level was necessary as an additional parameter in Lotka-type models of author productivity. The final example compared three different forms of a model of library circulation frequencies.

Notes: MModel

Nath, R. and Jackson, W.M. (1991), Productivity of management information systems researchers: Does Lotka’s law apply? *Information Processing & Management*, **27** (2-3), 203-209.

Full Text: [1991\Inf Pro Man27, 203.pdf](1991/Inf%20Pro%20Man27,%20203.pdf)

Abstract: By examining 899 Management Information Systems (MIS) research articles published in ten journals between 1975 and 1987, it is shown that while Lotka’s inversesquare law relating the number of authors of papers to the number of papers written by each author does not apply, a generalized version of Lotka’s law referred to as the inverse-power law fits remarkably well.

Keywords: Co-Citation Analysis, MIS, Science, Scientific Productivity

Tague-Sutcliffe, J. (1992), An introduction to informetrics. *Information Processing & Management*, **28** (1), 1-3.

Full Text: [1992\Inf Pro Man28, 1.pdf](1992/Inf%20Pro%20Man28,%201.pdf)

Abstract: The scope and significance of the field of informetrics is defined and related to the earlier fields of bibliometrics and scientometrics. The phenomena studied by informetricians are identified. The major contributors to the field in the past are described and current emphases are related to the contributions in this Special Issue.

? Sichel, H.S. (1992), Anatomy of the generalized inverse Gaussian-poisson distribution with special applications to bibliometric studies. *Information Processing & Management*, **28** (1), 5-17.

Full Text: [1992\Inf Pro Man28, 5.pdf](1992/Inf%20Pro%20Man28,%205.pdf)

Abstract: The vast number of observed bibliometric and scientometric datasets display a definite downward deviation from a straight line in the upper tail, when plotted in a double logarithmic coordinate grid. For this reason customary theoretical distribution laws are very poor representations of the observed phenomena. This disadvantage also extends to recently suggested models such as the Yule, the two- and the three-parameter Waring distributions. The main types of the GIGP distribution are described and two important limiting cases are discussed. The constrained minimum x2 method is developed for the estimation of the three parameters α, b, and γ. Finally it is argued that the Kolmogorov-Smirnov goodness-of-fit test is not applicable in the field of bibliometrics.

Burrell, Q.L. (1992), The Gini Index and the Leimkuhler Curve for Bibliometric Processes. *Information Processing & Management*, **28** (1), 19-33.

Full Text: [1992\Inf Pro Man28, 19.pdf](1992/Inf%20Pro%20Man28,%2019.pdf)

Abstract: It has recently been emphasized that the Leimkuhler curve and the Gini index are valuable in giving respectively graphical and numerical summaries of the concentration of bibliometric distributions. In this paper these tools are further investigated from a probabilistic viewpoint. In particular, the importance of the time parameter and the special nature of the “nonproducers” in bibliometric studies are highlighted.

Keywords: Bibliometric, Distributions, Model, Science

? Bekavac, A., Petrak, J. and Buneta, Z. (1994), Citation behavior and place of publication in the authors from the scientific periphery: A matter of quality. *Information Processing & Management*, **30** (1), 33-42.

Full Text: [1994\Inf Pro Man30, 33.pdf](1994/Inf%20Pro%20Man30,%2033.pdf)

Abstract: This research examines the communication pattern of a selected group of Croatian scientists in the field of biomedicine related to citing articles published in domestic sources. It studies a possible difference in attitude of Croatian scientists toward domestic and international journals. The research included as analysis of references and a survey of authors. Using 1988 and 1989 Science Citation Index on compact disc, as well as a sample of domestic journals and domestic journals covered by Science Citation Index, we identified papers by Croatian authors and confirmed that the same authors apply different criteria in citing relevant literature, depending on the type (domestic or foreign) of the journal in which they are to publish their paper. Domestic literature is cited four times less often in foreign than in domestic journals, so there is a complete absence of national bias in citing earlier literature by the same authors. The relationship between citation behavior and place of publication could be related to the general approach of Croatian biomedical authors to domestic and international journals, and could be indicative of a poor quality of scientific papers published in domestic journals.

Keywords: Journals

Notes: MModel

Stewart, J.A. (1994), The poisson-lognormal model for bibliometric/scientometric distributions. *Information Processing & Management*, **30** (2), 239-251.

Full Text: [1994\Inf Pro Man30, 239.pdf](1994/Inf%20Pro%20Man30,%20239.pdf)

Abstract: The Poisson-lognormal model assumes that the intensity parameter of a Poisson process has a lognormal distribution in a sample of observations. This model can yield highly skewed, discrete distributions, but must be estimated by numerical methods. When applied to many of the empirical data sets related to the ‘laws’ of Lotka, Bradford, and Zipf, this compound Poisson model produces good to excellent fits. Discussion includes possible ‘causal’ processes and some implications for future bibliometric and scientometric studies.

Keywords: Bradford’s Law, Citation Analysis, Index Approach, Inequality, Lotka’s Law, Parameters, Science, Scientific Productivity, Zipf’s Law

Bédécarrax, C. and Huot, C. (1994), A new methodology for systematic exploitation of technology databases. *Information Processing & Management*, **30** (3), 407-418.

Full Text: [1994\Inf Pro Man30, 407.pdf](1994/Inf%20Pro%20Man30,%20407.pdf)

Abstract: Nowadays technology watch must be considered as a strategic tool for business enterprises. The increase of database volume has forced a change in information management. The purpose of this article is to explain how a mathematical data analysis method can help to transform sequential raw data into valuable information.

Keywords: Technology Watch, Relational Analysis, Patents, Bibliometrics, Database, Automatic Classification, Strategic Information

Notes: MModel

Chen, Y.S., Chong, P.P. and Tong, M.Y. (1994), The Simon-Yule approach to bibliometric modeling. *Information Processing & Management*, **30** (4), 535-556.

Full Text: [1994\Inf Pro Man30, 535.pdf](1994/Inf%20Pro%20Man30,%20535.pdf)

Abstract: Using an index approach to take into account the scattering pattern of the observed values, Chen and Leimkuhler showed that the three well-known bibliometric distributions (i.e., Lotka’s law of scientific productivity, Bradford’s law of bibliographic scattering, and Zipf’s law of word frequency) are equivalent. Furthermore, Chen showed that Lotka’s law can be derived from a generating mechanism (the Simon-Yule Model) proposed by Herbert A. Simon. In this paper, we use a simulation algorithm based on the Simon-Yule model to conduct computational experimentation on these three laws. The results indicate that the probability of a new entry (α), be it constant or decreasing, determines the characteristics of all three distributions.

Notes: TTopic

Zhang, H.Q. (1995), A bibliometric study on articles of medical librarianship. *Information Processing & Management*, **31** (4), 499-510.

Full Text: [1995\Inf Pro Man31, 499.pdf](1995/Inf%20Pro%20Man31,%20499.pdf)

Abstract: Three medical library periodicals published in China, Japan and U.S.A. were selected for this study. During the years 1990-1992, 36 issues, 410 articles, and 2915 cited references were compared to find each country’s trends of research in medical library and information services by way of a bibliometric method. The citation characteristics in the periodicals provided evidence that differences were likely attributable to the fact that the three periodicals were published in different countries.

Havemann, F. (1996), Changing publication behaviour of East and Central European scientists and the impact of their papers. *Information Processing & Management*, **32** (4), 489-496.

Full Text: [1996\Inf Pro Man32, 489.pdf](1996/Inf%20Pro%20Man32,%20489.pdf)

Abstract: In the past many scientists in the former socialist countries could not always freely communicate with their Western colleagues. It was often difficult for them to publish in Western journals or to participate in international conferences if they were not held in the East. So some of their results were little known in the West. The flow of scientific information was restrained by political, financial and cultural barriers. Some barriers are lower today, and changing bibliometric indicators should reflect the transformation processes. How often, for example, Eastern scientists have published articles in leading international journals of their field could be an appropriate indicator. In the present study I have investigated for the period 1980-1994 the cases of the journals *Physical Review A*, *B*, *C*, *D*, and *E*, published in New York, to get an impression how the publication behaviour of East and Central European scientists has changed. Could Eastern research groups which changed their publication behaviour increase the impact of their papers? The citation rates of two groups of Russian physicists have been considered to yield an answer to this question.

Keywords: Natural Sciences Computing, Information Dissemination, Technical Presentations, Information Management, Information Analysis, Personnel, Information Services, European Scientists, Scientific Information, International Conferences, Publication

Bates, M.J. (1996), Document familiarity, relevance, and bradford’s law: The getty online searching project report no. 5. *Information Processing & Management*, **32** (6), 697-707.

Full Text: [1996\Inf Pro Man32, 697.pdf](1996/Inf%20Pro%20Man32,%20697.pdf)

Abstract: The Getty Online Searching Project studied the end-user searching behavior of 27 humanities scholars over a 2-year period. Surprising results were that a number of scholars anticipated––and found––that they were already familiar with a very high percentage of the records their searches retrieved. Previous familiarity with documents has been mentioned in discussion of relevance and information retrieval (IR) theory, but it has generally not been considered a significant factor. However, these experiences indicate that high document familiarity can be a significant factor in searching. Some implications are drawn regarding the impact of high document familiarity on relevance and IR theory. Finally, some speculations are made regarding high document familiarity and Bradford’s Law.

Notes: CCountry

Zhang, H. and Zhang, Y. (1997), Scientometric study on research performance in China. *Information Processing & Management*, **33** (1), 81-89.

Full Text: [1997\Inf Pro Man33, 81.pdf](1997/Inf%20Pro%20Man33,%2081.pdf)

Abstract: Research performance in China has increased appreciably during the past few years, both in regard to relative output of publications and in their impact on the international research productivity. The purpose of this survey, based on the data recorded in the Science Citation Index (SCI) database between 1987 and 1993, is to study the research performance in the People’s Republic of China. The 35, 087 papers published in domestic or foreign periodicals were selected for analysis and evaluation of the distribution of publications and citations, for the numerical characterization of research performance in China. The findings indicate that 17, 687 papers covered by the Source Indexes of the SCI in the period 1990-1992 had received 7944 citations in the year 1993 and that the mean citation rate is 0.45. The number of cited papers is 4491 and the proportion of cited papers to the total is 0.25.

Notes: TTopic

Reid, E.O.F. (1997), Evolution of a body of knowledge: An analysis of terrorism research. *Information Processing & Management*, **33** (1), 91-106.

Full Text: [1997\Inf Pro Man33, 91.pdf](1997/Inf%20Pro%20Man33,%2091.pdf)

Abstract: This study provides an analysis of the development of contemporary terrorism research in the United States. Using on-line bibliometrics, tracing and citation analysis, it explores how terrorism researchers interacted with other knowledge producers to shape the perception of terrorism. The results indicate that the research area was influenced directly by knowledge producers such as the media and the U.S. government. They had major impacts on the definitions of terrorism, the types of data used in analysis, and the diffusion of ideas. This resulted in the creation of invisible colleges of pro-western terrorism researchers and generation of many terrorism studies from a one-sided perspective of terrorism from below (small insurgent groups).

Kostoff, R.N., Eberhartt H.J. and Toothman, D.R. (1998), Database tomography for technical intelligence: A roadmap of the near-earth space science and technology literature. *Information Processing & Management*, **34** (1), 69-85.

Full Text: [1998\Inf Pro Man34, 69.pdf](1998/Inf%20Pro%20Man34,%2069.pdf)

Abstract: Database Tomography (DT) is a system which includes algorithms for extracting multi-word phrase frequencies and performing phrase proximity analyses (relating physical closeness of the multi-word technical phrases to thematic relationships) on any type of large textual database. As an illustration of the DT process applied to the published literature, DT was used to derive technical intelligence from a near-earth space (NES) database derived from the Science Citation Index and the Engineering Compendex. Phrase frequency analysis (the occurrence frequency of multi-word technical phrases) provided the pervasive technical themes of the space database, and the phrase proximity analysis provided the relationships among the pervasive technical themes. Bibliometric analysis of the NES literature supplemented the DT results by identifying: the recent most prolific NES authors; the journals which contain numerous NES papers; the institutions which produce numerous NES papers; the keywords most frequently specified by the NES authors; the authors whose works are cited most frequently in the NES papers; and the particular papers and journals cited most frequently in the NES papers.

Keywords: Database Systems, Computerized Tomography, Information Retrieval, Technology, Computational Linguistics, Text Processing, Database Tomography, Technical Intelligence, Near Earth Space Database, Phrase Frequency Analysis

Notes: MModel

Gupta, B.M., Sharma, L. and Kumar, S. (1998), Literature growth and author productivity patterns in Indian Physics. *Information Processing & Management*, **34** (1), 121-131.

Full Text: [1998\Inf Pro Man34, 121.pdf](1998/Inf%20Pro%20Man34,%20121.pdf)

Abstract: Studies the growth of Indian and World physics literature from 1900-50. Explores the applicability of selected technology diffusion models to the growth of literature in Indian and World physics. Focuses on the applicability and validity of two forms of Lotka’s Law and negative binomial distribution model to the cumulative author productivity data on Indian physics. Looks at the linkages between inequality/concentration measures and development of Indian physics as a discipline. Explores the relevance and applicability of two well known generalisations, Price Square Root Law and 80/20 Rule to the cumulative author productivity data on Indian physics. Studies the increase in the number of practitioners, at different productivity levels, and the emergence of core authors in Indian physics.

Tahai, A. and Rigsby, J.T. (1998), Information processing using citations to investigate journal influence in accounting. *Information Processing & Management*, **34** (2-3), 341-359.

Full Text: [1998\Inf Pro Man34, 341.pdf](1998/Inf%20Pro%20Man34,%20341.pdf)

Abstract: The first objective of this study is to investigate the durability or “staying power” of accounting research in representative scholarly journals by evaluating the extent and usage of previous literature in current literature. The value or durability of research can be represented by the pattern of citation vintages that typifies a body of literature. We use the generalized gamma distribution and its four nested models (exponential, Weibull, gamma, and log-normal) to determine a mean, median, and mode for citation age. A second and significant motivation of the study is to objectively rank the relative influence of journals on the accounting literature. Three variations of an impact factor are used to make this analysis. The first impact factor is based upon simple citation count using the proportional method, while the other two impact factors use the results of the time analysis of the data to improve the method of ranking through the emphasis of current publications.

Notes: TTopic

Álvarez, P. and Pulgarín, A. (1998), Equating research production in different scientific fields. *Information Processing & Management*, **34** (4), 465-470.

Full Text: [1998\Inf Pro Man34, 465.pdf](1998/Inf%20Pro%20Man34,%20465.pdf)

Abstract: Diffusion in a scientific field is regarded as the dissemination of knowledge, channeled through citations that are distributed over different periods of time and propagated by means of scientific journals. Here it is considered to be a latent variable defined by a particular set of items (the citations made in different fields) and the Quantum Measurement technique is used as an instrument for measuring that variable on an objective scale. The different scientific fields thereby equiparated according to their diffusion. The citations generated by articles belonging to these fields were collected from the SCI/SSCI JCR of ISI (Science Citation Index/Social Science Citation Index Journal Citation Reports of Institute for Scientific Information). The final result is an equivalence table of citations between the areas of research.

Keywords: Information Management, Publishing, Equivalence Classes, Natural Sciences Computing, Information Analysis, Scientific Journals, Quantum Measurement Technique, Equivalence Table

Notes: MModel

Huber, J.C. (1998), The underlying process generating Lotka’s law and the statistics of exceedances. *Information Processing & Management*, **34** (4), 471-487.

Full Text: [1998\Inf Pro Man34, 771.pdf](1998/Inf%20Pro%20Man34,%20771.pdf)

Abstract: Lotka’s Law is a widely observed distribution of authors of scholarly papers and patents. Numerous studies over the past seventy years have found Lotka’s Law describes production in fields as diverse as chemistry, economics, history, information science, musicology, patents and psychology. But previously the parameters for Lotka’s Law were not linked to variables that could be measured or estimated during an individual’s career. Here we show that the statistics of exceedances generates Lotka’s Law. Specifically, the Frequency of production (papers or patents per year) and Lifetime (career duration) are exponentially distributed random variables. Empirical, phenomenological and mathematical development shows that, when suitably weighted, the product of Frequency and Lifetime produces Lotka’s Law.

Keywords: Development, Distribution, Distributions, Duration, Economics, History, Information, Information Science, Parameters, Patents, Precision, Process, Production, Productivity, Psychology, Publication, Science, Scientific Participation, Speed, Statistics

Notes: MModel

Kumar, S., Sharma, P. and Garg, K.C. (1998), Lotka’s law and institutional productivity. *Information Processing & Management*, **34** (6), 775-783.

Full Text: [1998\Inf Pro Man34, 775.pdf](1998/Inf%20Pro%20Man34,%20775.pdf)

Abstract: The present study aims at determining the applicability of Lotka’s law, negative binomial distribution and lognormal distribution for institutional productivity, in the same way as it is to authors and their productivity in the field of engineering sciences and the patents filed by industrial firms in laser S&T. The study indicates that non of the three distributions are applicable for institutional productivity in engineering sciences. However, Lotka’s law holds good for full as well as truncated set of data for the patents filed by industrial firms.

Keywords: Distribution, Distributions, Engineering, Industrial, Law, Lotka’s Law, Nigeria, Patents, Patterns, Productivity, Science, Sciences

Glänzel, W. and Schoepflin, U. (1999), A bibliometric study of reference literature in the sciences and social sciences. *Information Processing & Management*, **35** (1), 31-44.

Full Text: [1999\Inf Pro Man35, 31.pdf](1999/Inf%20Pro%20Man35,%2031.pdf)

Abstract: In earlier papers the authors focused on differences in the ageing of journal literature in science and the social sciences. It was shown that for several fields and topics bibliometric standard indicators based on journal articles need to be modified in order to provide valid results. In fields where monographs, books or reports are important means of scientific information, standard models of scientific communication are not reflected by journal literature alone. To identify fields where the role of non-serial literature is considerable or critical in terms of bibliometric standard methods, the totality of the bibliographic citations indexed in the 1993 annual cumulation of the SCI and SSCI databases, have been processed. The analysis is based on three indicators, *the* *percentage of references to serials*, *the mean references age*, and *the* *mean reference rate*. Applications of these measures at different levels of aggregation (i.e., to journals in selected science and social science fields) lead to the following conclusions. 1. The percentage of references to serials proved to be a sensitive measure to characterise typical differences in the communication behaviour between the sciences and the social sciences. 2. However, there is an overlap zone which includes fields like mathematics, technology oriented science, and some social science areas. 3. In certain social sciences part of the information seems even to be originated in non-scientific sources: references to non-serials do not always represent monographs, pre-prints or reports. Consequently, the model of information transfer from scientific literature to scientific (journal) literature assumed by standard bibliometrics requires substantial revision before valid results can be expected through its application to social science areas.

Notes: TTopic, JJournal

Ding, Y., Chowdhury, G.G. and Foo, S. (2001), Bibliometric cartography of information retrieval research by using co-word analysis. *Information Processing & Management*, **37** (6), 817-842.

Full Text: [2001\Inf Pro Man37, 817.pdf](2001/Inf%20Pro%20Man37,%20817.pdf)

Abstract: The aim of this study is to map the intellectual structure of the field of Information Retrieval (IR) during the period of 1987-1997. Co-word analysis was employed to reveal patterns and trends in the IR field by measuring the association strengths of terms representative of relevant publications or other texts produced in IR field. Data were collected from Science Citation Index (SCI) and Social Science Citation Index (SSCI) for the period of 1987-1997. In addition to the keywords added by the SCI and SSCI databases, other important keywords were extracted from titles and abstracts manually. These keywords were further standardized using vocabulary control tools. In order to trace the dynamic changes of the IR field, the whole 11-year period was further separated into two consecutive periods: 1987-1991 and 1992-1997. The results show that the IR field has some established research themes and it also changes rapidly to embrace new themes. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Co-Word Analysis, Information Retrieval Research, Research Trends, Science Citation Index, Social Science Citation Index, Neural-Network Research, Science Maps, Scientometrics, Technology, Representations, Model

Notes: JJournal

He, Y. and Hui, S.C. (2002), Mining a Web Citation Database for author co-citation analysis. *Information Processing & Management*, **38** (4), 491-508.

Full Text: [2002\Inf Pro Man38, 491.pdf](2002/Inf%20Pro%20Man38,%20491.pdf)

Abstract: Author co-citation analysis (ACA) has been widely used in bibliometrics as an analytical method in analyzing the intellectual structure of science studies. It can be used to identify authors from the same or similar research fields. However, such analysis method relies heavily on statistical tools to perform the analysis and requires human interpretation. Web Citation Database is a data warehouse used for storing citation indices of Web publications. In this paper, we propose a mining process to automate the ACA based on the Web Citation Database. The mining process uses agglomerative hierarchical clustering (AHC) as the mining technique for author clustering and multidimensional scaling (MDS) for displaying author cluster maps. The clustering results and author cluster map have been incorporated into a citation-based retrieval system known as PubSearch to support author retrieval of Web publications.

Keywords: Author Co-Citation Analysis, Data Mining, Web Citation Database, Intelligent Information Retrieval

Tsai, B.S. (2003), Information landscaping: Information mapping, charting, querying and reporting techniques for total quality knowledge management. *Information Processing & Management*, **39** (4), 639-664.

Full Text: [2003\Inf Pro Man39, 639.pdf](2003/Inf%20Pro%20Man39,%20639.pdf)

Abstract: Information landscaping––an integration of information mapping, charting, querying and reporting techniques––has been developed to enable the construction of a total quality knowledge management system focusing on a particular subject information field. The techniques apply five major parameters of the Fuzzy commonality model (FCM) including unionization, quantity, continuity or stability, changeability, and critical probability, to construct a series of information maps (infomaps) and a set of chronological-statistical charts (infocharts). The infomaps and infocharts are used as the blueprints and navigation agents for building and developing a web-based subject experts depository and query–report system. Focusing on the subject experts/expertise, this system enables a researcher to expedite a query search through infomaps (qualitative reference) and infocharts (quantitative reference). The entropy measurement and the entropy constant (the square root of the average entropy measure) are calculated to compare with the critical probability of the FCM. This leads to the finding of a set of regression straight lines and the establishment of an information oscillogram. The tropics (upper limit, middle range, lower limit), and the potential/solstitial population and its growth rate within a subject information domain during a particular time period can be determined. They can effectively and efficiently guide librarians and information professionals towards the construction and the continuous development of an electronic collection. The cultivation of a virtual learning and referencing environment can also be created by utilizing this data.

Keywords: Bibliometrics and Informetrics, Citation Mining, Information Landscaping, Information Mapping, Knowledge Management

Lin, X., White, H.D., and Buzydlowski, J. (2003), Real-time author co-citation mapping for online searching. *Information Processing & Management*, **39** (5), 689-706.

Full Text: [2003\Inf Pro Man39, 689.pdf](2003/Inf%20Pro%20Man39,%20689.pdf)

Abstract: Author searching is traditionally based on the matching of name strings. Special characteristics of authors as personal names and subject indicators are not considered. This makes it difficult to identify a set of related authors or to group authors by subjects in retrieval systems. In this paper, we describe the design and implementation of a prototype visualization system to enhance author searching. The system, called AuthorLink, is based on author co-citation analysis and visualization mapping algorithms such as Kohonen’s feature maps and Pathfinder networks. AuthorLink produces interactive author maps in real time from a database of 1.26 million records supplied by the Institute for Scientific Information. The maps show subject groupings and more fine-grained intellectual connections among authors. Through the interactive interface the user can take advantage of such information to refine queries and retrieve documents through point-and-click manipulation of the authors’ names.

Keywords: Author Co-Citation Analysis, Information Retrieval Systems, Author Searching, Kohonen Feature Maps, Pathfinder Networks

Burrell, Q.L. (2003), Age-specific citation rates and the Egghe-Rao function. *Information Processing & Management*, **39** (5), 761-770.

Full Text: [2003\Inf Pro Man39, 761.pdf](2003/Inf%20Pro%20Man39,%20761.pdf)

Abstract: Burrell (Scientometrics, 55 (2003) in press) has pointed out certain similarities between retrospective citation age studies and reliability theory. Here we extend these connections by considering the so-called failure rate function from reliability which is re-interpreted as the age-specific citation rate (ASCR). This is linked to earlier studies of retrospective citation distributions by Egghe and Ravichandra Rao (Information Processing and Management 28 (1992) 201) who introduced a function claimed to correspond to what they termed the (discrete time) obsolescence or ageing function. Further analysis reveals that their function is essentially one whose behaviour reflects that of the ASCR. (C) 2002 Elsevier Ltd. All rights reserved

Keywords: Age- Specific Citation Rate, Egghe-Rao Function, Failure Rate, Graphical Methods, Obsolescence, Retrospective Citation Age Distributions, Science

Liu, Z.M. (2003), Trends in transforming scholarly communication and their implications. *Information Processing & Management*, **39** (6), 889-898.

Full Text: [2003\Inf Pro Man39, 889.pdf](2003/Inf%20Pro%20Man39,%20889.pdf)

Abstract: Scholarly communication is undergoing transformation under the confluence of many forces. The purpose of this article is to explore trends in transforming scholarly publishing and their implications. It examines how collaboration and volume of information production were changed over the past century. It also explores how older documents are used under today’s network environment where new information is easily accessible. Understanding these trends would help us design more effective electronic scholarly publishing systems and digital libraries, and serve the needs of scholars more responsively.

Keywords: Scholarly Publishing, Authorship, Citation Analysis, Digital Library

Notes: MModel

Pulgarín, A. and Gil-Leiva, I. (2004), Bibliometric analysis of the automatic indexing literature: 1956–2000. *Information Processing & Management*, **40** (2), 365-377.

Full Text: [2004\Inf Pro Man40, 365.pdf](2004/Inf%20Pro%20Man40,%20365.pdf)

Abstract: We present a bibliometric study of a corpus of 839 bibliographic references about automatic indexing, covering the period 1956–2000. We analyse the distribution of authors and works, the obsolescence and its dispersion, and the distribution of the literature by topic, year, and source type. We conclude that: (i) there has been a constant interest on the part of researchers; (ii) the most studied topics were the techniques and methods employed and the general aspects of automatic indexing; (iii) the productivity of the authors does fit a Lotka distribution (*D*max=0.02 and criticalvalue=0.054); (iv) the annual aging factor is 95%; and (v) the dispersion of the literature is low.

Keywords: Automatic Indexing, Scientific Output, Bibliometric Analysis, Bradford’s Law, Obsolescence

Pulgarín, A. and Gil-Leiva, I. (2004), Finding similar academic Web sites with links, bibliometric couplings and colinks. *Information Processing & Management*, **40** (3), 515-526.

Full Text: [2004\Inf Pro Man40, 515.pdf](2004/Inf%20Pro%20Man40,%20515.pdf)

Abstract: A common task in both Webmetrics and Web information retrieval is to identify a set of Web pages or sites that are similar in content. In this paper we assess the extent to which links, colinks and couplings can be used to identify similar Web sites. As an experiment, a random sample of 500 pairs of domains from the UK academic Web were taken and human assessments of site similarity, based upon content type, were compared against ratings for the three concepts. The results show that using a combination of all three gives the highest probability of identifying similar sites, but surprisingly this was only a marginal improvement over using links alone. Another unexpected result was that high values for either colink counts or couplings were associated with only a small increased likelihood of similarity. The principal advantage of using couplings and colinks was found to be greater coverage in terms of a much larger number of pairs of sites being connected by these measures, instead of increased probability of similarity. In information retrieval terminology, this is improved recall rather than improved precision.

Keywords: Document Clustering, Webmetrics, Web Information Retrieval

Lai, K.K. and Wu, S.J. (2005), Using the patent co-citation approach to establish a new patent classification system. *Information Processing & Management*, **41** (2), 313-330.

Full Text: [2005\Inf Pro Man41, 313.pdf](2005/Inf%20Pro%20Man41,%20313.pdf)

Abstract: The paper proposes a new approach to create a patent classification system to replace the IPC or UPC system for conducting patent analysis and management. The new approach is based on co-citation analysis of bibliometrics. The traditional approach for management of patents, which is based on either the IPC or UPC, is too general to meet the needs of specific industries. In addition, some patents are placed in incorrect categories, making it difficult for enterprises to carry out R&D planning, technology positioning, patent strategy-making and technology forecasting. Therefore, it is essential to develop a patent classification system that is adaptive to the characteristics of a specific industry. The analysis of this approach is divided into three phases. Phase I selects appropriate databases to conduct patent searches according to the subject and objective of this study and then select basic patents. Phase II uses the co-cited frequency of the basic patent pairs to assess their similarity. Phase III uses factor analysis to establish a classification system and assess the efficiency of the proposed approach. The main contribution of this approach is to develop a patent classification system based on patent similarities to assist patent manager in understanding the basic patents for a specific industry, the relationships among categories of technologies and the evolution of a technology category.

Keywords: Patent Management, Patent Classification System, Co-Citation, Bibliometrics

? Egghe, L. (2005), Expansion of the field of informetrics: Origins and consequences. *Information Processing & Management*, **41** (6), 1311-1316

Full Text: [2005\Inf Pro Man41, 1311.pdf](2005/Inf%20Pro%20Man41,%201311.pdf)

Keywords: Authorship, Bibliometrics, Documents, Laws, Ordered Sets, Scientometrics, Strong Similarity Measures, World-Wide-Web

? Zhao, D.Z. (2005), Challenges of scholarly publications on the Web to the evaluation of science: A comparison of author visibility on the Web and in print journals. *Information Processing & Management*, **41** (6), 1403-1418.

Full Text: [2005\Inf Pro Man41, 1403.pdf](2005/Inf%20Pro%20Man41,%201403.pdf)

Abstract: This article reveals different patterns of scholarly communication in the XML research field on the Web and in print journals in terms of author visibility, and challenges the common practice of exclusively using the ISI’s databases to obtain citation counts as scientific performance indicators. Results from this study demonstrate both the importance and the feasibility of the use of multiple citation data sources in citation analysis studies of scholarly communication, and provide evidence for a developing “two tier” scholarly communication system. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Author Visibility, Bibliometrics, Citation, Citation Analysis, Citation Analysis, Evaluation, Impact, Information, Internet, Publications, Research, Scholarly Communication, Science Evaluation, Web Publishing, World-Wide-Web, XML

? Rousseau, R. (2005), Conglomerates as a general framework for informetric research. *Information Processing & Management*, **41** (6), 1360-1368.

Full Text: [2005\Inf Pro Man41, 1360.pdf](2005/Inf%20Pro%20Man41,%201360.pdf)

Abstract: We introduce conglomerates as a general framework for informetric (and other) research. A conglomerate consists of two collections: a finite source collection and a pool, and two mappings: a source-item map and a magnitude map. The ratio of the sum of all magnitudes of item-sets, and the number of elements in the source collection is called the conglomerate ratio. It is a kind of average, generalizing the notion of an impact factor. The source-item relation of a conglomerate leads to a list of sources ranked according to the magnitude of their corresponding item-sets. This list, called a Zipf list, is the basic ingredient for all considerations related to power laws and Lotkaian or Zipfian informetrics. Examples where this framework applies are: impact factors, including web impact factors, Bradford–Lotka type bibliographies, first-citation studies, word use, diffusion factors, elections and even bestsellers lists.

Keywords: Informetric Studies, Citation Analysis, Impact Factors, Power Laws, Inlinks, Social Networks, Collaboration, Demography, Writers, Diffusion, Elections

? Shan, S. (2005), On the generalized Zipf distribution. Part I. *Information Processing & Management*, **41** (6), 1369-1386.

Full Text: [2005\Inf Pro Man41, 1369.pdf](2005/Inf%20Pro%20Man41,%201369.pdf)

Abstract: This article is concerned with a class of informetric distribution, a family of skew distributions found to describe a wide range of phenomena both within or outside of information sciences and referred to as being of Zipf-type. A generalization of Zipf distribution (a size-frequency form of the Zipf’s law), named the generalized Zipf distribution, is introduced. Two main characterizations of the generalized Zipf distribution are obtained based on the proportionate hazard rate and truncated moments. Finally, some asymptotic properties of the generalized Zipf distribution are investigated.

? Lafouge, T. and Prime-Claverie, C. (2005), Production and use of information. Characterization of informetric distributions using effort function and density function: Exponential informetric process. *Information Processing & Management*, **41** (6), 1387-1394.

Full Text: [2005\Inf Pro Man41, 1387.pdf](2005/Inf%20Pro%20Man41,%201387.pdf)

Abstract: Statistical regularities observed in the production or use of information have been studied for a long time. In this article we define an exponential informetric process to formalize these stochastic process. It is defined by combining an effort function with a density function. Without using the powerful results of Price on the cumulative advantages process this characterization clarifies the principle of least effort. Some links between statistical theory of information and some informetric distributions are enhanced.

Keywords: Effort Function, Exponential Process, Entropy

? Zhao, D.Z. (2005), Challenges of scholarly publications on the Web to the evaluation of science: A comparison of author visibility on the Web and in print journals. *Information Processing & Management*, **41** (6), 1403-1418.

Full Text: [2005\Inf Pro Man41, 1403.pdf](2005/Inf%20Pro%20Man41,%201403.pdf)

Abstract: This article reveals different patterns of scholarly communication in the XML research field on the Web and in print journals in terms of author visibility, and challenges the common practice of exclusively using the ISI’s databases to obtain citation counts as scientific performance indicators. Results from this study demonstrate both the importance and the feasibility of the use of multiple citation data sources in citation analysis studies of scholarly communication, and provide evidence for a developing ‘two tier’ scholarly communication system. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Author Visibility, Bibliometrics, Citation, Citation Analysis, Citation Analysis, Evaluation, Impact, Information, Internet, Publications, Research, Scholarly Communication, Science Evaluation, Web Publishing, World-Wide-Web, XML

? Kretschmer, H. and Aguillo, I.F. (2005), New indicators for gender studies in Web networks. *Information Processing & Management*, **41** (6), 1481-1494.

Full Text: [2005\Inf Pro Man41, 1481.pdf](2005/Inf%20Pro%20Man41,%201481.pdf)

Abstract: New indicators for gender studies are introduced using the multi-authored publications of a set of 64 members of the COLLNET network. Considering the sample of 223 papers and their visibility on the Web, analyses were performed on the sets comprised of publications on the one hand and the authors (social network analysis) on the other. The indicators developed include: Gender co-operation; Web visibility rates and Gender centrality in networks. The co-operation among COLLNET members results in a publication set with a different pattern to other gender studies in science, which show low contribution rates of women in collaboration activities. In the sample the collaboration patterns of female COLLNET members are almost the same as their male counterparts. However, when considering only the arrangement of gender in the by-line of publications, this is in favour of men. Regarding average Web visibility rates, there are no differences dependent upon the arrangement of gender in publications with both male and female co-authors. However, the results also show strong gender differences in favour of publications with only male co-authors. The centrality of female actors in the networks is correlated with the central positions of women in the International Society for Scientometrics and Informetrics (ISSI), where they are leading either as presidents or organisers of its international conferences. It may well be that, with webometric methods and new indicators for gender studies, there is a real continuation of gender equality in COLLNET over time. (c) 2005 Published by Elsevier Ltd.

Keywords: Bibliometrics, Collaboration, Gender Studies, Network Analysis, Publication, Publications, Scientists, Social Network Analysis, Social Network Analysis (SNA), Web, Webometrics, Women

? Marshakova-Shaikevich, I. (2005), Bibliometric maps of field of science. *Information Processing & Management*, **41** (6), 1534-1547.

Full Text: [2005\Inf Pro Man41, 1534.pdf](2005/Inf%20Pro%20Man41,%201534.pdf)

Abstract: The present paper is devoted to two directions in algorithmic classificatory procedures: the journal co-citation analysis as an example of citation networks and lexical analysis of keywords in the titles and texts. What is common to those approaches is the general idea of normalization of deviations of the observed data from the mathematical expectation. The application of the same formula leads to discovery of statistically significant links between objects (journals in one case, keywords — in the other). The results of the journal co-citation analysis are reflected in tables and map for field “Women’s Studies” and for field “Information Science and Library Science”. An experimental attempt at establishing textual links between words was carried out on two samples from SSCI Data base: (1) EDUCATION and (2) ETHICS. The EDUCATION file included 2180 documents (of which 751 had abstracts); the ETHICS file included 807 documents (289 abstracts). Some examples of the results of this pilot study are given in tabular form . The binary links between words discovered in this way may form triplets or other groups with more than two member words.

Keywords: Journal Co-Citation Analysis, Lexical Analysis of Keywords, Network, JCR:SSE, SSCI

? Glenisson, P., Glänzel, W., Janssens, F. and De Moor, B. (2005), Combining full text and bibliometric information in mapping scientific disciplines. *Information Processing & Management*, **41** (6), 1548-1572.

Full Text: [2005\Inf Pro Man41, 1548.pdf](2005/Inf%20Pro%20Man41,%201548.pdf)

Abstract: In the present study results of an earlier pilot study by Glenisson, Glänzel and Persson are extended on the basis of larger sets of papers. Full text analysis and traditional bibliometric methods are serially combined to improve the efficiency of the two individual methods. The text mining methodology already introduced in the pilot study is applied to the complete publication year 2003 of the journal Scientometrics. Altogether 85 documents that can be considered research articles or notes have been selected for this exercise. The outcomes confirm the main results of the pilot study, namely, that such hybrid methodology can be applied to both research evaluation and information retrieval. Nevertheless, Scientometrics documents published in 2003 cover a much broader and more heterogeneous spectrum of bibliometrics and related research than those analysed in the pilot study. A modified subject classification based on the scheme used in an earlier study by Schoepflin and Glänzel has been applied for validation purposes.

Keywords: Algorithm, Automatic Indexing, Bibliometric, Bibliometrics, Chemistry, Cocitation, Evaluation, Field, Full Text Analysis, Journal, Mapping of Science, Publication, Research, Research Evaluation, Science Indicators, Text Mining, Text-Based Clustering, Word Analysis

? Chen, C.J. and Huang, C.C. (2004), A multiple criteria evaluation of high-tech industries for the science-based industrial park in Taiwan. *Information Processing & Management*, **41** (7), 839-851.

Full Text: [2004\Inf Pro Man41, 839.pdf](2004/Inf%20Pro%20Man41,%20839.pdf)

Abstract: Science-based industrial parks have been recognized as an effective way of promoting technology development, urban renewal, and economic growth. However, little has been done in discussing the selection strategy of high-tech industries to locate in such a park. As the space availability in the new park in Taiwan is limited, the selection of firms with higher efficiency and growth potential has become an important issue for the Taiwan government. Accordingly, this study adopted the AHP method to obtain professional’s opinions on this issue. The effort resulted in seven evaluation criteria with one, the “market potential” having the highest weight, followed by “technology level” and “government policy”. Biotechnology and photo-electronics were the two most favorable high-tech industries chosen for the introduction and development in the new park. A sensitivity analysis was carried out to determine the critical factors that affected the priority of the alternatives. (C) 2003 Published by Elsevier B.V.

Keywords: Science-Based Industrial Park, High-Tech Industry, Analytic Hierarchy Process, Sensitivity Analysis, Taiwan, AHP, Selection, System, Consistency, Innovation, Model

? Nicholson, S. (2006), The basis for bibliomining: Frameworks for bringing together usage-based data mining and bibliometrics through data warehousing in digital library services. *Information Processing & Management*, **42** (3), 785-804.

Full Text: [2006\Inf Pro Man42, 785.pdf](2006/Inf%20Pro%20Man42,%20785.pdf)

Abstract: Over the past few years, data mining has moved from corporations to other organizations. This paper looks at the integration of data mining in digital library services. First, bibliomining, or the combination of bibliometrics and data mining techniques to understand library services, is defined and the concept explored. Second, the conceptual frameworks for bibliomining from the viewpoint of the library decision-maker and the library researcher are presented and compared. Finally, a research agenda to resolve many of the common bibliomining issues and to move the field forward in a mindful manner is developed. The result is not only a roadmap for understanding the integration of data mining in digital library services, but also a template for other cross-discipline data mining researchers to follow for systematic exploration in their own subject domains.

Keywords: Bibliometrics, Bibliomining, Data Mining, Data Warehousing, Data-Mining, Digital Libraries, Evaluation, Library Evaluation, Library Measurement, Research, Scholarly Communication, Theory

? Guerrero-Bote, V.P., Zapico-Alonso, F., Espinosa-Calvo, M.E., Crisóstomo, R.G. and de Moya-Anegón, F. (2006), Binary Pathfinder: An improvement to the Pathfinder algorithm. *Information Processing & Management*, **42** (6), 1484-1490.

Full Text: [2006\Inf Pro Man42, 1484.pdf](2006/Inf%20Pro%20Man42,%201484.pdf)

Abstract: The Pathfinder algorithm is widely used to prune social networks. The pruning maintains the geodesic distances between nodes. It has shown itself to be very useful in the analysis of, amongst others, citations in BIS (bibliometrics, informetrics, and scientometrics). It has even been proposed for the online display of the search results in an information retrieval system. However, its great time and space complexity limits its use in real-time applications and in networks of any considerable size.

The present work describes an improved algorithm with considerably reduced time and space complexity. Its lower execution costs thus increase its applicability both in real time and to large networks.

Keywords: Algorithm, Analysis, Applications, Bibliometrics, Citation Analysis, Citations, Cocitation, Costs, Information, Information Retrieval, Information Visualization, Networks, Pfnets, Scientometrics, Social, Social Networks

? Zitt, M. and Bassecoulard, E. (2006), Delineating complex scientific fields by an hybrid lexical-citation method: An application to nanosciences. *Information Processing & Management*, **42** (6), 1513-1531.

Full Text: [2006\Inf Pro Man42, 1513.pdf](2006/Inf%20Pro%20Man42,%201513.pdf)

Abstract: Relevance of bibliometric indicators on scientific areas critically depends on the quality of their delineation. Macro-level studies, often based on a selected list of journals, accept a high degree of fuzziness. Micro-level studies rely on sets of individual articles in order to reduce noise and enhance precision of retrieval. The most usual information retrieval process is based on lexical queries with various levels of sophistication. In the experiment on Nanosciences reported here, this process was used as a first step, to delineate a ‘seed’ of literature. It has strong limitations, especially for emerging or transversal fields. In a second step, the alternative approach of citation linkages, was used to expand the bibliography starting from lexical seed. The extension process presented is ruled by three parameters, two deal with the cited side (threshold on citation score, and specificity towards the field), one with the citing side (threshold on the number of relevant references) interplaying in the ‘referencing structure’ function (RSF) introduced in a previous work. This type of combination proves effective for delineating the transversal field of Nanosciences. Further improvements of the method are discussed.

Keywords: Bibliometric, Bibliometric Indicators, Bibliometrics, Citation Network, Cocitation, Complex, Experiment, Function, Hybrid, Indicators, Information, Information Retrieval, Informetric Distributions, Laws, Levels, Lexical Query, Limitations, Nanosciences, Nanotechnology, Noise, Parameters, Patents, Process, Quality, Referencing, Science, Scientific Area Delineation, Seed, Specialties, Specificity, Structure, Systems, Threshold, Word Analysis

? Tsay, M.Y. (2006), Journal self-citation study for semiconductor literature: Synchronous and diachronous approach. *Information Processing & Management*, **42** (6), 1567-1577.

Full Text: [2006\Inf Pro Man42, 1567.pdf](2006/Inf%20Pro%20Man42,%201567.pdf)

Abstract: The present study investigates the self-citations of the most productive semiconductor journals by synchronous (self-citing rate) and diachronous (self-cited rate) approaches. Journal’s productivity of 100 most productive semiconductor journals was gathered from INSPEC database, 1978-1997 through OVID. Data of citation frequency were obtained from the Science Citation Index (SCI), Journal Citation Reports (JCR) 2001 CDROM edition by the title-by-title search. The self-citing and self-cited data were drawn from the Citing Journal Listing and the Cited Journal Listing of the JCR CDROM version 1990-2001. Self-citing and self-cited rates were determined by the method suggested by the JCR. Eighty-seven journals common to INSPEC and JCR in semiconductor were selected as the object of this study and were listed for statistical tests. The results of the present study demonstrate that high self-citing journals are usually older than low self-citing journals. In contrast to the self-citing data, the journal self-cited rate is not closely related to the publication year but reflects the characteristics of various journals. Journals with a short time interval of publication are more possible with high self-citing and self-cited rates. Journals with higher self-citing rate tend to be more productive and receive more citation than journals with lower self-citing rate. The journal self-cited rate has no association with the number of articles that a journal published and the citation it received. A journal with a higher self-citing rate tends to be cited more by itself. The mean self-citing rate is 9.59% and the mean self-cited rate is 15.03%. There is a significant difference between self-citing and self-cited rates within the same set of journals. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Analysis, Bibliometrics, Citation, Citation Analysis, Journal Self-Cited, Journal Self-Citing, Literature, Productivity, Science Citation Index, Self-Citation, Semiconductor Journals, Synchronous VS. Diachronous

Notes: CCountry

? Marshakova-Shaikevich, I. (2006), Scientific collaboration of new 10 EU countries in the field of social sciences. *Information Processing & Management*, **42** (6), 1592-1598.

Full Text: [2006\Inf Pro Man42, 1592.pdf](2006/Inf%20Pro%20Man42,%201592.pdf)

Abstract: The paper presents bibliometric analysis of scientific collaboration of new 10 countries EU in the field of social sciences. Material for this analysis was drawn from DB SSCI. The states as wholes are considered here as participants of collaboration. The results are mapped in a chart of counter to country links.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Collaboration, EU, New 10 EU Countries, Paper, Sciences, Scientific Collaboration, Social, Social Sciences

Notes: TTopic

? Janssens, F., Leta, J., Glanzel, W. and De Moor, B. (2006), Towards mapping library and information science. *Information Processing & Management*, **42** (6), 1614-1642.

Full Text: [2006\Inf Pro Man42, 1614.pdf](2006/Inf%20Pro%20Man42,%201614.pdf)

Abstract: In an earlier study by the authors, full-text analysis and traditional bibliometric methods were combined to map research papers published in the journal Scientometrics. The main objective was to develop appropriate techniques of full-text analysis and to improve the efficiency of the individual methods in the mapping of science. The number of papers was, however, rather limited. In the present study, we extend the quantitative linguistic part of the previous studies to a set of five journals representing the field of Library and Information Science (LIS). Almost 1000 articles and notes published in the period 2002–2004 have been selected for this exercise. The optimum solution for clustering LIS is found for six clusters. The combination of different mapping techniques, applied to the full text of scientific publications, results in a characteristic tripod pattern. Besides two clusters in bibliometrics, one cluster in information retrieval and one containing general issues, webometrics and patent studies are identified as small but emerging clusters within LIS. The study is concluded with the analysis of cluster representations by the selected journals.

Keywords: Algorithm, Analysis, Bibliometric, Bibliometric Methods, Bibliometrics, Cluster, Clusters, Co-Word Analysis, Cocitation Analysis, Combining Full-Text, Efficiency, Exercise, Field, Full-Text Analysis, General, Indicators, Information, Information Retrieval, Information Science, Library and Information Science, Mapping, Mapping of Science, Methods, Neural-Network Research, Publications, Research, Retrieval, Science, Scientific Publications, Scientometrics, Techniques, Text-Based Clustering, Validation, Webometrics

? Braun, T. and Diospatonyi, I. (2006), Gatekeeping in the international journal literature of chemistry. *Information Processing & Management*, **42** (6), 1652-1656

Full Text: [2006\Inf Pro Man42, 1652.pdf](2006/Inf%20Pro%20Man42,%201652.pdf)

Keywords: 27 Science Areas, Chemistry, Citation Impact, Fields, Gatekeeping, Indicators, Life Sciences, Literature, National Performances, Nations, Publication Output, Ranking, Scientific Wealth, Scientometric Weight, World Science

? Sanz-Casado, E., Suárez-Balseiro, C., Iribarren-Maestro, I., Ramírez-de Santa Pau, M. and de Pedro-Cuesta, J. (2007), Bibliometric mapping of scientific research on prion diseases, 1973–2002. *Information Processing & Management*, **43** (1), 273-284.

Full Text: [2007\Inf Pro Man43, 273.pdf](2007/Inf%20Pro%20Man43,%20273.pdf)

Abstract: The purpose of the present study is to analyse and map the trends in research on prion diseases by applying bibliometric tools to the scientific literature published between 1973 and 2002. The data for the study were obtained from the Medline database. The aim is to determine the volume of scientific output in the above period, the countries involved and the trends in the subject matters addressed. Significant growth is observed in scientific production since 1991 and particularly in the period 1996–2001. The countries found to have the highest output are the United States, the United Kingdom, Japan, France and Germany. The collaboration networks established by scientists are also analysed in this study, as well as the evolution in the subject matters addressed in the papers they published, that are observed to remain essentially constant in the three sub-periods into which the study is divided.

Keywords: Bibliometric, Bibliometric Mapping, Cartography, Collaboration, Collaboration Networks, Diseases, Evolution, France, Germany, Growth, Japan, Mapping, Output, Prion Disease, Production, Research, Science, Scientific Production, Technology, Tools, Trends, United Kingdom, United States

? Walters, W.H. (2007), Google Scholar coverage of a multidisciplinary field. *Information Processing & Management*, **43** (4), 1121-1132.

Full Text: [2007\Inf Pro Man43, 1121.pdf](2007/Inf%20Pro%20Man43,%201121.pdf)

Abstract: This paper evaluates the content of Google Scholar and seven other databases (Academic Search Elite, AgeLine, ArticleFirst, GEOBASE, POPLINE, Social Sciences Abstracts, and Social Sciences Citation Index) within the multidisciplinary subject area of later-life migration. Each database is evaluated with reference to a set of 155 core articles selected in advance-the most important studies of later-life migration published from 1990 to 2000. Of the eight databases, Google Scholar indexes the greatest number of core articles (93%) and provides the most uniform publisher and date coverage. It covers 27% more core articles than the second-ranked database (SSCI) and 2.4 times as many as the lowest-ranked database (GEOBASE). At the same time, a substantial proportion of the citations provided by Google Scholar are incomplete (32%) or presented without abstracts (33%). (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Citations, Coverage, Database, Databases, Field, Migration, Multidisciplinary, Rights, SSCI

? Rokaya, M., Atlam, E., Fuketa, M., Dorji, T.C. and Aoe, J.I. (2008), Ranking of field association terms using Co-word analysis. *Information Processing & Management*, **44** (2), 738-755.

Full Text: [2008\Inf Pro Man44, 738.pdf](2008/Inf%20Pro%20Man44,%20738.pdf)

Abstract: Information retrieval involves finding some desired information in a store of information or a database. In this paper, Co-word analysis will be used to achieve a ranking of a selected sample of FA terms. Based on this ranking a better arranging of search results can be achieved. Experimental results achieved using 41 MB of data (7660 documents) in the field of sports. The corpus was collected from CNN newspaper, sports field. This corpus was chosen to be distributed over 11 subfields of the field sports from the experimental results, the average precision increased by 18.3% after applying the proposed arranging scheme depending on the absolute frequency to count the terms weights, and the average precision increased by 17.2% after applying the proposed arranging scheme depending on a formula based on “TF\*IDF” to count the terms weights. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Absolute Frequency, Analysis, Association, Bibliometric, Co-Word Analysis, Data, Database, Distributed, Experimental, Fa Terms, Field, Information, Information Retrieval, Information-Retrieval, MAR, MB, Precision, Ranking, Rights, Scientometrics, Term Weight, Tf\*Idf, Word Co-Occurrence

? Egghe, L. and Rousseau, R. (2008), An h-index weighted by citation impact. *Information Processing & Management*, **44** (2), 770-780.

Full Text: [2008\Inf Pro Man44, 770.pdf](2008/Inf%20Pro%20Man44,%20770.pdf)

Abstract: An h-type index is proposed which depends on the obtained citations of articles belonging to the h-core. This weighted h-index, denoted as h., is presented in a continuous setting and in a discrete one. It is shown that in a continuous setting the new index enjoys many good properties. In the discrete setting some small deviations from the ideal may occur. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Citation, Citations, Discrete and Continuous Approach, h Index, h-Index, h-Type Indices, Power Law Model, Rights, Small, Weighted h-Index

? Ma, N., Guan, J.C. and Zhao, Y. (2008), Bringing PageRank to the citation analysis. *Information Processing & Management*, **44** (2), 800-810.

Full Text: [2008\Inf Pro Man44, 800.pdf](2008/Inf%20Pro%20Man44,%20800.pdf)

Abstract: The paper attempts to provide an alternative method for measuring the importance of scientific papers based on the Google’s PageRank. The method is a meaningful extension of the common integer counting of citations and is then experimented for bringing PageRank to the citation analysis in a large citation network. It offers a more integrated picture of the publications’ influence in a specific field. We firstly calculate the PageRanks of scientific papers. The distributional characteristics and comparison with the traditionally used number of citations are then analyzed in detail. Furthermore, the PageRank is implemented in the evaluation of research influence for several countries in the field of Biochemistry and Molecular Biology during the time period of 2000-2005. Finally, some advantages of bringing PageRank to the citation analysis are concluded. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Alternative, Analysis, Basic Research, Bibliometric Analysis, Characteristics, China, Citation, Citation Analysis, Citation Network, Citations, Comparison, Evaluation, Field, Indicators, Internal Citations, MAR, Molecular-Biology, Network, Pagerank, Papers, Publications, Research, Research Performance, Rights, Science, Scientific Publications

? Jiao, Q.G., Onwuegbuzie, A.J. and Waytowich, V.L. (2008), The relationship between citation errors and library anxiety: An empirical study of doctoral students in education. *Information Processing & Management*, **44** (2), 948-956.

Full Text: [2008\Inf Pro Man44, 948.pdf](2008/Inf%20Pro%20Man44,%20948.pdf)

Abstract: The present study investigated whether levels of library anxiety predict simultaneously the citation error rate and quality of reference lists in doctoral dissertation proposals among 93 doctoral students in education. This study was unique for at least two reasons. First, it was one of the first studies to examine bibliographic citation inaccuracies in doctoral research proposals. Second, the current investigation was one of the first to investigate the psychological characteristics of doctoral students who commit such errors. A canonical correlation analysis revealed a multivariate relationship between levels of library anxiety and both the citation error rate and quality of reference lists. This finding suggests that level of library anxiety plays an important role in students’ ability to construct accurate reference lists. The implications of these findings are discussed. Published by Elsevier Ltd.

Keywords: Accuracy, Analysis, Anxiety, Bibliographic Errors, Canonical Analysis, Characteristics, Citation, Citation Error, Citation Errors, Correlation, Correlation Analysis, Education, Error, Error Rate, Errors, First, Graduate Students, Investigation, Journals, Library Anxiety, Mar, Multivariate, Quality, Quality of, Reference, Reference Lists, Research, Role, Students

? Tsakonas, G. and Papatheodorou, C. (2008), Exploring usefulness and usability in the evaluation of open access digital libraries. *Information Processing & Management*, **44** (3), 1234-1250.

Full Text: [2008\Inf Pro Man44, 1234.pdf](2008/Inf%20Pro%20Man44,%201234.pdf)

Abstract: Advances in the publishing world have emerged new models of digital library development. Open access publishing modes are expanding their presence and realize the digital library idea in various means. While user-centered evaluation of digital libraries has drawn considerable attention during the last years, these systems are currently viewed from the publishing, economic and scientometric perspectives. The present study explores the concepts of usefulness and usability in the evaluation of an e-print archive. The results demonstrate that several attributes of usefulness, such as the level and the relevance of information, and usability, such as easiness of use and learnability, as well as functionalities commonly met in these systems, affect user interaction and satisfaction. (C) 2007 Elsevier Ltd. All rights reserved.

Keywords: Access, Attitudes, Behavior, Context, Criteria, Databases, Design, Development, Digital Libraries, Digital Libraries Evaluation, E-Prints, Evaluation, Information-Retrieval, Interaction, Libraries, Open Access, Publishing, Search Engines, Usability, Usefulness, Users, Web

? Burrell, Q.L. (2008), Extending Lotkaian informetrics. *Information Processing & Management*, **44** (5), 1794-1807.

Full Text: [2008\Inf Pro Man44, 1794.pdf](2008/Inf%20Pro%20Man44,%201794.pdf)

Abstract: The continuous version of the Lotka distribution, more generally referred to outside of informetrics as the Pareto distribution, has long enjoyed a central position in the theoretical development of informetrics despite several reported drawbacks in modelling empirical data distributions, most particularly that the inverse power form seems mainly to be evident only in the upper tails. We give a number of published examples graphically illustrating this shortcoming. In seeking to overcome this, we here draw attention to an intuitively reasonable generalization of the Pareto distribution, namely the Pareto type II distribution, of which we consider two versions. We describe its basic properties and some statistical features together with concentration aspects and argue that, at least in qualitative terms, it is better able to describe many observed informetric phenomena over the full range of the distribution. Suggestions for further investigations, including truncated and time-dependent versions, are also given.

Keywords: Lotkaian Informetrics, Pareto Type II Distribution, Statistical Estimation Methods, Concentration Measures

? Frandsen, T.F. (2009), The integration of open access journals in the scholarly communication system: Three science fields. *Information Processing & Management*, **45** (1), 131-141.

Full Text: [2009\Inf Pro Man45, 131.pdf](2009/Inf%20Pro%20Man45,%20131.pdf)

Abstract: The greatest number of open access journals (OAJs) is found in the sciences and their influence is growing. However, there are only a few studies on the acceptance and thereby integration of these OAJs in the scholarly communication system. Even fewer studies provide insight into the differences across disciplines. This study is an analysis of the citing behaviour in journals within three science fields: biology, mathematics, and pharmacy and pharmacology. It is a statistical analysis of OAJs as well as non-OAJs including both the citing and cited side of the journal to journal citations. The multivariate linear regression reveals many similarities in citing behaviour across fields and media. But it also points to great differences in the integration of OAJs. The integration of OAJs in the scholarly communication system varies considerably across fields. The implications for bibliometric research are discussed. (C) 2008 Elsevier Ltd. All rights reserved.

Keywords: Acceptance, Access, Analysis, Behaviour, Bibliometric, Bibliometric Analysis, Bibliometric Research, Bibliometrics, Biology, Citation Analysis, Citations, Communication, Disciplines, Field Differences, Impact, Influence, Insight, Integration, Internet, Journal, Journal Citations, Journals, Linear Regression, Linear-Regression, Mathematics, Matter, Media, Multivariate, Open, Open Access, Open Access Journals, Pharmacology, Pharmacy, Publications, Regression, Research, Rights, Scholarly Communication, Science, Sciences, Self-Citations, Statistical, Statistical Analysis, Web

? Egghe, L. (2009), Mathematical study of h-index sequences. *Information Processing & Management*, **45** (2), 288-297.

Full Text: [2009\Inf Pro Man45, 288.pdf](2009/Inf%20Pro%20Man45,%20288.pdf)

Abstract: This paper studies mathematical properties of h-index sequences as developed by Liang [Liang, L (2006). h-Inclex sequence and h-index matrix: Constructions and applications. Scientometrics, 69(1),153-1591. For practical reasons, Liming studies such sequences where the time goes backwards while it is more logical to use the time going forward (real career periods). Both type of h-index sequences are studied here and their interrelations are revealed. We show cases where these sequences are convex, linear and concave. We also show that, when one of the sequences is convex then the other one is concave, showing that the reverse-time sequence, in general, cannot be used to derive similar properties of the (difficult to obtain) forward time sequence. We show that both sequences are the same if and only if the author produces the same number of papers per year. If the author produces an increasing number of papers per year, then Liang’s h-sequences are above the “normal” ones. All these results are also valid for g- and R-sequences. The results are confirmed by the h, g- and R-sequences (forward and reverse time) of the author. (C) 2008 Elsevier Ltd. All rights reserved.

Keywords: Cases, Dependent Lotkaian Informetrics, Developed, g-Index Sequence, General, h Index, h-Index, h-Index Sequence, Hirsch-Index, MAR, Matrix, Model, Papers, R-Index Sequence, R-Sequences, Reverse Time, Rights, Scientometrics, Sequence, Time, Web of Science (WoS)

? Suárez-Balseiro, C., García-Zorita, C. and Sanz-Casado, E. (2009), Multi-authorship and its impact on the visibility of research from Puerto Rico. *Information Processing & Management*, **45** (4), 469-476.

Full Text: [2009\Inf Pro Man45, 469.pdf](2009/Inf%20Pro%20Man45,%20469.pdf)

Abstract: The impact of the existence and nature of multi-authorship on the visibility of research results is a relevant issue in the framework of the monitoring and evaluation of scientific performance. Multi-authorship involving researchers from different institutions is a growing trend typical of today’s social, economic and political development and an expression of the so-called “internationalization of science”. This paper analyzes how the establishment of scientific relationships and the local or international nature of such relationships affect the visibility of the research results published by the community of researchers affiliated with Puerto Rican institutions. Multi-dimensional indicators and multivariate analysis techniques, specifically Factorial Correspondence Analysis (FCA), were used to analyze and represent the visibility of the papers published in mainstream scientific journals. The results of the study show that the establishment and furtherance of local and international co-authorship favour the visibility of the papers published and consequently can be regarded to be a valid strategy in the context of the research and development effort in Puerto Rico. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Bibliometrics, Evaluation, Indicators, International Collaboration, Puerto Rico, Research, Research Visibility, Scientific Cooperation, Visibility

? Janssens, F., Zhang, L., De Moor, B. and Glänzel, W. (2009), Hybrid clustering for validation and improvement of subject-classification schemes. *Information Processing & Management*, **45** (6), 683-702.

Full Text: [2009\Inf Pro Man45, 683.pdf](2009/Inf%20Pro%20Man45,%20683.pdf)

Abstract: A hybrid text/citation-based method is used to cluster journals covered by the Web of Science database in the period 2002-2006. The objective is to use this clustering to validate and, if possible, to improve existing journal-based subject-classification schemes. Cross-citation links are determined on an item-by-paper procedure for individual papers assigned to the corresponding journal. Text mining for the textual component is based on the same principle; textual characteristics of individual papers are attributed to the journals in which they have been published. In a first step, the 22-field subject-classification scheme of the Essential Science Indicators (ESI) is evaluated and visualised. In a second step, the hybrid clustering method is applied to classify the about 8300 journals meeting the selection criteria concerning continuity, size and impact. The hybrid method proves superior to its two components when applied separately. The choice of 22 clusters also allows a direct field-to-cluster comparison, and we substantiate that the science areas resulting from cluster analysis form a more coherent structure than the “intellectual” reference scheme, the ESI subject scheme. Moreover, the textual component of the hybrid method allows labelling the clusters using cognitive characteristics, while the citation component allows visualising the cross-citation graph and determining representative journals suggested by the PageRank algorithm. Finally, the analysis of journal ‘migration’ allows the improvement of existing classification schemes on the basis of the concordance between fields and clusters. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Combined Cocitation, Combining Full-Text, Documents, Hybrid Clustering, Impact, Information-Science, Journal Cross-Citation, Mapping of Science, Migration, Subject Classification, Word Analysis

? Berendt, B., Krause, B. and Kolbe-Nusser S. (2010), Intelligent scientific authoring tools: Interactive data mining for constructive uses of citation networks. *Information Processing & Management*, **46** (1), 1-10.

Full Text: [2010\Inf Pro Man46, 1.pdf](2010/Inf%20Pro%20Man46,%201.pdf)

Abstract: Many powerful methods and tools exist for extracting meaning from scientific publications, their texts, and their citation links. However, existing proposals often neglect a fundamental aspect of learning: that understanding and learning require an active and constructive exploration of a domain. In this paper, we describe a new method and a tool that use data mining and interactivity to turn the typical search and retrieve dialogue, in which the user asks questions and a system gives answers, into a dialogue that also involves sense-making, in which the user has to become active by constructing a bibliography and a domain model of the search term(s). This model starts from an automatically generated and annotated clustering solution that is iteratively modified by users. The tool is part of an integrated authoring system covering all phases from search through reading and sense-making to writing. Two evaluation studies demonstrate the usability of this interactive and constructive approach, and they show that clusters and groups represent identifiable sub-topics.

Keywords: [H.2.8] Database Management – Database Applications – Data Mining, [H.3.7] Information Storage and Retrieval – Digital Libraries – User Issues, [H.3.3] Information Storage and Retrieval – Information Search and Retrieval – Search Process, Information Filtering, [H.3.5] Information Storage and Retrieval – Online Information Services – Web-Based Services, [K.3.2] Computers and Education – Computer and Information Science Education – Literacy, Citation Analysis

? Franceschet, M. (2011), The skewness of computer science. *Information Processing & Management*, **47** (1), 117-124.

Full Text: [2010\Inf Pro Man47, 117.pdf](2010/Inf%20Pro%20Man47,%20117.pdf)

Abstract: Computer science is a relatively young discipline combining science, engineering, and mathematics. The main flavors of computer science research involve the theoretical development of conceptual models for the different aspects of computing and the more applicative building of software artifacts and assessment of their properties. In the computer science publication culture, conferences are an important vehicle to quickly move ideas, and journals often publish deeper versions of papers already presented at conferences. These peculiarities of the discipline make computer science an original research field within the sciences, and, therefore, the assessment of classical bibliometric laws is particularly important for this field. In this paper, we study the skewness of the distribution of citations to papers published in computer science publication venues (journals and conferences). We find that the skewness in the distribution of mean citedness of different venues combines with the asymmetry in citedness of articles in each venue, resulting in a highly asymmetric citation distribution with a power law tail. Furthermore, the skewness of conference publications is more pronounced than the asymmetry of journal papers. Finally, the impact of journal papers, as measured with bibliometric indicators, largely dominates that of proceeding papers. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Bibliometric, Bibliometric Indicators, Citation, Citation Distributions, Citations, Development, Distributions, Field, h-Index, Indicators, Journal, Journals, Mathematics, Models, Output, Power Law, Power Law Distributions, Properties, Publication, Publications, Random Networks, Research, Research Evaluation, Science, Science Research, Sciences, Scientific Impact, Software

? Yan, E.J. and Ding, Y. (2011), Discovering author impact: A PageRank perspective. *Information Processing & Management*, **47** (1), 125-134.

Full Text: [2010\Inf Pro Man47, 125.pdf](2010/Inf%20Pro%20Man47,%20125.pdf)

Abstract: This article provides an alternative perspective for measuring author impact by applying PageRank algorithm to a coauthorship network. A weighted PageRank algorithm considering citation and coauthorship network topology is proposed. We test this algorithm under different damping factors by evaluating author impact in the informetrics research community. In addition, we also compare this weighted PageRank with the h-index, citation, and program committee (PC) membership of the International Society for Scientometrics and Informetrics (ISSI) conferences. Findings show that this weighted PageRank algorithm provides reliable results in measuring author impact. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Algorithm, Author, Bibliometrics, Citation, Coauthorship, h Index, h-Index, Informetrics, Informetrics, Network, Networks, Pagerank, Publications, Research, Scientometrics

? Wainer, J., de Oliveira, H.P. and Anido, R. (2011), Patterns of bibliographic references in the ACM published papers. *Information Processing & Management*, **47** (1), 135-142.

Full Text: [2010\Inf Pro Man47, 135.pdf](2010/Inf%20Pro%20Man47,%20135.pdf)

Abstract: This paper analyzes the bibliographic references made by all papers published by ACM in 2006. Both an automatic classification of all references and a human classification of a random sample of them resulted that around 40% of the references are to conference proceedings papers, around 30% are to journal papers, and around 8% are to books. Among the other types of documents. standards and RFC correspond to 3% of the references, technical and other reports correspond to 4%, and other Web references to 3%. Among the documents cited at least 10 times by the 2006 ACM papers, 41% are conferences papers, 37% are books, and 16% are journal papers. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Bibliometrics, Citation Analysis, Citations, Computer Science, Computer-Science, Conference Papers, Journal, References

? Levitt, J.M. and Thelwall, M. (2011), A combined bibliometric indicator to predict article impact. *Information Processing & Management*, **47** (2), 300-308.

Full Text: [2011\Inf Pro Man47, 300.pdf](2011/Inf%20Pro%20Man47,%20300.pdf)

Abstract: In both the UK and Australia there has been a recent move to use citation analysis in the evaluation of the research of individuals. In particular, the future UK Research Excellence Framework (REF), proposes using citation data in the research evaluation of articles published as recently as the year prior to the evaluation. In response to this move, this research develops an indicator at the level of individual articles that, when normalized, can supplement peer review. The new hybrid indicator is the weighted sum of two indicators in common usage: the article’s total number of citations in a citation window, and the Impact Factor of the journal in which the article was published. This research compares this new indicator with the article’s total number of citations in a longer citation window (the standard indicator of article impact). For citation windows of 0 or 1 years, the correlation of the simplified weighted sum with long-term citation is substantially higher than the correlation of the standard indicator of article citation with long-term citation. Moreover, for citation windows of as long as 3 years the standard indicator of citation correlates significantly with the month of publication, in that articles published earlier in the year are on average more highly cited than those published later in the year. By contrast, the skewing of the simplified weighted sum towards articles published early in the year is considerably less than that of the standard indicator. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Analysis, Archaeology, Assessment Exercise Ratings, Australia, Bibliometric, Bibliometric Indicator, Bibliometrics, Citation, Citation Analysis, Citation Counts, Citations, Correlates, Correlation, Data, Evaluation, Grants, Hybrid, Impact, Impact Factor, Index, Indicator, Indicators, Journal, Journal Impact, Long Term, Long-Term, Mar, Output, Peer Review, Peer-Review, Publication, Rae, Recent, Ref, Research, Research Evaluation, Research Impact, Review, Rights, Science, Standard, UK, University

? Rorissa, A. and Yuan, X.J. (2012), Visualizing and mapping the intellectual structure of information retrieval. *Information Processing & Management*, **48** (1), 120-135.

Full Text: [2012\Inf Pro Man48, 120.pdf](2012/Inf%20Pro%20Man48,%20120.pdf)

Abstract: Information retrieval is a long established subfield of library and information science. Since its inception in the early- to mid -1950s, it has grown as a result, in part, of well-regarded retrieval system evaluation exercises/campaigns, the proliferation of Web search engines, and the expansion of digital libraries. Although researchers have examined the intellectual structure and nature of the general field of library and information science, the same cannot be said about the subfield of information retrieval. We address that in this work by sketching the information retrieval intellectual landscape through visualizations of citation behaviors. Citation data for 10 years (2000-2009) were retrieved from the Web of Science and analyzed using existing visualization techniques. Our results address information retrieval’s co-authorship network, highly productive authors, highly cited journals and papers, author-assigned keywords, active institutions, and the import of ideas from other disciplines. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Articles, Author Cocitation Analysis, Authors, Bibliometric Analysis, Bibliometrics, Citation, Citation Analysis, Co-Authorship, Coauthorship, Collaboration, Digital Libraries, Domain Analysis, Evaluation, Google Scholar, Highly-Cited, Impact, Information, Information Retrieval, Information Science, Information-Retrieval, Informetrics, Intellectual Structure, Journals, Library, Mapping, Network, Networks, Papers, Researchers, Science, Scientists, Visualization, Web of Science

# Title: Information Research

Full Journal Title: [Information Research](http://informationr.net/ir/)

ISO Abbreviated Title:

JCR Abbreviated Title:

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: Impact Factor

Koehler, W., Aguilar, P., Finarelli, S., Gaunce, C., Hatchette, S., Heydon, R., McEwen, E., Mahsetky-Poolaw, W., Melson, C.T., Patterson, R., Stahl, M., Walker, M.A., Wall, J.A. and Wingfield, G. (2000), A bibliometric analysis of select information science print and electronic journals in the 1990s. *Information Research*, **6** (1).

Full Text: [I\Inf Res6 (1).pdf](I/Inf%20Res6%20(1).pdf)

How to cite this paper:

Koehler, Wallace and others. (2000) “A bibliometric analysis of select information science print and electronic journals in the 1990s”. Information Research, 6(1) Available at: http://InformationR.net/ir/6-1/paper88.html

Abstract: This paper examines three e-journals and one paper journal begun in the 1990s within the information science genre. In addition, these journals are compared to what is perhaps the leading information science journal, one that has been published continuously for fifty years. The journals we examine are CyberMetrics, Information Research, the Journal of Internet Cataloging, Libres, and the Journal of the American Society for Information Science. We find that there are a number of important differences among the journals. These include frequency of publication, publication size, number of authors, and the funding status of articles. We also find differences among journals for distributions of authors by gender and corporate authors by region. Some of the regional differences can be explained by journal maturation -- the more mature the journal the greater the dispersion. We also find that women are more likely to publish in the newer journals than in JASIS. The fact that a journal is or is not an e-journal does not appear to affect its presence or “behaviour” as an information science journal.

Jacobs, D. (2001), A bibliometric study of the publication patterns of scientists in South Africa 1992-96, with particular reference to status and funding. *Information Research*, **6** (3).

Full Text: [I\Inf Res6 (3).pdf](I/Inf%20Res6%20(3).pdf)

How to cite this paper:

Jacobs, Daisy (2001) “A bibliometric study of the publication patterns of scientists in South Africa 1992-96, with particular reference to status and funding.” Information Research, 6(3) Available at: http://InformationR.net/6-2/paper104.html

Abstract: This paper is a bibliometric study of the publication patterns of a selected group of academic and research scientists of ten universities of South Africa for a period of five years, 1992-96. The subject fields surveyed are Physics, Chemistry, Plant and animal Sciences, and Microbiology/Biochemistry. These ten universities vary considerably with respect to standards of education, quantity of research and publication and overall progress. The general purpose of the study is 1) to determine whether academic status and prestige have any impact on the level of productivity, 2) to study the productivity within different areas of science, 3) to investigate whether or not the level of funding and/or the prospects of getting funded has any influence on the level of productivity in each area of science and their pattern of publication. The study collected two sets of data through a scientometric analysis of science citation index and a questionnaire. The study demonstrates that there is a direct relationship between status and publication productivity. The study further shows that there are significant differences in productivity between areas of sciences but that there is no direct relationship between institutional funding and productivity.

Hawkins, D.T. (2001), Bibliometrics of electronic journals in information science. *Information Research*, **7** (1).

Full Text: [I\Inf Res7 (1).pdf](I/Inf%20Res7%20(1).pdf)

How to cite this paper:

Hawkins, Donald T. (2001) “Bibliometrics of electronic journals in information science” Information Research, 7(1) [Available at http://InformationR.net/ir/7-1/paper120.html]

Abstract: The bibliometric characteristics of electronic journals (e-journals) covering the field of information science have been studied. Twenty-eight e-journals were identified and ranked by number of articles on the subject they published. A Bradford plot revealed that the core is not well developed yet, but it will likely contain six journals. The publication of information science articles in e-journals began about 1990. In 1995 (the starting date for this study), a modest 26 articles appeared, but publication has now risen to approximately 250 articles per year. The most prolific authors are identified. The vast majority of them are located in the United States or United Kingdom. Only 26 articles have authors from more than one country, showing that electronic technology has not yet strongly influenced international collaboration. About 2/3 of the articles originate in academic institutions. Common topics of e-journal articles in information science include electronic information, electronic publishing, virtual (digital) libraries, information search and retrieval, and use of the Internet. Seven online databases cover these e-journals; Information Science Abstracts is the only one to cover all 28 journals, and it has the highest number of abstracts from them - over 1,100.

# Title: Information Research-An International Electronic Journal

Full Journal Title: [Information Research](http://informationr.net/ir/index.html)

ISO Abbreviated Title:

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ISSN: 1368-1613

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Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? de Arenas, J.L., Santillán-Rivero, E., Arenas, M. and Valles, J. (2003), Performance of Mexican scholarship recipients in the production of scientific knowledge - From bibliometrics to scientific policy? *Information Research*, **8** (2), Article Number: 147.

Full Text: [2003\Inf Res8, 147.pdf](2003/Inf%20Res8,%20147.pdf)

Abstract: During recent decades, several actions have been taken to build up Mexico’s science manpower base. Thousands of scholarships have been awarded to Mexicans to pursue postgraduate studies abroad. However, the number of PhD-holders the country expected to have by the beginning of the third millenniumm is still low despite the large amount of money the country has been investing in the training of doctoral students: $US 250,000 each. Therefore, we attempted to analyse the performance of the 1995 Mexican scholarship recipients awarded by the National Council for Science and Technology of Mexico for study abroad in all disciplines, assuming that many of them will contribute to the development of the Mexican science base after taking their knowledge back home. The visibility of the 680 study-abroad scholarship recipients was measured through the ISI Web of Science. The esteem measure was obtained from Mexico’s National Researchers’ System (SNI) the Mexican government recognition - data. As little or nothing is known about the performance of the Mexican government scholarship programme, this study provides information pertinent to this complex and controversial issue. The data reveals facts that might stimulate rethinking of the national science policy regarding support for doctoral training.

Keywords: Bibliometrics, Development, Knowledge, Mexico, Scholarship, Science, Scientific Policy, Visibility, Web of Science

? Thelwall, M. (2003), What is this link doing here? Beginning a fine-grained process of identifying reasons for academic hyperlink creation. *Information Research*, **8** (3), Article Number: 151.

Full Text: [2003\Inf Res8, 151.pdf](2003/Inf%20Res8,%20151.pdf)

Abstract: Analogies between Web links and citations have been used in information retrieval to improve search engine query matching and in information science to develop link metrics for academic and other Web spaces. The purpose of this paper is to begin a fine-grained process of differentiating between creation motivations for links in academic Web sites and citations in journals on the basis that they are very different phenomena. A sample of 100 random inter-site links to UK university home pages was used as a starting point for a qualitative exploration and four new types of motivation are postulated. The term ‘ownership’ is coined for links acknowledging authorship or co-authorship of are source, ‘social’ for links with a primarily social reinforcement role, ‘general navigational’ for those with a general information navigation function and ‘gratuitous’ for those that serve no communication function at all. It is argued that all of these form a role unique to the Web, albeit in varying degrees. Compared to citer motivations they are relatively trivial and instead of being primarily socio-cognitive, none are cognitive and the gratuitous are not even social.

Keywords: Authorship, Behavior, Bibliometrics, Challenges, Citations, Coauthorship, Communication, Documentation, Information, Information Retrieval, Information Science, Journals, Network, Science, Self-Citation, Web Impact Factors, World-Wide-Web

? Sanz-Casado, E., Martín-Moreno, C., García-Zorita, C. and Lascurain-Sánchez, M.L. (2004), Study of interdisciplinarity in chemistry research based on the production of Puerto Rican scientists 1992-2001. *Information Research*, **9** (4), Article Number: 182.

Full Text: [2004\Inf Res9, 182.pdf](2004/Inf%20Res9,%20182.pdf)

Abstract: Determining the role played by interdisciplinarity in the generation of knowledge is a very fertile line of research in which synergies among different fields of science can be identified and their impact on research efficiency ascertained. A number of methods may be used to explore interdisciplinarity, from the sociological approach to those requiring the application of bibliometric indicators. In this paper, a bibliometric analysis of the research conducted by scientists with the Chemistry Department at the University of Puerto Rico was run on the basis of the subject matter of citing and cited papers, in order to ascertain how interdisciplinarity affects certain aspects of research, such as collaboration or visibility. The data used for this paper were taken from the Science Citation Index database, which lists the most significant contributions made by these scientists, along with the respective bibliographic references. The study revealed the existence of scientific areas that are highly dependent on the knowledge generated in the specific area itself. A positive, albeit weak, correlation was also observed between research interdisciplinarity and collaboration between researchers and institutions. Interdisciplinarity was not found to have any effect, however, on the visibility of research papers or to be correlated with international collaboration.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Bibliometric Indicators, Chemistry, Citation, Citation Index, Collaboration, Database, Impact, Indicators, Interdisciplinarity, Knowledge, Papers, Research, Science, Science Citation Index, University, Visibility

? McKechnie, L.E.F., Goodall, G.R., Lajoie-Paquette, D. and Julien, H. (2005), How human information behaviour researchers use each other’s work: A basic citation analysis study. *Information Research*, **10** (2), Article Number: 220.

Full Text: [2005\Inf Res10, 220.pdf](2005/Inf%20Res10,%20220.pdf)

Abstract: Introduction. The purpose of this study was to determine if and how human information behaviour (HIB) research is used by others. Method. Using ISI Web of Knowledge, a citation analysis was conducted on 155 English-language HIB articles published from 1993 to 2000 in six prominent LIS journals. The bibliometric core of 12 papers was identified. Content analysis was performed on papers citing the core (n = 377) to determine how the papers were cited. A domain visualization was constructed of the citing relationships within the entire corpus. Analysis. Citation analysis, content analysis and social network analysis were used to analyse the data. Results. HIB literature is being cited, primarily (81.5%) by LIS authors. Fields outside of LIS citing HIB articles include engineering, psychology, education and medicine. Papers were cited generally (36.0%), for findings (28.5%) and for theory (25.3%) with few citations for method (6.0%). The domain visualization depicted a clear core of HIB scholarship surrounded by a periphery of largely uncited literature. Conclusion. HIB literature is yet to have a significant impact on other disciplines. It appears to be a second stage discipline, marked by theoretical consistency and exponential growth in publications and new researchers. More attention should be paid to writing and citation practices to allow HIB literature to become a rich guide to the act of doing HIB research.

Keywords: Bibliometric, Bibliometrics, Citation, Citation Analysis, Citations, History, Image Retrieval, ISI, Journals, Library, Lis, Needs, Network, Network Analysis, Patterns, Performance, Perspective, Publications, Research, Scholarship, Science Research, Seeking, Social Network Analysis, Theory

Schlögl, C. (2005), Information and knowledge management: Dimensions and approaches. *Information Research*, **10** (4), Article Number: 235.

Full Text: [2005\Inf Res10, 235.pdf](2005/Inf%20Res10,%20235.pdf)

Abstract: Introduction. Though literature on information and knowledge management is vast, there is much confusion concerning the meaning of these terms. Hence, this article should give some orientation and work out the main aspects of information and knowledge management. Method. An author co-citation analysis, which identified the main dimensions of information management, forms the basis of the study of literature. In it, the main aspects of information management are further refined. Furthermore, it will be investigated if the concept of knowledge management adds anything to information management, and if so what it is. Analysis. Data for analysis were retrieved from Science Citation Index and Social Science Citation Index. Though the literature review is based on the quantitative results of the bibliometric analysis and has tried to consider the most prominent publications, some degree of subjectivism cannot be excluded. Results. As a result of analysis, a distinction can be made between content and technology-oriented information management approaches. According to the literature review, technology-oriented information management includes data management, information technology management and strategic information technology management. The main emphasis of these approaches is the effective and efficient use of information technology. In contrast, content-oriented approaches focus on information and its use. They can be distinguished in records management, provision of external information, human-centered information management, and information resources management. The reading of the literature on knowledge management reveals, that this term is either used synonymously for information management or for the management of work practices with the goal of improving the generation of new knowledge and the sharing of existing knowledge. Conclusions This article identifies various aspects that are embraced by the terms information management and knowledge management. Thus, it should contribute to more terminological clarity and finally improve communication both in science and in professional practice.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Communication, Competitive Advantage, Concept, Evolution, Goal, Information, Information Management, Information Technology, IRM, Knowledge, Knowledge Management, Literature Review, Made, Management, Meaning, Orientation, Performance, Practice, Professional Practice, Publications, Resource-Management, Review, Science, Science Citation Index, Systems, Technology

? de Arenas, J.L., Rodríguez, J.V., Gómez, J.A. and Arenas, M. (2005), Communication of knowledge. Skill of the university professors? *Information Research*, **11** (1), Article Number: 243.

Full Text: [2005\Inf Res11, 243.pdf](2005/Inf%20Res11,%20243.pdf)

Abstract: Introduction: All fully information literate people possess a series of skills that are associated with the ability to perform research. University faculty are no exception.

Objective: In order to determine to what extent academics of the University of Murcia are fully information literate we look at their research performance measured through their published papers in mainstream journals from 1994 to 2001.

Methods: We used the three databases of the Web of Science to identify the output of the University of Murcia faculty. We also used the Journal Citation Reports to assign their subject category to published papers.

Results: We identified indexed papers published in mainstream journals. Articles covered by A&HCI were few, while papers indexed by SSCI remained constant over the studied period. SCI indexed 1,923 papers from 1994 to 2001; 72% of them were cited. Most papers were published in English by faculty working in centres related to the biological sciences. Disciplines that showed more activity were chemistry, biochemistry & molecular biology and neurosciences.

Conclusions: We were aware that the databases we used are criticised by their biases. However, we gather evidence that academics of the University of Murcia carry out research mainly in the hard sciences. Also, that academics are information literate: their output is published in mainstream journals, i.e. they have overcome the barriers of knowledge generation and science communication.

? Arroyo-Alonso, A., Pulgarín, A. and Gil-Leiva, I. (2005), Scientometric study of the scientific collaboration in the Polytechnic University of Valencia, Spain. *Information Research*, **11** (1), Article Number: 245.

Full Text: [2005\Inf Res11, 245.pdf](2005/Inf%20Res11,%20245.pdf)

Abstract: Introduction. The paper considers the characteristics of the scientific collaboration in the Polytechnic University of Valencia (UPV) in order to identify the degree of cooperation among the authors, organizations and countries that collaborate with UPV.

Method. A scientometric study of papers submitted to journals and conferences by UPV between 1973 and 2001 was carried out. The study reviewed a total of 213 national and international data bases, 5464 journal papers and 1111 conference papers.

Analysis. A quantitative analysis of the data collected, following the organization of the references with the program ‘Reference Manager’.

Results. The results show a high percentage of scientific collaboration of UPV. They indicate that the scientific collaboration and visibility are directly related. Similar results are obtained in the case of the international cooperation.

Conclusions. The UPV displays a rate of collaboration greater than 86%, in general, and 40%internationally 40%. It has collaborated with 576 institutions in 51 different countries.

Keywords: Citation, Co-Authorship, Cooperation, Multiple Authorship, Patterns, Productivity, Science

? Oppenheim, C. and Summers, M.A.C. (2008), Citation counts and the Research Assessment Exercise, part VI: Unit of assessment 67 (music). *Information Research*, **13** (2), Article Number: 342.

Full Text: [2008\Inf Res13, 342.pdf](2008/Inf%20Res13,%20342.pdf)

Abstract: Introduction. This study aimed to explore research assessment within the field of music and, specifically, to investigate whether citation counting could be used to replace or inform the peer review system currently in use in the UK. Method. A citation analysis of academics submitted for peer review in Unit of Assessment 67 in the 2001 Research Assessment Exercise was performed using the Arts and Humanities Citation Index and checked for correlations with the Assessment scores. A Spearman rank order correlation coefficient test was used to assess the significance of correlations between citations and scores. Results. At a departmental level, citation counts correlated strongly with scores awarded by the Assessment Exercise. A weaker correlation was found between scores and individual counts. The correlations were significant at the 0.01% level. Types of submission were analysed and trends were found within the author group. However, the Arts and Humanities Citation Index was found to be unrepresentative of music research activity in UK universities due to its choice of source material. Conclusion. The Arts and Humanities Citation Index alone is not a suitable data source for citation analysis in the field of music. However, if an alternative data source could be found, there is potential for the use of citation analysis in research assessment in music.

Keywords: Alternative, Analysis, Archaeology, Arts and Humanities Citation Index, Assessment, Authors, Bibliometric Methods, Choice, Citation, Citation Analysis, Citation Counts, Citations, Correlation, Correlation Coefficient, Correlations, Data, Field, Library, Peer Review, Peer-Review, Potential, Rank, Rankings, Ratings, Research, Research Assessment, Review, Significance, Source, Trends, UK, Universities

? Jarneving, B. (2009), The publication activity of Region Vastra Gotaland: A bibliometric study of an administrative and political Swedish region during the period 1998-2006. *Information Research*, **14** (2), Article Number: 397.

Full Text: [2009\Inf Res14, 397.pdf](2009/Inf%20Res14,%20397.pdf)

Abstract: Introduction. A descriptive bibliometric study on a sub-national level with the aim to map a Swedish region’s visibility and research collaboration during the observation period 1998-2006 was conducted. Method. Indicators and measures of research performance were constructed on basis of national standards. Results. Results show that the citation and publication patterns basically mirrored the national science and technology system, though some deviations were observed. The more influential science and technology fields were identified along with their more active regional producers of published research. A publication profile of the region was generated as well as a mapping of the balance between productivity and citation impact. Applying a research typology, different types of joint publishing and their relations to research areas were explored. Conclusions. The results are primarily of interest for local research policy but also of interest for a wider audience as a suggested method approach for similar regional assessment tasks.

Keywords: Assessment, Bibliometric Study, Collaboration, Impact, Indicators, Output, Policy, Research, Research Areas, Science, Technology, Visibility

? Ardanuy, J., Urbano, C. and Quintana, L. (2009), The evolution of recent research on Catalan literature through the production of PhD theses: A bibliometric and social network analysis. *Information Research*, **14** (2), Article Number: 404.

Full Text: [2009\Inf Res14, 404.pdf](2009/Inf%20Res14,%20404.pdf)

Abstract: Introduction. This paper studies the situation of research on Catalan literature between 1976 and 2003 by carrying out a bibliometric and social network analysis of PhD theses defended in Spain. It has a dual aim: to present interesting results for the discipline and to demonstrate the methodological efficacy of scientometric tools in the humanities, a field in which they are often neglected due to the difficulty of gathering data. Method. The analysis was performed on 151 records obtained from the TESEO database of PhD theses. The quantitative estimates include the use of the UCINET and Pajek software packages. Authority control was performed on the records. Analysis. Descriptive statistics were used to describe the sample and the distribution of responses to each question. Sex differences on key questions were analysed using the Chi-squared test. Results. The value of the figures obtained is demonstrated. The information obtained on the topic and the periods studied in the theses, and on the actors involved (doctoral students, thesis supervisors and members of defence committees), provide important insights into the mechanisms of humanities disciplines. The main research tendencies of Catalan literature are identified. It is observed that the composition of members of the thesis defence committees follows Lotka’s Law. Conclusions. Bibliometric analysis and social network analysis may be especially useful in the humanities and in other fields which are lacking in scientometric data in comparison with the experimental sciences.

Keywords: Authors, Betweenness, Bibliometric Analysis, Centrality, Graphs, Research, Science, Spain, Statistics

? Orduña-Malea, E. and Ontalba-Ruipérez, J.A. (2009), Proposal for metric indicators for social news solicitors: Analysis of the Spanish digital press in Meneame. *Information Research*, **14** (3), Article Number: 406.

Full Text: [2009\Inf Res14, 406.pdf](2009/Inf%20Res14,%20406.pdf)

Abstract: Introduction. Social bookmarking sites such as Digg, Meneame, etc. have become a reference for the digital press. Therefore, news producers wish to position themselves in such systems to gain visibility and to increase traffic to their Websites. This paper proposes two bibliometric indicators to calculate the presence and impact of the press in social bookmarking systems, providing both qualitative and quantitative measures. Method. The Weighted Comments Impact (ICP) is proposed as an indicator of the impact of a news medium over a month, and the Media Power Factor (FPM) is proposed as an indicator of the overall impact of a news medium over a month. To validate these parameters, a longitudinal retrospective descriptive analysis of the content of news sent to the Meneame social bookmarking site over sixteen months has been carried out. Results. The validation of the Weighted Comments Impact shows that the digital medium which has reached the highest average value is El Pais, followed by 20 Minutos and El Mundo, which is consistent with the overall ranking of comments received. The validation of the Media Power Factor, however, indicates that 20 Minutos is the digital newspaper with the highest value, followed by El Pais and El Mundo. Conclusions. The main finding of this study is that the parameters.

Keywords: Bibliometric Indicators, Index, Indicators, Visibility, Web

? López-Herrera, A.G., Cobo, M.J., Herrera-Viedma, E., Herrera, F., Bailón-Moreno, R. and Jiménez-Contreras, E. (2009), Visualization and evolution of the scientific structure of fuzzy sets research in Spain. *Information Research-An International Electronic Journal*, **14** (4), Article Number: 421.

Full Text: 2009\Inf Res14, 421.pdf

Abstract: Introduction. Presents the first bibliometric study on the evolution of the fuzzy sets theory field. It is specially focused on the research carried out by the Spanish comunity. Method. The CoPalRed software, for network analysis, and the co-word analysis technique are used. Analysis. Bibliometric maps showing the main associations among the main concepts in the field are provided for the periods 1965-1993, 1994-1998, 1999-2003 and 2004-2008. Results. The bibliometric maps obtained provide insight into the structure of the fuzzy sets theory research in the Spanish community, visualize the research subfields, and show the existing relationships between those subfields. Furthermore, we compare the Spanish community with other countries (the USA and Canada; the UK and Germany; and Japan and Peoples Republic of China). Conclusions. As a result of the analysis, a complete study of the evolution of the Spanish fuzzy sets community and an analysis of its international importance are presented.

Keywords: Bibliometric, Bibliometric Study, Chemistry, China, Classification, Co-Word Analysis, Group Decision-Making, Information, Logic, Model, Network Analysis, Preference Relations, Priority Vector, Research, Software, Spain, Surfactants, Theory, UK, USA

? Thelwall, M. (2010), Webometrics: Emergent or doomed? *Information Research-An International Electronic Journal*, **15** (4), Article Number: colis713.

Full Text: 2010\Inf Res15, colis713.pdf

Abstract: Introduction. For some years bibliometric studies have identified webometrics as one of the largest information science fields. Nevertheless, most published webometric research is relatively theoretical and, as a new research field, seems unlikely to survive unless it is useful in some way. In general it is very important for academics to identify hot research topics and avoid unpromising ones and so methods are needed to help this identification process. Method. This article uses citation analysis and a survey of webometricians to assess the extent to which webometrics has found applications outside of its parent discipline. Results. The results suggest that there has been a turn towards applied webometrics with several externally-financed studies being contracted. Moreover, there is a significant amount of citation of webometrics research by disciplines outside information science, including computing, communication science and health. Nevertheless, it seems that the potential user base for current webometric techniques is wider still, creating a need for awareness-raising. Conclusions. Whilst webometrics already has several claims to usefulness, there is still progress to be made.

Keywords: Academic Web, Analysis, Bibliometric, Bibliometric Studies, Citation, Citation Analysis, Citations, Communication, Exploration, Field, General, Google Scholar, Health, Identification, Information, Information Science, Information-Science, Links, Methods, Potential, Progress, Research, Science, Search Engines, Sites, Survey, Techniques, Web Impact Factors, Webometrics

? Tomic, T. (2010), The philosophy of information as an underlying and unifying theory of information science. *Information Research-An International Electronic Journal*, **15** (4), Article Number: colis714.

Full Text: 2010\Inf Res15, colis714.pdf

Abstract: Introduction. Philosophical analyses of theoretical principles underlying these sub-domains reveal philosophy of information as underlying meta-theory of information science. Method. Conceptual research on the knowledge sub-domains in information science and philosophy and analysis of their mutual connection. Analysis. Similarities between conceptual cores and research questions of the two fields have been investigated. The consequent methods and knowledge domains of philosophy of information have been studied. Results. As the underlying theory, philosophy of information discovers philosophical questions in all of the information sub-domains studied. In information retrieval, it studies ontological and epistemological. Knowledge organization implements philosophy of language. Theories of information management actualize classical epistemological issues in the context of organizational knowledge. Studies of information behaviour benefit from argumentation theory. Philosophical analyses may possibly investigate how the concrete rules of bibliometric models influence conceptions and evaluations of knowledge. The sub-domain of information literacy is significantly compatible with philosophical conceptions and techniques of critical thinking. Conclusions. As underlying and unifying theory of information science, philosophy of information implements advanced abilities of critical thinking in the sub-domains, with respect to the role that information technology and the resulting knowledge structures, codes, languages and systems might have for the development of mind and world.

Keywords: Analyses, Analysis, Behaviour, Bibliometric, Concrete, Context, Development, Information, Information Retrieval, Information Science, Information Technology, Knowledge, Knowledge Domains, Languages, Management, Methods, Models, Ontologies, Organization, Organizational, Philosophy, Principles, Research, Retrieval, Role, Science, Systems, Techniques, Technology, Theory, World

? Thelwall, M. (2010), Webometrics: Emergent or doomed? *Information Research-An International Electronic Journal*, **15** (4), Article Number: colis713.

Full Text: 2010\Inf Res15, colis713.pdf

Abstract: Introduction. For some years bibliometric studies have identified webometrics as one of the largest information science fields. Nevertheless, most published webometric research is relatively theoretical and, as a new research field, seems unlikely to survive unless it is useful in some way. In general it is very important for academics to identify hot research topics and avoid unpromising ones and so methods are needed to help this identification process. Method. This article uses citation analysis and a survey of webometricians to assess the extent to which webometrics has found applications outside of its parent discipline. Results. The results suggest that there has been a turn towards applied webometrics with several externally-financed studies being contracted. Moreover, there is a significant amount of citation of webometrics research by disciplines outside information science, including computing, communication science and health. Nevertheless, it seems that the potential user base for current webometric techniques is wider still, creating a need for awareness-raising. Conclusions. Whilst webometrics already has several claims to usefulness, there is still progress to be made.

Keywords: Academic Web, Analysis, Bibliometric, Bibliometric Studies, Citation, Citation Analysis, Citations, Communication, Exploration, Field, General, Google Scholar, Health, Identification, Information, Information Science, Information-Science, Links, Methods, Potential, Progress, Research, Science, Search Engines, Sites, Survey, Techniques, Web Impact Factors, Webometrics

? Tomic, T. (2010), The philosophy of information as an underlying and unifying theory of information science. *Information Research-An International Electronic Journal*, **15** (4), Article Number: colis714.

Full Text: 2010\Inf Res15, colis714.pdf

Abstract: Introduction. Philosophical analyses of theoretical principles underlying these sub-domains reveal philosophy of information as underlying meta-theory of information science. Method. Conceptual research on the knowledge sub-domains in information science and philosophy and analysis of their mutual connection. Analysis. Similarities between conceptual cores and research questions of the two fields have been investigated. The consequent methods and knowledge domains of philosophy of information have been studied. Results. As the underlying theory, philosophy of information discovers philosophical questions in all of the information sub-domains studied. In information retrieval, it studies ontological and epistemological. Knowledge organization implements philosophy of language. Theories of information management actualize classical epistemological issues in the context of organizational knowledge. Studies of information behaviour benefit from argumentation theory. Philosophical analyses may possibly investigate how the concrete rules of bibliometric models influence conceptions and evaluations of knowledge. The sub-domain of information literacy is significantly compatible with philosophical conceptions and techniques of critical thinking. Conclusions. As underlying and unifying theory of information science, philosophy of information implements advanced abilities of critical thinking in the sub-domains, with respect to the role that information technology and the resulting knowledge structures, codes, languages and systems might have for the development of mind and world.

Keywords: Analyses, Analysis, Behaviour, Bibliometric, Concrete, Context, Development, Information, Information Retrieval, Information Science, Information Technology, Knowledge, Knowledge Domains, Languages, Management, Methods, Models, Ontologies, Organization, Organizational, Philosophy, Principles, Research, Retrieval, Role, Science, Systems, Techniques, Technology, Theory, World

# Title: Information for Responsible Fisheries: Libraries as Mediators, Proceedings

Full Journal Title: Information for Responsible Fisheries: Libraries as Mediators, Proceedings

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Di Cesare, R. and Ruggieri, R. (2006), The evaluation of Grey Literature using bibliometric indicators: A methodological proposal. *Information for Responsible Fisheries: Libraries as Mediators, Proceedings*, 57-63.

Abstract: Grey Literature (GL), defined as material in print and electronic format not readily available through regular market channels or not widely distributed, has received increasing attention in the last decade. Widespread agreement exists on its importance as an information source. However, problems related to the actual use of GL have not been adequately investigated. This paper proposes a methodology to analyze the use of GL in bibliographic references of journal articles, already applied in some disciplinary fields (Physics, 1994, Agricultural economics, 1995; Demography & Computer sciences, 2004). In order to verify to what extent GL contributes to scientific work, we use bibliometric indicators (frequency of GL use, frequency of GL citing), similar to the ones widely used for conventional literature. A specific bibliometric indicator, that seems useful for measuring GL impact namely the intensity of GL citing, i.e., the average frequency of GL references per article containing GL, is described. Moreover, the potential use of the impact factor as an indicator of variability in GL use is considered. The issues connected with the difficulty of locating and identifying citations to GL are also briefly discussed.

Keywords: Bibliometric Indicators, Citation, Citations, Impact Factor, Journal, Literature

# Title: Information Retrieval

Full Journal Title: [Information Retrieval](http://www.springerlink.com/content/91q64178x503610u/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Couto, T., Ziviani, N., Calado, P., Cristo, M., Goncalves, M., de Moura, E.S. and Brandao, W. (2010), Classifying documents with link-based bibliometric measures. *Information Retrieval*, **13** (4), 315-345.

Full Text: [2010\Inf Ret13, 315.pdf](2010/Inf%20Ret13,%20315.pdf)

Abstract: Automatic document classification can be used to organize documents in a digital library, construct on-line directories, improve the precision of web searching, or help the interactions between user and search engines. In this paper we explore how linkage information inherent to different document collections can be used to enhance the effectiveness of classification algorithms. We have experimented with three link-based bibliometric measures, co-citation, bibliographic coupling and Amsler, on three different document collections: a digital library of computer science papers, a web directory and an on-line encyclopedia. Results show that both hyperlink and citation information can be used to learn reliable and effective classifiers based on a kNN classifier. In one of the test collections used, we obtained improvements of up to 69.8% of macro-averaged F (1) over the traditional text-based kNN classifier, considered as the baseline measure in our experiments. We also present alternative ways of combining bibliometric based classifiers with text based classifiers. Finally, we conducted studies to analyze the situation in which the bibliometric-based classifiers failed and show that in such cases it is hard to reach consensus regarding the correct classes, even for human judges.

Keywords: Classification, Cocitation, Digital Libraries, Information, Links, Model, Retrieval, Text Classification, Web, Web Directories

# Title: Information Science

Full Journal Title: [Information Science](http://e41.cnki.net/KNS50/Navi/Bridge.aspx?LinkType=BaseLink&DBCode=cjfd&TableName=cjfdbaseinfo&Field=BaseID&Value=QBKX&NaviLink=%e6%83%85%e6%8a%a5%e7%a7%91%e5%ad%a6)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1007-7634

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhang, M.W. (2000), Bibliometric analysis of medical literature in Harbin Medial University. *Information Science*, **18** (2), 177-179.

Full Text: [2000\Inf Sci18, 177.pdf](2000/Inf%20Sci18,%20177.pdf)

Abstract: Based on “Chinese Biomedical Literature CD - ROM Database” and “MEDLINE CD - ROM Database”, this paper has made bibliometric analysis from various angles of papers written by Harbin Medical University and published in “Zhong Hua” Series Journals.

Keywords: Medical Literature Bibliometric Analysis

? Zhang, M.G. (2000), Statistics research of cited frequency of Journal of Haerbin Medical University. *Information Science*, **18** (8), 758-761.

Full Text: [2000\Inf Sci18, 758.pdf](2000/Inf%20Sci18,%20758.pdf)

Abstract: By making use of CSCD, bibliometric research on Journal of Harbin Medical University (HMU) cited by Chinese scientific and technical journals was made in this paper.Moreover, Journal of HMU was comprehensively evaluated based on the result.

Keywords: CSCD Journal of Haerbin Medical University Cited frequencey impact factor

? Zhang, M.W. (2000), The investigation and research of core teacher construction in the firsth affiliated hospital of hmu by making use of CSCD. *Information Science*, **18** (10), 927-930.

Full Text: [2000\Inf Sci18, 927.pdf](2000/Inf%20Sci18,%20927.pdf)

Abstract: By making use of CSCD to investigate the academic articles and related citation in the first affiliated hospital of Harbin Medical University,some significant results are expected in this paper and further evaluation was made on the basis of them.

Keywords: CSCD Bibliometric Analysis Citation Analysis Cited Frequency

? Chen, W.J. (2001), Comparison between bibliometric method and content analysis method. *Information Science*, **19** (8), 884-886.

Full Text: [2001\Inf Sci19, 884.pdf](2001/Inf%20Sci19,%20884.pdf)

Abstract: Bibliometric method and content analysis method are all quantitative research method, but there are many differences between them on research objects, methodology base, application range and so on.

? Lan, X.Y. and Zhang, Y.W. (2002), A statistical analysis on papers, authors and quotations in library and information service in 2000. *Information Science*, **20** (5), 493-496,

Full Text: [2002\Inf Sci20, 493.pdf](2002/Inf%20Sci20,%20493.pdf)

Abstract: Applying bibliometric statistical methods to count and analyses the papers, authors and quotations delivered in Library and Information Service in 2000, the characteristics of those papers, authors and quotations are expounded.

Keywords: Library and Information Service Papers Analysis Authors Analysis Quotations Analysis Statistical Analysis

? Lan, X.Y. and Zhang, Y.W. (2002), A quantitative analysis of the papers on digital library in China. *Information Science*, **20** (6), 595-598

Full Text: [2002\Inf Sci20, 595.pdf](2002/Inf%20Sci20,%20595.pdf)

Abstract: By means of bibliometric methods the 663 papers on digital library study issued in 22 coreperiodicals in library & information science from 1994 to 2001 are quantitatively analyzed in terms of time and space distribution, content distribution, author distribution and citation distribution.Some relevant problems existing in digital library study in our country are also discussed.

Keywords: Digital Library Virtual Library Electronic Library Bibliometrics

? Lü, F. (2003), A statistical analyses on papers, authors and quotations in Information Science in 2001. *Information Science*, **21** (11), 2173-2175.

Full Text: [2003\Inf Sci21, 2173.pdf](2003/Inf%20Sci21,%202173.pdf)

Abstract: Applying bibliometric statistical methods to count and analyses the papers, authors and quotations delivered in Information Science in 2001, the characteristics of those papers, authors and quotations are expounded.

Keywords: Information Science Papers Analyses Authors Anlyses Quotations Analyses Statistical Analyses

? Cao, Y. (2004), A bibliometric analysis on intellectual property of digital library in China. *Information Science*, **22** (3), 315-317.

Full Text: [2004\Inf Sci22, 315.pdf](2004/Inf%20Sci22,%20315.pdf)

Abstract: This paper uses the bibliometrics method for electronic resources investigates and analyzes the status of study on intellectual property of digital library in China in four aspects of the number of document increasing with year, periodical distributing, authors, institutions and document content.

Keywords: Digital library Intellectual Property Bibliometrics

Keywords: Bibliometric Method Content Analysis Method Comparison

? Dong, X.Y. (2004), A statistical analyses on papers, authors and quotations in Information Science in 2003. *Information Science*, **22** (5), 551-553.

Full Text: [2004\Inf Sci22, 551.pdf](2004/Inf%20Sci22,%20551.pdf)

Abstract: Applying bibliometric statistical methods to count and analyses the papers?authors and quotations delivered information science in 2003, the characteristics of those papers, authors and quotations are expounded.

Keywords: Information Science Papers Analyses Authors Analyses Quotations Analyses Statistical Analyses

? Wang, S.Q. (2005), A quantitative analysis on information resources in the network environment. *Information Science*, **23** (2), 205-207

Full Text: [2005\Inf Sci23, 207.pdf](2005/Inf%20Sci23,%20207.pdf)

Abstract: Applying bibliometric statistical methods, the paper counts up the papers on information resources in the networked environment delivered in 1999 to 2003 and makes a comparatively and integratedly analysis on the distribution of time, journals, the characteristics of thesis and the fund projects, and the regional distribution of the papers and their correspondin authors.

Keywords: Networked Environment, Information Resources, Quantitative Analysis

? Dong, W.Y. and Yuan, S.B. (2005), Theses, authors and quotation Analysis of Information Science from 2002 to 2004. *Information Science*, **23** (9), 1349-1352

Full Text: [2005\Inf Sci23, 1349.pdf](2005/Inf%20Sci23,%201349.pdf)

Abstract: Using the bibliometric statistical methods, this paper selects 1223 theses from Information Science published from 2002 to 2004, makes a statistic analysis of its theses, authors and citation, then gets the law and characteristic of this magazine in recent 3 years.

Keywords: Information Science, Theses Analysis, Author Analysis, Citation Analysis, Statistic Analysis

? Wang, D. (2006), Statistical Analysis of Theses on Consult in LISA Database. *Information Science*, **24** (8), 1253-1257.

Full Text: [2006\Inf Sci24, 1253.pdf](2006/Inf%20Sci24,%201253.pdf)

Abstract: Based on the theses about consulting in the database of LISA, this paper using the bibliometric statistical methods, make a statistical analysis of the theses, including literature number 、author、language、journal and theme, hoping to supply some reference and inspiration to the research, especially cast some important enlightments on home research on these respects from now on.

Keywords: Consult, LISA, Statistical Analysis

? Zhu, L. (2006), Web Impact Factors: The index of quantitative analysis for WEB site. *Information Science*, **24** (8), 1269-1274

Full Text: [2006\Inf Sci24, 1269.pdf](2006/Inf%20Sci24,%201269.pdf)

Abstract: This paper reviews how this linkbased metric has been developed, enhanced and applied.Not only has the metric itself undergone improvement but also the relevant data collection techniques have been enhanced. WIFs have also been validated by significant correlations with traditional research measures.Bibliometric techniques have been further applied to the Web and patterns that might have otherwise been ignored have been found from hyperlinks.This paper concludes with some suggestions for future research...

Keywords: Internet, Webometric Studies, Hyperlinks, Web Impact Factors, Wif

# Title: Information Sciences

Full Journal Title: [Information Sciences](http://www.sciencedirect.com/science/journal/00200255)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Guo, G.M. (2007), A computer-aided bibliometric system to article ranked lists in interdisciplinar generate core subjects. *Information Sciences*, **177** (17), 3539-3556.

Full Text: [2007\Inf Sci177, 3539.pdf](2007/Inf%20Sci177,%203539.pdf)

Abstract: Due to the tremendous increase and variations in serial publications, the impact of every peer-reviewed paper on different subjects is varying continually. Domain experts or researchers want to keep track of those latest and highly cited peer-reviewed papers: however they are finding it difficult to update or collect their subject core paper lists regularly and accurately. The evaluation of serial papers for generating and ranking core paper lists on different subjects becomes a very challenging task for scholars or librarians. Therefore, a computer-aided bibliometric system (CABS) was developed to generate a core article ranked list automatically. Four indicators - subject reference cited counts, subject total cited Counts. subject reference period impact and subject reference cited history - were proposed to generate a subject core article ranking list. Seven different subjects including E-commerce. Data Mining, Supply Chain, Image Processing, Enterprise Resource Planning, Microarray and Expert Systems were used as samples. The turning point (TP) was proposed to determine the core article area in the paper citation analysis. The TP patterns observed were that all TPs had the same rate for four different subjects. The usage of TP patterns can also be used to verify the experimental results. This study provides experimental evidence to disprove three myths. Myth 1: the top papers on a subject (for instance, the top 10 papers) were all submitted to (S)SCI journals. Myth 2: the highly cited papers (cited counts >4) on interdisciplinary subjects were almost submitted to (S)SCI journals. Myth 3: the articles published in the top journals on a subject would be highly cited. (c) 2007 Elsevier Inc. All rights reserved.

Keywords: Analysis, Bibliometric, Bibliometrics, Citation, Citation Analysis, Developed, E-Commerce, Evaluation, Evidence, Experimental, Experts, History, Image, Impact, Indicators, Interdisciplinary, Journals, Mining, Paper Ranking, Papers, Peer-Reviewed, Publications, Ranking, Reference, Rights, Scientometrics, Self-Citation

? Papavlasopoulos, S., Poulos, M., Korfiatis, N. and Bokos, G. (2010), A non-linear index to evaluate a journal’s scientific impact. *Information Sciences*, **180** (11), 2156-2175.

Full Text: 2010\Inf Sci180, 2156.pdf

Abstract: The purpose of this study is to define a bibliometric indicator of the scientific impact of a journal, which combines objectivity with the ability to bridge many different bibliometric factors and in particular the side factors presented along with celebrated ISI impact factor. The particular goal is to determine a standard threshold value in which an independent self-organizing system will decide the correlation between this value and the impact factor of a journal. We name this factor “Cited Distance Factor (CDF)” and it is extracted via a well-fitted, recurrent Elman neural network. For a case study of this implementation we used a dataset of all journals of cell biology, ranking them according to the impact factor from the Web of Science Database and then comparing the rank according to the cited distance. For clarity reasons we also compare the cited distance factor with already known measures and especially with the recently introduced eigenfactor of the institute of scientific information (ISI). (C) 2010 Elsevier Inc. All rights reserved.

Keywords: Bibliometric, Bibliometrics, Biology, Citations, Elman Neural Network, Impact, Impact Factor, Information, ISI, Journal, Journals, Neural-Networks, Ranking, Science, Scientific Information, Semantic Classification, System, Units, Web of Science

? Papavlasopoulos, S., Poulos, M., Korfiatis, N. and Bokos, G. (2010), A non-linear index to evaluate a journal’s scientific impact. *Information Sciences*, **180** (17), 2156-2175.

Full Text: [2010\Inf Sci180, 2156.pdf](2010/Inf%20Sci180,%202156.pdf)

Abstract: The purpose of this study is to define a bibliometric indicator of the scientific impact of a journal, which combines objectivity with the ability to bridge many different bibliometric factors and in particular the side factors presented along with celebrated ISI impact factor. The particular goal is to determine a standard threshold value in which an independent self-organizing system will decide the correlation between this value and the impact factor of a journal. We name this factor “Cited Distance Factor (CDF)” and it is extracted via a well-fitted, recurrent Elman neural network. For a case study of this implementation we used a dataset of all journals of cell biology, ranking them according to the impact factor from the Web of Science Database and then comparing the rank according to the cited distance. For clarity reasons we also compare the cited distance factor with already known measures and especially with the recently introduced eigenfactor of the institute of scientific information (ISI).

Keywords: Bibliometrics, Semantic Classification, Elman Neural Network, Impact Factor

? Szymanski, B.K., de la Rosa, J.L. and Krishnamoorthy, M. (2012), An Internet measure of the value of citations. *Information Sciences*, **185** (1), 18-31.

Full Text: [2012\Inf Sci185, 18.pdf](2012/Inf%20Sci185,%2018.pdf)

Abstract: A new method for computing the value of citations is introduced and compared with the PageRank algorithm for author ranking. In our proposed approach, the value of each publication is expressed in CENTs (sCientific currENcy Tokens). The publication’s value is then divided by the number of citations made by that publication to yield a value for each citation. As citations are the acknowledgements of the work by authors other than oneself (indicating that it has been useful), self-citations count as zero in acknowledged citation value. Circular citations, a generalized type of self-citation, are considered to have a reduced acknowledged citation value. Finally, we propose a modification of the h-index to define it as the largest integer such that the i-th publication (on the list of publications sorted by their value in CENTs) is worth more than i CENTs. This new index, termed the i-index or i(2) in short, appears to be a more precise measure of the impact of publications and their authors’ productivity than the h-index. (C) 2011 Elsevier Inc. All rights reserved.

Keywords: Algorithm, Author, Author Ranking, Authors, Bibliometrics, Citation, Citation Analysis, Citations, h Index, h-Index, Impact, Impact Factor, Internet, Modification, Pagerank, Pagerank, Productivity, Publication, Publications, Ranking, Scientometrics, Self-Citation

# Title: Information Scientist

Full Journal Title: Information Scientist

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Aiyepeku, W.O. (1975), Bibliometrics in information-science curricula. *Information Scientist*, **9** (1), 29-34.

# Title: Information Society

Full Journal Title: Information Society

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Cronin, B. and Shaw, D. (2007), Peers and spheres of influence: Situating Rob Kling. *Information Society*, **23** (4), 221-233.

Abstract: In this article we employ a number of bibliometric techniques to capture Rob Kling’s intellectual impact and influences over the course of his varied career. We analyze his many publications in terms of type, topic, impact, and rate of co-authorship. We provide a detailed deconstruction of his citation identity (all those scholars whom he cited) and also his citation image makers (all those scholars who cited his work). In addition, we analyze acknowledgment data to gain deeper insights into the sociocognitive networks that sustained, and were sustained by Kling throughout his career.

Keywords: Acknowledgment, Bibliometric, Citation, Citation Analysis, Co-Authorship, Coauthorship, Collaboration, Impact, Publications, Scholarly Communication, Social Informatics, Social Networks

# Title: Information-An International Interdisciplinary Journal

Full Journal Title: [Information-An International Interdisciplinary Journal](http://www.revue-i3.org/index.php)

ISO Abbrev. Title: Information

JCR Abbrev. Title: Information-Tokyo

ISSN: 1343-4500

Issues/Year: 6

Language: English

Journal Country/Territory: Japan

Publisher: Int Information Inst

Publisher Address: Fac Eng, Hosei Univ, Koganei, Tokyo 184-8584, Japan

Subject Categories:

Engineering, Multidisciplinary: Impact Factor 0.099, 71/79 (2009)

? Kwon, O., Seo, J., Noh, K., Kim, J., Kim, J.S. and Shin, S.Y. (2007), Categorizing influential patents using bibliometric analysis of patent citations network. *Information-An International Interdisciplinary Journal*, **10** (3), 313-326.

Full Text: 2007\Inf-Int Int J10, 313.pdf

Abstract: Recently, research for network has been actively progressing. Internet, bio-metabolic, and coauthor networks of scientific thesis has a decreasing distribution to power law. However, researches on network utilizing patent information have not been very active. It suggests the method calculating large sparse matrix by supercomputer, examining patent network distribution by bibliographic coupling and co-citation, and identifying influential patents. The majority of studies, which are targeted to find Hub patents, are using the number of forward citation of patents. Yet the most recent technological convergences among different fields have been enforced, and the development of this fusion technology has been rapidly progressing. Therefore the forward citation of patent occurs in the applicable field of technologies as well as in other fields of technology; the method to find influential patents within the applicable field of technology is using only the number of forward citation of patents that may cause severe distortions. This study will explore three types of influential patents by minimizing the distortion phenomenon accompanied by the number of patent forward citation. To serve this purpose, the patent classification method is using bibliographic coupling and co-citation analysis used in knowledge search.

Keywords: Analysis, Bibliographic Coupling, Bibliometric, Bibliometric Analysis, Citation, Citations, Classification, Co-Citation, Co-Citation Analysis, Cocitation, Development, Distribution, Field, Fusion, Influential Patent Search, Information, Internet, Knowledge, Law, Matrix, Network, Networks, Patent, Patent Citations, Patents, Power, Power Law, Purpose, Research, Technologies, Technology

? Lee, H.J., Kang, J. and Moon, Y. (2007), Network analysis of solar cell-related patent information. *Information-An International Interdisciplinary Journal*, **10** (3), 351-363.

Full Text: 2007\Inf-Int Int J10, 351.pdf

Abstract: In this paper, the result of quantitative analysis on solar cell-related patent information is provided. The analysis covers basic quantitative analysis on bibliometric information such as patent counts, patent assignees, inventors, and network analysis on patent assignees and inventors. Co-patenting pattern and other results such as evolution of networks were found from patent assignee and inventor network analysis. The patent data were collected from DWPI (Derwent World Patent Index(R)) database.

Keywords: Analysis, Bibliometric, Data, Database, Evolution, Information, Network, Network Analysis, Networks, Patent, Pattern, Quantitative Analysis, Similarity, Solar Cell

? Kim, W.J. and Seo, J. (2007), Evaluation of an individual’s scientific productivity using author rank. *Information-An International Interdisciplinary Journal*, **10** (3), 365-372.

Full Text: 2007\Inf-Int Int J10, 365.pdf

Abstract: There are many measuring tool to evaluate individual’s or institutional scientific productivity using scientific articles based on bibliometrics. Especially succeeding discussions are accomplished at an trial for individual’s scientific productivity after Hirsch’s 2005 proposal using h-index. and there are many succeeding discussions and applications to evaluate journals, articles and qualitative level of researchers using h-index, g-index, y-index. But these indices have a same indices without regard to first author-or other co-author if a article has a same number of citations. This research aims to propose K-index integrated between these indices and author rank.

Keywords: Author Evaluation, Bibliometrics, Citations, Co-Author, First, g Index, g-Index, h Index, h-Index, Index, Journals, KG-Index, KH-Index, Outcome Evaluation, Qualitative, Rank, Research, Trial

? Ahn, S., Kang, J. and Lee, H.J. (2011), Research trends in condensed matter physics based on bibliometric analysis. *Information-An International Interdisciplinary Journal*, **14** (5), 1745-1760.

Full Text: 2011\Inf-Int Int J14, 1745.pdf

Abstract: in this paper the research trends in condensed matter physics are investigated based on bibliometric analysis of journal articles collected from the Web of Science (WoS) database for the selected 37 main journals. The analyses are performed from the journal articles published between 1996 and 2005 on the aspects of megatrend, country, research institute, research level and global collaboration network. The research result covers the qualitative analysis based on impact factor and citation as well as the basic quantitative analysis. The result of this study was provided to the policy makers as a complementary material of guidelines for science & technology.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Citation, Collaboration, Condensed Matter Physics, Guidelines, Impact, Impact Factor, Journal, Journal Article, Journals, Physics, Policy, Quantitative, Research, Research Trends, Science, Trends, Web of Science, WOS

# Title: Information and Software Technology

Full Journal Title: [Information and Software Technology](http://www.sciencedirect.com/science?_ob=PublicationURL&_cdi=5642&_pubType=J&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=8fbcd59f32588d005329374935fc7539)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wohlin, C. (2005), Most cited journal articles in software engineering. *Information and Software Technology*, **47** (15), 955.

Full Text: [2005\Inf Sof Tec47, 955.pdf](2005/Inf%20Sof%20Tec47,%20955.pdf)

Keywords: Journal, Software, Software Engineering

? Wohlin, C. (2005), An analysis of the most cited articles in software engineering journals - 1999. *Information and Software Technology*, **47** (15), 957-964.

Full Text: [2005\Inf Sof Tec47, 957.pdf](2005/Inf%20Sof%20Tec47,%20957.pdf)

Abstract: Citations and related work are crucial in any research to position the work and to build on the work of others. A high citation count is an indication of the influence of specific articles. The importance of citations means that it is interesting to analyze which articles are cited the most. Such an analysis has been conducted using the ISI Web of Science to identify the most cited software engineering journal articles published in 1999. The objective of the analysis is to identify and list the articles that have influenced others the most as measured by citation count. An understanding of which research is viewed as most valuable to build upon may provide valuable insights into what research to focus on now and in the future. Based on the analysis, a list of the 20 most cited articles is presented here. The intention of the analysis is twofold. First, to actually show the most cited articles, and second, to invite the authors of the most cited articles in 1999 to contribute to a special issue of Information and Software Technology. Five invited authors have accepted the invitation and their articles are appearing in this special issue. Moreover, the research topics and methods of the most cited articles in 1999 are compared with those from the most cited articles in 1994 to provide a picture of similarities and differences between the years. (c) 2005 Elsevier B.V. All rights reserved.

? Wohlin, C., Elbaum, S. and Shepperd, M. (2007), Most cited journal articles in software engineering. *Information and Software Technology*, **49** (1), 1.

Full Text: [2007\Inf Sof Tec49, 1.pdf](2007/Inf%20Sof%20Tec49,%201.pdf)

Keywords: Journal, Software, Software Engineering

Wohlin, C. (2007), An analysis of the most cited articles in software engineering journals - 2000. *Information and Software Technology*, **49** (1), 2-11.

Full Text: [2007\Inf Sof Tec49, 2.pdf](2007/Inf%20Sof%20Tec49,%202.pdf)

Abstract: Citations and related work are crucial in any research to position the work and to build on the work of others. A high citation count is an indication of the influence of specific articles. The importance of citations means that it is interesting to analyze which articles are cited the most. Such an analysis has been conducted using the ISI Web of Science to identify the most cited software engineering journal articles published in 2000. The objective of the analysis is to identify and list the articles that have influenced others the most as measured by citation count. An understanding of which research is viewed by the research community as most valuable to build upon may provide valuable insights into what research to focus on now and in the future. Based on the analysis, a list of the 20 most cited articles is presented here. The intention of the analysis is twofold. First, to identify the most cited articles, and second, to invite the authors of the most cited articles in 2000 to contribute to a special issue of Information and Software Technology. Five authors have accepted the invitation and their articles appear in this special issue. Moreover, an analysis of the most cited software engineering journal articles in the last 20 years is presented. The presentation includes both the most cited articles in absolute numbers and the most cited articles when looking at the average number of citations per year. The article describing the SPIN model checker by G.J. Holzmann published in 1997 is first on both these lists.

Keywords: Analysis, Bibliometric Research, Citations, Community, Importance, ISI, Model, Position, Research, Software, Software Engineering, Spin

? Wohlin, C. (2008), Introduction to section most cited journal articles in software engineering. *Information and Software Technology*, **50** (1-2), 2.

Full Text: [2008\Inf Sof Tec50, 2.pdf](2008/Inf%20Sof%20Tec50,%202.pdf)

Keywords: Journal, Software, Software Engineering

? Wohlin, C. (2008), An analysis of the most cited articles in software engineering journals - 2001. *Information and Software Technology*, **50** (1-2), 3-9.

Full Text: [2008\Inf Sof Tec50, 3.pdf](2008/Inf%20Sof%20Tec50,%203.pdf)

Abstract: Citations and related work are crucial in any research to position the work and to build on the work of others. A high citation count is an indication of the influence of specific articles. The importance of citations means that it is interesting to analyze which articles are cited the most. Such an analysis has been conducted using the ISI Web of Science to identify the most cited software engineering journal articles published in 2001. The objective of the analysis is to identify and list the articles that have influenced others the most as measured by citation count. An understanding of which research is viewed by the research community as most valuable to build upon may provide valuable insights into what research to focus on now and in the future. Based on the analysis, a list of the 20 most cited articles is presented here. The intention of the analysis is twofold. First, to identify the most cited articles, and second, to invite the authors of the most cited articles in 2001 to contribute to a special section of Information and Software Technology. Three authors have accepted the invitation and their articles appear in this special section. Moreover, an analysis has been conducted regarding which authors are most productive in terms of software engineering journal publications. The latter analysis focuses on the publications in the last 20 years, which is intended as a complement to last year’s analysis focusing on the most cited articles in the last 20 years [C. Wohlin, An Analysis of the Most Cited Articles in Software Engineering Journals - 2007, Information and Software Technology 49 (1) 2-11]. The most productive author in the last 20 years is Professor Victor Basili. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Authors, Bibliometric Research, Citation, Citations, Indication, Journal Articles, Journals, Publications, Research, Science, Software Engineering, Web Of Science

? Wohlin, C. (2009), Introduction to section most cited journal articles in Software Engineering. *Information and Software Technology*, **51** (1), 1.

Full Text: [2009\Inf Sof Tec51, 1.pdf](2009/Inf%20Sof%20Tec51,%201.pdf)

Keywords: Journal

? Wohlin, C. (2009), An analysis of the most cited articles in software engineering journals-2002. *Information and Software Technology*, **51** (1), 2-6.

Full Text: [2009\Inf Sof Tec51, 2.pdf](2009/Inf%20Sof%20Tec51,%202.pdf)

Abstract: Citations and related work are crucial in any research to position the work and to build on the work of others. A high citation count is an indication of the influence of specific articles. The importance of citations means that it is interesting to analyze which articles are cited the most. Such an analysis has been conducted using the ISI Web of Science to identify the most cited software engineering journal articles published in 2002. The objective of the analysis is to identify and list the articles that have influenced others the most as measured by citation count. An understanding of which research is viewed by the research community as most valuable to build upon may provide valuable insights into what research to focus on now and in the future. Based on the analysis, a list of the 20 most cited articles is presented here. The intention of the analysis is twofold. First, to identify the most cited articles, and second, to invite the authors of the most cited articles in 2002 to contribute to a special section of Information and Software Technology. Six authors have accepted the invitation and their articles appear in this special section. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Analysis, Authors, Bibliometrics, Citation, Citation Analysis, Citation Count, Citations, Community, Engineering, Indication, Influence, Intention, ISI, ISI Web of Science, Journal, Journal Articles, Objective, Research, Rights, Science, Scientometrics, SI, Software, Software Engineering, Understanding, Web of Science, Work

# Title: The Information Society

Full Journal Title: The Information Society

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Palmer, C.L. and Malone, C.K. (2001), Elaborate isolation: Metastructures of knowledge about women. *The Information Society*, **17** (3), 179-194.

Abstract: This paper examines the category of “Woman” within the metastructure of a system of knowledge organization. We trace the subject scheme used to list books about women in a standard bibliographic guide over the first three-quarters of the twentieth century.Building on the feminist critique of subject representation, our analysis documents how the category was continually constructed over time, providing evidence of multiplication, isolation, and confusion in the process. The outcome is a framework that fails to capture the complex nature of knowledge about women and conceals relationships to the larger body of knowledge. The case of this legacy system exemplifies problems associated with representing the complexity and integration of knowledge and provides a basis for considering the potential residual impacts of current information organization and navigation systems.

Keywords: Feminist Theory Knowledge Organization Metastructure Subject Access Subject Representation

# Title: Information Storage and Retrieval

[Continued as [Information Processing & Management](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5948&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=f35a70b413655ede29ab59e469f919fd)](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5948&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=f35a70b413655ede29ab59e469f919fd)

Full Journal Title: [Information Storage and Retrieval](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=7272&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=8b5f69a91002115440b541d78d2352e8)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kessler, M.M. (1963), Bibliographic coupling extended in time: Ten case histories. *Information Storage and Retrieval*, **1** (4), 169-187.

Full Text: [1960-80\Inf Sto Ret7, 169.pdf](1960-80/Inf%20Sto%20Ret7,%20169.pdf)

Abstract: The methods of bibliographic coupling were applied to 8186 papers in thirty-five volumes of the *Physical Review* (Vol. 77, 1950 to Vol. 111, 1958). The results are reported in the form of ten case histories. Each case was chosen to illustrate a problem in information retrieval.

Zunde, P. and Slamecka, V. (1971), Predictive models of scientific progress. *Information Storage and Retrieval*, **7** (3), 103-109.

Full Text: [1960-80\Inf Sto Ret7, 103.pdf](1960-80/Inf%20Sto%20Ret7,%20103.pdf)

Abstract: Progress in science is essentially determined by the stimulating effects of information accumulation and transfer. Hence dynamic characteristics of information flow together with the structural properties of the flow network in the society should be indicative of the major thrusts of science progress as well as of its rate of development.

In this paper, a Markov chain model of science development is proposed and described. It is based on the assumption that the most recent thrusts of scientific inquiry exert a decisive influence on the trends of the next immediate stage of development of science. The application of this model is demonstrated on a sample of citation data in social science. The analysis of this data in terms of the proposed model shows a clear tendency of shifting emphasis of scientific inquiry from science and technology to social science subjects.

Saracevic, T. (1971), Five years, five volumes and 2345 pages of the annual review of information science and technology. *Information Storage and Retrieval*, **7** (3), 127-139.

Full Text: [1960-80\Inf Sto Ret7, 127.pdf](1960-80/Inf%20Sto%20Ret7,%20127.pdf)

Cuadra, C.A. (1971), Comments on: Five years, five volumes and 2345 pages of the annual review of information science and technology by Tefko Saracevic: Annual Review of Information Science and Technology. *Information Storage and Retrieval*, **7** (3), 141-146.

Full Text: [1960-80\Inf Sto Ret7, 141.pdf](1960-80/Inf%20Sto%20Ret7,%20141.pdf)

Borenius, G. and Schwarz, S. (1972), Remarks on the use of citation data in predictive models of scientific activity. *Information Storage and Retrieval*, **8** (4), 171-175.

Full Text: [1960-80\Inf Sto Ret8, 171.pdf](1960-80/Inf%20Sto%20Ret8,%20171.pdf)

Abstract: The relations between data, information and prediction are discussed with reference to a suggested Markov model for forecasting of the structure of scientific activity. A conclusion is that the output of mathematical operations, i.e. the predicted “state” or activity distribution, is not related to the input as a deductive or probabilistic consequence of its real information content, but rather to information attributed to the data by assumptions inherent in the method.

This is a general difficulty in futures studies, namely that the openness of explanation of a phenomenon effectively limits the possibilities to extend the understanding of systems behaviour into predictive statements.

Weinberg, B.H. (1974), Bibliographic coupling: A review. *Information Storage and Retrieval*, **10** (5-6), 189-196.

Full Text: [1960-80\Inf Sto Ret10, 189.pdf](1960-80/Inf%20Sto%20Ret10,%20189.pdf)

Abstract:The theory and practical applications of bibliographic coupling are reviewed. The reviewer takes issue with the use of bibliographic coupling for information retrieval and automatic classification on logical grounds, and for reasons relating to uncontrolled citation practices. The usefulness of the procedure for the study of the science of science and bibliometrics is granted.

Rosenberg, B. (1974), Understanding scientific literatures: A bibliometric approach: Joseph C. Donhue. MIT Press, Cambridge, Mass., 1973. 101 pp. $10.00. ISBN 0-262-04049-5. *Information Storage and Retrieval*, **10** (11-12), 420-421.

Full Text: [I\Inf Sto Ret10, 420.pdf](I/Inf%20Sto%20Ret10,%20420.pdf)

# Title: Information Studies: Theory & Application

Full Journal Title: [Information Studies: Theory & Application](http://www.defenseonline.com.cn/qbll/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1000-7490

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhu, L. (2003), Quantitative analysis of research papers on information policies & regulations in China since 1990s. *Information Studies: Theory & Application*, **26** (4), 371-375.

Full Text: [2003\Inf Stu The App26, 371.pdf](2003/Inf%20Stu%20The%20App26,%20371.pdf)

Abstract: In order to grasp the present situation of researches on information policies and regulations,this paper makes a statistical analysis of the articles relating to information policies and regulations and issued from 1999 to 2001 in China by using the method of bibliometrics,including time distribution,space distribution,content,author and citations

Keywords: Information Policy, Regulation, Development Study, Bibliometric Method, China

? Zhao, X. (2009), Characteristic study of a new journal citation evaluation indicator Eigenfactor - Base on Chinese periodical’s data. *Information Studies: Theory & Application*, **32** (8), 53-56.

Full Text: [2009\Inf Stu The App32, 53.pdf](2009/Inf%20Stu%20The%20App32,%2053.pdf)

Abstract: Taking Chinese periodical as example, I combine with the correlation analysis and factor analysis to investigate the relationship between a new journal citation evaluation indicator Eigenfactor and other main indexes of journal evaluation. Moreover, the advantages and shortcomings of Eigenfactor are discussed.

Keywords: Eigenfactor, Journal Evaluation, Citation Analysis, Informetrics, Chinese Periodical

# Title: Information Systems in the Changing ERA: Theory and Practice

Full Journal Title: Information Systems in the Changing ERA: Theory and Practice

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhang, Y.C. and Liu, K.C. (2009), A bibliometric study on organisational semiotics literatures. *Information Systems in the Changing ERA: Theory and Practice*, 33-39.

Abstract: Since it came into being in the early 1990s, Organisational Semiotics (OS) has attracted quite a few academics carrying out research, both on the principle itself and on its application. Bibilometric can be used to find out active researchers and major research topics concerning OS. This study is based on 146 papers published between 1999 and 2007 at annual international workshops and conferences concerning OS. The information about authors, author affiliations and keywords are coded into a database. Statistical analysis reveals the most prolific researchers and institutions most actively involved with OS research, and the most researched topics. A program is developed in a multi-agent programmable modelling environment. By employing the program, the associations between research institutes and the co-occurrence of the research topics are investigated; maps visualizing those associations and co-occurrences are generated.

Keywords: Academic Community, Bibliometric, Literature Survey, Organisational Semiotics, Research

# Title: Information Systems Management

Full Journal Title: Information Systems Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Dwivedi, Y.K., Venkitachalam, K., Sharif, A.M., Al-Karaghouli, W. and Weerakkody, V. (2011), Research trends in knowledge management: Analyzing the past and predicting the future. *Information Systems Management*, **28** (1), 43-56.

Full Text: [2011\Inf Sys Man28, 43.pdf](2011/Inf%20Sys%20Man28,%2043.pdf)

Abstract: Through a meta-data analysis of the literature over a 34-year period, this article aims to provide a review and investigation into the knowledge management field in terms of how the domain is represented along a number of dimensions including unit of analysis, research paradigm employed, and the research topics/issues investigated. Information on a series of variables was extracted after conducting a review of 1,043 articles on KM, published in various peer-reviewed journals between 1974-2008. The findings suggest that a combination of positivist, empirical, conceptual/descriptive, and multi-method approaches have been predominantly used in the area. Organizational as well as systems and environmental context-based KM research were found to be the most widely published topics within the KM domain. Further, the authors identified literature gaps that require more exploration and conceptual refinement in the context of knowledge management research.

Keywords: Adoption, Analysis, Authors, Bibliometric Analysis, Bibliometric Analysis, Context, Environmental, Field, Information-Systems, Investigation, Issues, Journals, Knowledge, Knowledge Management, Literature, Management, Meta-Analysis, Paradigm, Peer Reviewed Journals, Peer-Reviewed, Profile, Research, Research Trends, Review, Strategy, Systems

# Title: Information Systems Research

Full Journal Title: [Information Systems Research](http://www.atypon-link.com/INF/loi/isre)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1047-7047

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Valacich, J.S., Fuller, M.A., Schneider, C. and Dennis, A.R. (2006), Issues and opinions - Publication opportunities in premier business outlets: How level is the playing field? *Information Systems Research*, **17** (2), 107-125.

Full Text: [2006\Inf Sys Res17, 107.pdf](2006/Inf%20Sys%20Res17,%20107.pdf)

Abstract: This paper reports an analysis of the proportion of faculty publishing articles in premier business journals (i.e., the ratio of authors of premier business journal articles to total faculty of a discipline) across the disciplines of accounting, finance, management, marketing, and information systems (IS) for the years 1994-2003. This analysis revealed that over this period the management discipline had on average the highest proportion of faculty publishing in premier journals (12.7 authors per 100 management faculty), followed by finance (9.4 authors per 100 faculty), marketing (9.2 authors per 100 faculty), IS (5.5 authors per 100 faculty), and accounting (4.8 authors per 100 faculty). A further analysis examined these ratios for the different disciplines over time, finding that the ratios of authors to faculty have actually decreased for the disciplines of marketing and IS over this time period but have remained stable for the disciplines of accounting, management, and finance. Given steady growth in faculty size of all disciplines, the proportion of faculty publishing articles in premier journals in 2003 for all disciplines is lower than their 10-year averages, with IS having the lowest proportion in 2003. A sensitivity analysis reveals that without substantial changes that would allow more IS faculty to publish in the premier journals (e.g., by increasing publication cycles, number of premier outlets; and so on), IS will continue to lag far below the average of other disciplines. The implications of these findings for IS researchers, for institutions and administrators of IS programs, and for the IS academic discipline are examined. Based on these implications, recommendations for the IS discipline are presented.

Keywords: Academic, Academic Discipline, Academic Promotion, Analysis, Averages, Discipline, Diversity, Empirical-Research, Faculty, Finance, Growth, Inequity, Information, Information-Systems Research, Institutions, Management, Paper, Promotion, Publication, Publishing, Recommendations, Relative Deprivation, Relevance, Research Journals, Research Standards, Scientometrics, Sensitivity, Sensitivity Analysis, Tenure

? Raghuram, S., Tuertscher, P. and Garud, R. (2010), Mapping the field of virtual work: A Cocitation analysis. *Information Systems Research*, **21** (4), 983-999.

Full Text: [2010\Inf Sys Res21, 983.pdf](2010/Inf%20Sys%20Res21,%20983.pdf)

Abstract: Interest in the area of virtual work continues to increase with articles being written from different disciplinary perspectives-e. g., information systems (IS), management, psychology, and transportation. In this paper, we map research on virtual work to (a) understand the intellectual base from which this field has emerged, (b) explore how this field has evolved over time, and (c) identify clusters of research themes that have emerged over time and the relationships between them. Specifically, we use cocitation analysis of research published in all social science disciplines to map the field at three points in time-1995, 2000, and 2006. Our results show that the field has grown from 9 research clusters in 1995 to 16 in 2006. A comparison across these maps suggests that research in the cluster of “virtual teams” has gained significance even as research in some earlier clusters such as “urban planning and transportation” has lost ground. Our longitudinal analysis identifies relevant concepts, theories, and methodologies that have emerged in the field of virtual work. This analysis can help interested researchers identify how they may want to contribute to the field of virtual work-by adding to popular clusters, by enriching emerging smaller clusters, or by acting as bridges across clusters.

Keywords: Analysis, At-Home, Bibliometric Analysis, Cluster, Cocitation, Collaboration, Communication, Comparison, Context, Electronic Mail, Field, Identification, Information, Information Systems, IS, Longitudinal, Longitudinal Analysis, Management, Methodologies, Organization, Patterns, Planning, Psychology, Research, Science, Scientific Literature, Significance, Social, Systems, Teams, Transportation, Virtual Teams, Virtual Work, Work

# Title: Information Technology and Libraries

Full Journal Title: [Information Technology and Libraries](http://www.ala.org/ala/lita/litapublications/ital/italinformation.htm)

ISO Abbreviated Title: Inf. Technol. Libr.

JCR Abbreviated Title: Inform Technol Libr

ISSN: 0730-9295

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Amer Library Assoc

Publisher Address: 50 E Huron St, Chicago, IL 60611

Subject Categories:

Information Science & Library Science: Impact Factor 0.200, 45/55 (2003) SSCI

? Lipetz, B.A. (1989), Informetrics 87/88 - Select Proceedings of the 1St International-Conference on Bibliometrics and the Theoretical Aspects of Information-Retrieval, Diepenbeek, Belgium, 25-28 August 1987 - Egghe, L, Rousseau, R. *Information Technology and Libraries*, **8** (4), 453-454

Keywords: Bibliometrics

Nicholson, S. (2003), The bibliomining process: Data warehousing and data mining for library decision making. *Information Technology and Libraries*, **22** (4), 146-151.

Full Text: [I\Inf Tec Lib22, 146.pdf](I/Inf%20Tec%20Lib22,%20146.pdf)

Abstract: Bibliomining, or data mining for libraries, is the application of data mining and bibliometric tools to data produced from library services. This article outlines the bibliomining process with emphasis on data warehousing issues. Methods for cleaning and anonymizing library data are presented with examples.

? Wormell, I. (2003), Matching subject portals with the research environment. *Information Technology and Libraries*, **22** (4), 158-164.

Full Text: [2003\Inf Tec Lib22, 158.pdf](2003/Inf%20Tec%20Lib22,%20158.pdf)

Abstract: This article presents methods for testing the usefulness of bibliometric methods for the evaluation of information resources located at subject portals. Two subject portals for social sciences have been selected as objects for the study: Sam Webb at Gothenburg University Library in Sweden and Bisigate at the Aarhus Business School Library, Denmark. To show how to capture the local users’ views and requirements in the development of portals, this article explores the results of the analyses targeting one of the selected institutions, Gothenburg University’s Department of Political Sciences. The study produced various types of lists as well as maps for monitoring the research and publication pattern of the department. These reports allow exploration and visualization of the research results of the institution in a form that is easy to read and understand for portal users. The content of the lists and maps was designed to provide information about which journals are relevant for the ongoing research activities in the department, and to identify useful links to professional institutions, organizations, persons, most cited publications, and authors. The study gathered quantitative data to measure how well the information resources of the portals match the research profile of the institutions.

? Garfield, E., Pudovkin, A.I. and Istomin, V.S. (2003), Mapping the output of topical searches in the Web of Knowledge and the case of Watson-Crick. *Information Technology and Libraries*, **22** (4), 183-187.

Full Text: [2003\Inf Tec Lib22, 183.pdf](2003/Inf%20Tec%20Lib22,%20183.pdf)

Abstract: HistCite(TM) is a system that generates chronological maps of subject (topical) collections resulting from searches of the Institute for Scientific Information Web of Science (WoS) or Science Citation Index, Social Sciences Citation Index, and Arts and Humanities Citation Index on CD-ROM. WoS export files are created in which all cited references for source documents are captured. These bibliographic collections are processed by HistCite, which generates chronological tables as well as historiographs that highlight the most-cited works in and outside the collection. Articles citing the 1953 primordial Watson-Crick paper on the structure of DNA will be used as a demonstration. Real-time dynamic genealogical historiographs will be shown. HistCite also includes a module for detecting and editing errors or variations in cited references. Export Files of five thousand or more records are processed in minutes on a PC. Ideally the system will be used to help the searcher quickly identify the most significant work on a topic and enable the searcher to trace its year-by-year historical development.

Keywords: Science

# Title: Ingenieria Quimica

Full Journal Title: Ingenieria Quimica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Aspirot, R., Ohanian, M., Hermida, S. and Bussi, J. (2000), Preparation of adsorbents material from agricultural byproducts. *Ingenieria Quimica*, **17**, 38-44.

Abstract: Rice husk and wood sawdust display adsorbent properties permitting them to retain metalic ions on its surface. Their adsorbent capacity can be modified and in some cases improved by simple pretreatment operations. Pretreatment with hot diluted sodium hydroxide leads to the best behavior Copper ions adsorption both on rice husk and sawdust fits a Langmuir adsorption model. Chromium adsorption depends markedly on pH of the solution. The separation of small amounts of metals in aqueous solution by using these solids can take place with efficiencies higher than 90%

Keywords: Adsorbent, Adsorbents, Adsorption, Removal, Sawdust, Sorption, Wood

? Carmona, M.E.R., Da Silva, M.A.P. and Leite, S.G.F. (2000), Bloadsorption of Cr3+ and Cr6+ using residual yeast from beer breweries. *Ingenieria Quimica*, **24**, 53-65.

Abstract: The sorption of Cr3+ and Cr6+ on residual *Saccharomyces cerevisiae* yeas from the beer industry, was studied in relation to pH, metallic concentration in the sorption solution, bioadsorbent concentration and adsorption time.

The optimum time of the process was found by determining the bioadsorption kinetic, where it was found that the appropriate time for the biosorption runs was 12 hours.

Using experimental design of the surface response with rotatable, orthogonal star type, the effect of each one of the variables and their interactions was evaluated, it was determined that the pH had the most influence, followed by the concentration of the metal. The concentration of the biosorbent did not affect the process substantially. Experimental design was used to optimize the bioadsorption process related to the previously mentioned variables, a maximum value of 35% Cr3+ y 39% Cr6+ remotion in the following conditions: pH (4.34, 1.66), 5.68 g/L of biosorbent concentration and (280, 139) ppm of metallic concentration.

With the optimum values of pH, the biosorption concentration isotherm was built between 30 and 300 ppm of initial metallic concentration. The maximum capacity was 8 and 20 mg of metal / g of biosorbent respectively.

Keywords: Saccharomyces-Cerevisiae, Phanerochaete-Chrysosporium, Industrial Effluents, Aqueous-Solutions, Heavy-Metals, Biosorption, Removal, Biosorbent, Chromium(III), Cadmium

? Rojas-Sola, J.I. and San-Antonio-Gomez, C. (2010), Bibliometric analysis of uruguayan scientific publications in the engineering, chemical and Web of Science category (1997-2008). *Ingenieria Quimica*, **38**, 33-37.

Full Text: [2010\Ing Qui38, 33.pdf](2010/Ing%20Qui38,%2033.pdf)

Keywords: Bibliometric, Indicators, Publications, Science, Web of Science

# Title: Inhalation Toxicology

Full Journal Title: [Inhalation Toxicology](http://informahealthcare.com/loi/iht)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Qiu, H. and Chen, Y.F. (2009), Bibliometric analysis of nicotine research in China during the period of 1991 to 2007. *Inhalation Toxicology*, **21** (8-11), 965-971.

Full Text: [2009\Inh Tox21, 965.pdf](2009/Inh%20Tox21,%20965.pdf)

Abstract: With the widespread exposure of people to nicotine through recreational use of tobacco products, research into nicotine has attracted increasing attention. Tobacco smoking is by far the most important cause of lung cancer. As the world’s largest producer and consumer of tobacco products, China bears a large proportion of the global burden of smoking-related disease; therefore, information on nicotine publications should be collected to formulate future research policy. In the present study, we investigated nicotine-related research articles published by Chinese authors that were indexed in the Science Citation Index (SCI) from 1991 to 2007. An indicator “citations per publication” (CPP) was used in the study to evaluate the impact of journals, articles, and institutes. The quantity of publications has increased at a quicker pace than the worldwide trend. Article visibility, measured as the frequency of being cited, also increased during the period. However, the overall quality of articles, based on the impact factor of journals publishing those articles, dropped behind the worldwide average level. There has been an increase in international collaboration, mainly with researchers in the USA. The average CPP of international co-authorship articles was higher than that of single country publications. Besides the USA, nicotine research in China will benefit from more collaboration with Taiwan, England, and Germany. Some 110 of 264 articles were published by a single institute, and the top six institutes were compared from various angles. Seventy-two subject categories were covered, and trends (in terms of both quantity and quality) of nicotine research in China were compared with worldwide trends. In addition, analysis of keywords in both nicotine and lung cancer research fields was applied to indicate research interests. Mutual cooperation among multiple disciplines needs further strengthening.

Keywords: Smoking, Addiction

# Title: Injury-International Journal of the Care of the Injured

Full Journal Title: Injury-International Journal of the Care of the Injured

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Beswick, A. and Blom, A.W. (2011), Bone graft substitutes in hip revision surgery: A comprehensive overview. *Injury-International Journal of the Care of the Injured*, **42**, S40-S46.

Full Text: [2011\Inj-Int J Car Inj42, S40.pdf](2011/Inj-Int%20J%20Car%20Inj42,%20S40.pdf)

Abstract: Introduction: Total hip replacement is increasingly used to treat diseased and damaged joints. With time, some joint replacements may require revision, mainly because of instability and mechanical loosening, and this is of particularly significance to younger patients. A major problem in revision surgery is the loss of bone stock and the consequent difficulty in reconstructing a stable joint. Loss of bone stock has been widely treated using bone autografts and allografts but supplies are limited. Use of bone graft substitutes in combination with, or as a substitute for, human bone is a possible alternative. Aim: To identify empirical studies of bone graft substitutes in hip revision surgery. Methods: Systematic review based on Cochrane and MOOSE methods. We searched MEDLINE and EMBASE to December 2010 with terms relating to hip replacement and bone graft substitutes, and checked key citations in ISI Web of Science and reference lists. We considered all human studies irrespective of study design. Results: Searches identified 397 articles. Screening of abstracts and full text articles identified 7 studies reporting outcomes of bone-graft substitute combined with autograft or allograft, and 6 studies reporting outcomes of bone graft substitute exclusively. One economic evaluation compared costs of femoral head banking with costs of bone graft substitutes. No randomised controlled trials evaluating bone graft substitute effectiveness were identified. Studies generally included small numbers of patients with a follow up too short to assess outcomes relating to implant survival. However, excepting those based on glass ceramic, ceramic bone graft substitutes show promise as an alternative to use of exclusive autograft or allograft. In the case of calcium phosphate ceramic bone graft substitute, potential cost savings were evident. Conclusion: With increased allograft shortage, bone graft substitutes will be required in hip revision surgery. However, appropriately designed randomised controlled trials are required to compare use of existing and new bone graft substitutes with established practice. As well as prosthesis related outcomes, studies should explore the patient experience of revision hip replacement with bone graft substitute material. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Acetabulum, Allograft, Author, Bone, Bone Graft, Bone Substitute, Calcium, Citations, Cochrane, Costs, Design, Effectiveness, Embase, England, Epidemiology, Evaluation, Follow-Up, Hip Replacement, Human, Hydroxyapatite, Impaction, Implant, ISI, ISI Web of Science, Joint, Knee Arthroplasty, Medline, Methods, Osteoarthritis, Outcomes, Overview, Patient Experience, Patients, Phosphate, Practice, Prosthesis, Replacement, Review, Science, Screening, Surgery, Survival, Systematic, Systematic Review, United-States, Web of Science

# Title: Injury Prevention

Full Journal Title: Injury Prevention

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bunn, F., Collier, T., Frost, C., Ker, K., Roberts, I. and Wentz, R. (2003), Traffic calming for the prevention of road traffic injuries: Systematic review and meta-analysis. *Injury Prevention*, **9** (3), 200-204.

Full Text: [2003\Inj Pre9, 200.pdf](2003/Inj%20Pre9,%20200.pdf)

Abstract: Objective: To assess whether area-wide traffic calming schemes can reduce road crash related deaths and injuries. Design: Systematic review and meta-analysis. Data sources: Cochrane Injuries Group Specialised Register, Cochrane Central Register of Controlled Trials, Medline, EMBASE, Sociological Abstracts Science (and social science) citation index, National Technical Information service, Psychlit, Transport Research Information Service, International Road Research Documentation, and Transdoc, and web sites of road safety organisation were searched; experts were contacted, conference proceedings were handsearched, and relevant reference lists were checked. Inclusion criteria: Randomised controlled trials, and controlled before/after studies of area-wide traffic calming schemes designed to discourage and slow down through traffic on residential roads. Methods: Data were collected on road user deaths, injuries, and traffic crashes. For each study rate ratios were calculated, the ratio of event rates before and after intervention in the traffic calmed area divided by the corresponding ratio of event rates in the control area, which were pooled to give an overall estimate using a random effects model. Findings: Sixteen controlled before/after studies met our inclusion criteria. Eight studies reported the number of road user deaths: pooled rate ratio 0.63 (95% confidence interval (CI) 0.14 to 2.59). Sixteen studies reported the number of injuries (fatal and non-fatal): pooled rate ratio 0.89 (95% CI 0.80 to 1.00). All studies were in high income countries. Conclusion: Area-wide traffic calming in towns and cities has the potential to reduce road traffic injuries. However, further rigorous evaluations of this intervention are needed, especially in low and middle income countries.

Keywords: Citation Index, Prevention, Review, Systematic Review

? Karkhaneh, M., Kalenga, J.C., Hagel, B.E. and Rowe, B.H. (2006), Effectiveness of bicycle helmet legislation to increase helmet use: A systematic review. *Injury Prevention*, **12** (2), 76-82.

Full Text: 2006\Inj Pre12, 76.pdf

Abstract: Background: Head injuries related to bicycle use are common and can be serious. They can be prevented or reduced in severity with helmet use; however, education has resulted in modest helmet use in most developed countries. Helmet legislation has been proposed as a method to increase helmet wearing; while this social intervention is thought to be effective, no systematic review has been performed. Objectives: This review evaluates the scientific evidence for helmet use following legislation to identify the effectiveness of legislative interventions to increase bicycle helmet use among all age groups. Search strategy: Comprehensive searches of CENTRAL, MEDLINE, EMBASE, CINAHL, Web of Science, British Education Index, LILACS Database, TRIS (Transport Research Information Service), the grey literature, reference lists, and communication with authors was performed to identify eligible studies. Selection criteria: Eligible studies for this review were community based investigations including cohort studies, controlled before-after studies, interrupted time series studies, non-equivalent control group studies Data collection and analysis: Two reviewers extracted the data regarding the percentage of helmet use before and after legislation from each study. Individual and pooled odds ratios were calculated along with 95% confidence intervals. Main results: Out of 86 prescreened articles, 25 were potentially relevant to the topic and 11 were finally included in the review. of 11 studies, eight were published articles, two were published reports, and one was an unpublished article. One additional survey was incorporated following personal communication with the author. While the baseline rate of helmet use among these studies varied between 4% and 59%, after legislation this range changed to 37% and 91%. Helmet wearing proportions increased less than 10% in one study, 10 - 30% in four studies, and more than 30% in seven studies. While the effectiveness of bicycle helmet legislation varied (n = 11 studies; OR range: 1.2-22), all studies demonstrated higher proportions of helmet use following legislation, particularly when the law was targeted to a specific age group. Conclusions: Legislation increased helmet use among cyclists, particularly younger age groups and those with low pre- intervention helmet wearing proportions. These results support legislative interventions in populations without helmet legislation.

Keywords: Analysis, Australia, Author, Authors, Campaign, Children, Cohort Studies, Communication, Confidence Intervals, Control, Education, Effectiveness, Embase, Florida, Head-Injuries, Intervention, Interventions, Literature, Medline, Promotion, Research, Review, Science, Search Strategy, Social, State-Law, Strategy, Survey, Systematic, Systematic Review, Trauma, Victoria, Web of Science

? Lawrence, D.W. (2008), What is lost when searching only one literature database for articles relevant to injury prevention and safety promotion? *Injury Prevention*, **14** (6), 401-404.

Full Text: 2008\Inj Pre14, 401.pdf

Abstract: Objective: To assess what is lost if only one literature database is searched for articles relevant to injury prevention and safety promotion (IPSP) topics. Method: Serial textword (keyword, free-text) searches using multiple synonym terms for five key IPSP topics (bicycle-related brain injuries, ethanol-impaired driving, house fires, road rage, and suicidal behaviors among adolescents) were conducted in four of the bibliographic databases that are most used by IPSP professionals: EMBASE, MEDLINE, PsycINFO, and Web of Science. Through a systematic procedure, an inventory of articles on each topic in each database was conducted to identify the total unduplicated count of all articles on each topic, the number of articles unique to each database, and the articles available if only one database is searched. Results: No single database included all of the relevant articles on any topic, and the database with the broadest coverage differed by topic. A search of only one literature database will return 16.7-81.5% (median 43.4%) of the available articles on any of five key IPSP topics. Each database contributed unique articles to the total bibliography for each topic. Conclusion: A literature search performed in only one database will, on average, lead to a loss of more than half of the available literature on a topic.

Keywords: Adolescents, Bibliographic, Bibliographic Databases, Bibliography, Brain, Brain Injuries, Coverage, Databases, Driving, Embase, Index, Injury, Injury Prevention, Interventions, Journal Articles, Lead, Literature, Medline, Online Databases, Prevention, Promotion, Randomized Controlled-Trials, Rehabilitation, Safety, Science, Systematic, Systematic Reviews, Topics, Web of Science

? Cusimano, M.D. and Sameem, M. (2011), The effectiveness of middle and high school-based suicide prevention programmes for adolescents: A systematic review. *Injury Prevention*, **17** (1), 43-49.

Full Text: 2011\Inj Pre17, 43.pdf

Abstract: Objective To assess the effectiveness of middle and high school-based suicide prevention curricula. Data sources The following were searched: Ovid MEDLINE(R) in-process and other non-indexed citations and Ovid MEDLINE(R), Ovid Healthstar, CINAHL, PsycINFO, all EBM reviews-Cochrane DSR, ACP Journal Club, DARE, CCTR, CMR, HTA, and NHSEED, and the ISI Web of Science, until October 2009; government web pages for statistics and other demographic data in countries where they were available; citation lists of relevant articles. Review methods Randomised controlled studies, interrupted time series analyses with a concurrent comparison group, studies with follow-up examinations (post-test questionnaires and monitoring suicide rates), and middle to high school-based curriculum studies, including both male and female participants, were included. Results 36 potentially relevant studies were identified, eight of which met the inclusion criteria. Overall, statistically significant improvements were noted in knowledge, attitude, and help-seeking behaviour. A decrease in self reported ideation was reported in two studies. None reported on suicide rates. Conclusion Although evidence exists that school-based programmes to prevent suicide among adolescents improve knowledge, attitudes, and help-seeking behaviours, no evidence yet exists that these prevention programmes reduce suicide rates. Further well designed, controlled research is required before such programmes are instituted broadly to populations at risk.

Keywords: Adolescents, Attitude, Citation, Citations, Controlled Studies, Effectiveness, Follow-Up, Impact, ISI, Journal, Knowledge, Monitoring, Prevention, Questionnaires, Research, Review, Risk, Science, Statistics, Systematic, Systematic Review, Web of Science

# Title: Innovation-Management Policy & Practice

Full Journal Title: Innovation-Management Policy & Practice

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lee, P.C. and Su, H.N. (2010), Investigating the structure of regional innovation system research through keyword co-occurrence and social network analysis. *Innovation-Management Policy & Practice*, **12** (1), 26-40.

Abstract: Research on regional innovation systems (RIS) has evolved into a widely used analytical framework generating the empirical foundation for innovation policy making. The purpose of this research is to shed light on network-based author keyword analysis by integrating social network analysis and bibliometric analysis on the development of RIS research. A total of 432 papers belonging to 36 countries, 276 research institutes, and comprising 1165 keywords, are retrieved from the Web of Science databases for network construction and analysis. The obtained network in this study is capable of providing visual and quantitative insights into the publication trends or knowledge evolution of RIS. Network actors chosen in this study include country, research institute, first author, and keywords. These constitute four types of networks defined in this study: three research focus parallelship (RFP) networks (RFP-country network, RFP-institute network, RFP-author network) and one keyword co-occurrence (KCO) network.

Keywords: Centrality, Keyword Co-Occurrence Network, Knowledge Map, Network Theory, Publication, Regional Innovation System, Research Focus Parallelship Network

# Title: Innovation Policy and the Economy

Full Journal Title: Innovation Policy and the Economy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Murray, F. and Stern, S. (2006), When ideas are not free: The impact of patents on scientific research. *Innovation Policy and the Economy*, **7**, 33-69.

Abstract: This chapter describes the impact of formal intellectual property rights on the production and diffusion of “dual knowledge”-ideas that are simultaneously of value as a scientific discovery and as a useful, inventive construct. We argue that a great deal of knowledge generated in academia, particularly in the life sciences, falls into this category (sometimes referred to as Pasteur’s Quadrant). The production and diffusion of dual purpose knowledge challenges the premise of most science policy analysis, which is implicitly based on a clear separation between basic scientific knowledge and applied knowledge useful in the development of new technology. Instead, dual knowledge simultaneously makes both a basic and an applied contribution. We review qualitative and quantitative evidence relating to the policy challenges raised by the production and dissemination of dual knowledge, highlighting three broad findings. First, rather than facing a fundamental tradeoff between applied research and more fundamental scientific knowledge, research agencies can and do invest in dual purpose knowledge. Indeed, the dual purpose knowledge framework suggests a distinct rationale for public sector involvement in the funding and conduct of research: the social impact of a given piece of knowledge may be enhanced when knowledge is produced and disclosed in accordance with the norms of the scientific research community (particularly compared to secrecy). Second, we suggest that, within Pasteur’s Quadrant, the increased use of formal IPR seems to be significantly shaping the structure,conduct and performance of both university and industry researchers. On the one hand, from the perspective of individual researchers, patenting does not seem to come at the expense of scientific publication, and both respond to the process of scientific discovery. There is some evidence, however, that patent grant may reduce the extent of use of knowledge: the citation rate to a scientific article describing a dual-purpose discovery experiences a modest decline after patent rights are granted over that knowledge. Finally, the impact of patents may be indirect; rather than directly impacting behavior through patent enforcement, scientific conduct may be affected through related mechanisms such as material transfer agreements. Not simply a legal document within a seamless web of cooperation, nor a bludgeon to stop scientific progress in its tracks, patents seem to be changing the “rules of the game” for scientific exchange, cooperation, and credit.

Keywords: Analysis, Behavior, Biotechnology, Citation, Community, Cooperation, Deficiency Syndrome AIDS, Development, Diffusion, Discovery, Economics, Enforcement, Enzymatic Amplification, Evidence, Extreme Thermophile, Framework, Funding, Growth, Impact, Intellectual Property, Knowledge, Legal, Life, Life Sciences, Mechanisms, Norms, Patent, Patents, Performance, Policy, Policy Analysis, Progress, Property, Property Rights, Public, Public Sector, Publication, Purpose, Qualitative, Research, Retroviruses HTLV-III, Review, Rights, Science, Science Policy, Sciences, Scientific Progress, Scientific Research, Sector, Separation, Social, Technology, Thermus-Aquaticus, University, Value, Web

# Title: Innovations in Education and Teaching International

Full Journal Title: Innovations in Education and Teaching International

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Su, F. and Beaumont, C. (2010), Evaluating the use of a wiki for collaborative learning. *Innovations in Education and Teaching International*, **47** (4), 417-431.

Abstract: A wiki is able to provide a learning environment which is closely aligned with the social-constructivist approach and is more natural than many tools where open collaboration and the exchange of ideas are important. This case study analyses and evaluates essential aspects for the successful deployment of a wiki in a higher education setting using Salmon’s five-stage e-learning framework. Indicators of the learning benefits were determined by qualitative analysis of students’ wiki contributions. Students’ perceptions were captured through interviews and questionnaires at the start and end of the project, thereby providing indicators of their motivation towards this method of learning. Our results suggest that a wiki can promote effective collaborative learning and confidence in formative self and peer assessment by facilitating rapid feedback, vicarious learning through observing others’ contributions and easy navigation and tracking facilities. Student authorship was also encouraged. Issues identified included providing easy access to the wiki, lack of personalisation, possible vandalism and plagiarism. Also, students with learning difficulties might require extra help and take longer to familiarise themselves with this new e-learning environment.

Keywords: Assessment, Authorship, Collaboration, E-Learning, Education, Environment, Feedback, Higher Education, Indicators, Learning, Plagiarism, Questionnaires, Social Constructivism, Students, Wiki

# Title: Inorganic Chemistry

Full Journal Title: Inorganic Chemistry

ISO Abbreviated Title: Inorg. Chem.

JCR Abbreviated Title: Inorg Chem

ISSN: 0020-1669

Issues/Year: 26

Journal Country/Territory: United States

Language: English

Publisher: Amer Chemical Soc

Publisher Address: 1155 16th St, NW, Washington, DC 20036

Subject Categories:

Chemistry, Inorganic & Nuclear: Impact Factor

Polyakov, V.R., Sharma, V., Crankshaw, C.L. and Piwnica-Worms, D. (1998), Synthesis, molecular structure, and properties of a neutral Schiff base phenolic complex of magnesium. *Inorganic Chemistry*, **37** (18), 4740-4742.

Full Text: [I\Ino Che378, 4740.pdf](I/Ino%20Che378,%204740.pdf)

Keywords: Resistance P-Glycoprotein, Multidrug-Resistance, In-Vitro, Coordination, Expression, Reversal, Cancer, Metal, Ions, Mg

# Title: Inorganic Chemistry Communications

Full Journal Title: Inorganic Chemistry Communications

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Guerra, D.L., Viana, R.R. and Airoldi, C. (2009), Immobilization of 5-amino-1,3,4-thiadiazole-thiol onto analogue of heulandite for divalent toxic metals removal. *Inorganic Chemistry Communications*, **12** (11), 1145-1149.

Full Text: [2009\Ino Che Com12, 1145.pdf](2009/Ino%20Che%20Com12,%201145.pdf)

Abstract: The compound 5-amino-1,3,4-thiadiazole-thiol was anchored onto analogue of heulandite by heterogeneous route. The original (HEU) and modified heulandite (HEUATT) samples were characterized through elemental analysis and nuclear magnetic nuclei of carbon-13 and silicon-29. The ability of these materials to remove Mn(II), Zn(II) and Pb(II) from aqueous solution was followed by a series of adsorption isotherms adjusted to a Sips equation. To achieve the best adsorption conditions the influence of pH and contact time were investigated. Based on the capacity of adsorption of HEUATT to interact with metal ions, the following results were obtained 13.0, 10.1 and 7.4 mmol g(-1) for Pb(II), Zn(II) and Mn(II), respectively, reflecting a maximum adsorption order of Pb(II) > Zn(II) > Mn(II). The energetic effects caused by metal cation adsorption were determined through calorimetric titrations. (c) 2009 Published by Elsevier B.V.

Keywords: Acid, Adsorption, Adsorption, Adsorption Isotherms, Analysis, Aqueous Solution, Aqueous Waste, Calorimetry, Capacity, Cation, Contact Time, Europium(III), Heulandite, Immobilization, Intercalation, Ions, Isotherms, Magadiite, Magnetic, Metal, Metal Ions, Metals, Metals Removal, Modified, Nov, Pb(II), pH, Removal, Route, Silica-Gel, Solution, Sorption, Thermodynamic, Thorium(IV), Toxic, Toxic Metals, Zn(II)

# Title: Inorganic Chemistry and the Earth, Chemical Resources, their extraction, Use and Environmental Impact

Pergammon, Oxford

Fergusson, J.E. (1982), *Inorganic Chemistry and the Earth*, *Chemical Resources*, *Their Extraction*, *Use and Environmental Impact*, Pergammon Press, Oxford, New York, Toronto, Sydney, Paris and Frankfurt.

# Title: Inorganica Chimica Acta

Full Journal Title: [Inorganica Chimica Acta](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5245&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=8bf101c19978279d8f1dfcdca617b29c)

ISO Abbreviated Title: Inorg. Chim. Acta

JCR Abbreviated Title: Inorg Chim Acta

ISSN: 0020-1693

Issues/Year: 24

Journal Country/Territory: Switzerland

Language: English

Publisher: Elsevier Science SA

Publisher Address: PO Box 564, 1001 Lausanne, Switzerland

Subject Categories:

Chemistry, Inorganic & Nuclear: Impact Factor 1.295, 18/37 (1999); Impact Factor 1.200, 18/38 (2000); Impact Factor 1.394, 18/42 (2001); Impact Factor 1.554 (2004)

Adams, H., Bailey, N.A., Fenton, D.E. and Ho, Y.S. (1993), A polymeric tetraimine Schiff-base macrocyclic complex of silver(I). *Inorganica Chimica Acta*, **212** (1-2), 65-68.

Full Text: [I\Ino Chi Act212, 65.pdf](I/Ino%20Chi%20Act212,%2065.pdf)

Abstract: Silver(I)-templated cyclocondensation of pyridine-2, 6-dicarbaldehyde and 3-oxa-1, 5-diaminopentane yields a dinuclear silver(I) complex of the ‘2+2’ tetraimine Schiff base macrocycle L1. The crystal structure of the complex recrystallised from acetonitrile shows the product of recrystallisation to be polymeric with cyano-linked dimers being further associated through silver...silver interactions.

Keywords: Crystal-Structures, Metal-Complexes, Copper(II), Ligand

Bailey, N.A., Debarbarin, C.O.R., Fenton, D.E., Ho, Y.S. and Humber, G.J. (1995), The synthesis and crystal-structure of a cerium(III) complex of 2,6-bis (2-formylphenoxymethyl)pyridine. *Inorganica Chimica Acta*, **232** (1-2), 227-230.

Full Text: [I\Ino Chi Act232, 227.pdf](I/Ino%20Chi%20Act232,%20227.pdf)

Abstract: The synthesis and X-ray crystal structure of a ten-coordinate cerium(III) nitrate complex of 2,6-bis[2-formylphenoxymethyl]pyridine is reported.

Keywords: Crystal Structures, Cerium Complexes, Macrocyclic Ligand Complexes

Schubert, A. (1996), The portrait of a journal as reflected in its publications, references and citations: Inorganica Chimica Acta, 1990-1994. *Inorganica Chimica Acta*, **253** (2), 111-118.

Full Text: [I\Ino Chi Act253, 111.pdf](I/Ino%20Chi%20Act253,%20111.pdf)

Abstract: Scientometric techniques have been used to help sketch a portrait of the journal Inorganica Chimica Acta during the period 1990-1994. An attempt is made not only to reveal some of the so far hidden features of the journal but also to give some hints on how to improve its visibility and prestige in the future.

Keywords: Science

Bayse, C.A. and Hall, M.B. (1997), Pseudo second-order Jahn-Teller effects and symmetry considerations in transition metal polyhydride complexes. *Inorganica Chimica Acta*, **259** (1-2), 179-184.

Full Text: [I\Ino Chi Act259, 179.pdf](I/Ino%20Chi%20Act259,%20179.pdf)

Abstract: Pseudo second-order Jahn-Teller distortions are proposed to explain why the equatorial hydride ligands in a series of cyclopentadienyl metal polyhydrides (Cp\*ReH6, Cp\*OsH5, Cp\*IrH4) bend away from the Cp ring at such large angles. Restricted Hartree-Fock (RHF) geometry optimizations on models of these complexes where the Cp\* ring has been replaced by a hydride reproduce these large distortions. Walsh diagrams and Mulliken populations have been used to show that the stability provided by distortion results from maximizing the overlap population between the hydride s orbitals and the metal d orbitals. This study also includes a comparison of previous work on the structures of d(0) MH6 complexes with our work on d(2) MH6 complexes. We found that an occupied d orbital has a significant effect on the geometry of this type of molecule due to the change in hybridization on the metal from sd(5) to spd(4). Symmetry arguments are demonstrated as a means to predict the low energy geometries of these complexes.

Keywords: Jahn-Teller Effects, Transition Metal Complexes, Polyhydride Complexes

Schubert, A.P. and Schubert, G.A. (1997), Inorganica Chimica Acta: its publications, references and citations. An update for 1995-1996. *Inorganica Chimica Acta*, **266** (2), 125-133.

Full Text: [I\Ino Chi Act266, 125.pdf](I/Ino%20Chi%20Act266,%20125.pdf)

Abstract: Scientometric techniques have been used to characterize the journal Inorganica Chimica Acta during the 1995-1996 period. The results are compared to those of a previous study for the 1990-1994 period, with attempts to pinpoint characteristic trends and patterns. An epistemological analysis based on title words is used to locate ‘creative foci’ of research. (C) 1997 Elsevier Science S.A.

? Belyakova, L.A., Shvets, O.M. and Lyashenko, D.Y. (2009), Formation of the nanostructure on a silica surface as mercury(II) ions adsorption sites. *Inorganica Chimica Acta*, **362** (7), 2222-2230.

Full Text: [2009\Ino Chi Act362, 2222.pdf](2009/Ino%20Chi%20Act362,%202222.pdf)

Abstract: The present work investigates the adsorptive interactions of Hg(II) ions with hydroxylated silica, amino-propylsilica and silica chemically modified by beta-cyclodextrin in aqueous medium. Batch adsorption studies were carried out with various agitation time and mercury(II) concentration. The maximum adsorption was observed within 15-30 min of agitation. The kinetics of the interactions, tested with model of Lagergren for pseudo-first and pseudo-second order equations, showed better agreement with first order kinetics (k(1) = 3.4±0.2 to 5.9±0.3 min (1)). The adsorption data gave good fits with Langmuir isotherms. The results have shown that beta-cyclodextrin-containing adsorbent has the largest adsorption specificity to Hg(II) : K-L = 14400±700 L/mg. “beta-Cyclodextrin-NO3-” inclusion complexes with ratio 1: 1 and super molecules with composition C42H70O35 center dot 3Hg(NO3)2 are formed on the surface of beta-cyclodextrin-containing silica. (c) 2008 Elsevier B.V. All rights reserved.

Keywords: Acid, Adsorption, Beta-Cyclodextrin, Beta-Cyclodextrin, Immobilization, Inclusion Complex, Inclusion Complex, Mercury(II), Separation, Silica Surface, Systems

# Title: Inorganica Chimica Acta-Bioinorganic Chemistry

Full Journal Title: Inorganica Chimica Acta-Bioinorganic Chemistry

ISO Abbreviated Title: Inorg. Chim. A-Bioinor.

JCR Abbreviated Title: Inorg Chim A-Bioinor

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Goodgame, D.M.L., Page, C.J. and Williams, D.J. (1988), Potential multifunctional anti-cancer metal-complexes. 1. Synthesis and x-ray structural studies of some dinuclear rhodium(II) carboxylatecomplexes with diamine-substituted acridine ligands in terminal coordination positions. *Inorganica Chimica Acta-Bioinorganic Chemistry*, **153** (4), 219-225.

# Title: Insect Science and Its Application

Full Journal Title: Insect Science and Its Application

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0191-9040

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Alabi, G.A. (1984), Bradford law and the Nigerian entomological literature. *Insect Science and Its Application*, **5** (1), 7-11.

? Thompson, G. (1992), An analysis of the growth of African trypanosomiasis research between 1900 and 1985. *Insect Science and Its Application*, **13** (3), 399-409.

Full Text: 1992\Ins Sci Its App13, 399.pdf

Abstract: The purpose of this study is to elucidate the production dynamics, growth characteristics and trends of African trypanosomiasis research (ATREP) literature between 1900 and 1985 through graphical methods. The data analysed comprised 5139 articles from Tropical Diseases Bulletin and Tsetse and Trypanosomiasis Information Quarterly. Counting technique was employed in sorting the articles according to yearly production and respective subject disciplines. The bibliometric ranks of the disciplines were determined based on (1) the total output and (2) the average decennial relative changes (Rc) in publications between 1936 and 1985 using 1936/45 as the base decade. The results show that the growth is neither linear nor logistic but exponential with an average 39.5-year doubling time. A marked feature is the occurrence of high “epidemic” peaks between 1910-1914 and 1979-1985, a state in which publications were produced at relatively high level probably due to new discoveries or research orientation; and hence capable of quickly infecting a large number of scientists enhancing productivity. There was also a low level of activity from 1914 which lasted for about 22 years. The foundation disciplines for African Trypanosomiasis Research Programme (ATREP) are entomology and parasitology. Entomology had the highest bibliometric rank followed by parasitology. However, the Rc factors indicate that greater attention, as depicted by publication outburst, was given to physiology, immunology, biochemistry, and epidemiology between 1976-1985 than had been before. In spite of its consistently higher output, entomology exhibited the greatest fluctuating growth trend than all the other components. A possible explanation for this behaviour was ventured.

# Title: Institue of Chemical Engineering Research Event-European Conference Young Research Chemical Engineering, 1st

? Shen, X., Bousher, A. and Edyvean, R.G.J. (1995), Color removal from a waste effluent by combined use of Fe(II), lime and bone charcoal. *Institue of Chemical Engineering Research Event-European Conference Young Research Chemical Engineering*, *1st*, **1**, 469-471.

# Title: Institution of Chemical Engineers. Symposium Series: Use of Energy in Northern Ireland, Belfast

(Inst. Chem. Eng. Symp. Ser.; I. Chem. E. Symp. Ser.)

McKay, G. (1978), The fuel situation in Northern Ireland. The Institution of Chemical Engineers Proceedings of the Symposium: Use of Energy in Northern Ireland, Belfast, **September**, 1-21.

McKay, G. and Sweeney, A.G. (1979), Diffusion and surface processes during colour removal from effluent by carbon adsorption. *Yorkshire Branch of the Institution of Chemical Engineers Proceedings of the Symposium: Solids/Liquids Separation Practice*, *Leeds*, **March**, 175-194.

McKay, G., Allen, S.J. and Poots, V.J.P. (1980), Colour removal from effluent using peat: Batch and fixed bed studies. *Institution of Chemical Engineers. Symposium Series*, *Dublin*, **59**, 8:2/1-8:2/14.

McKay, G. (1981), A fixed bed adsorption model using peat for colour removal. Institution of Chemical Engineers. Symposium Series: 2nd World Congress of Chemical Engineering, Montreal, **6**, 153-157.

Aga, J., Allen, S.J., Bino, M.J., McConvey, I.F. McKay, G., Otterburn, M.S. and Sweeney, A.G. (1983), The design of fixed bed adsorption systems for the treatment of coloured and colourless organics in effluents. *Institution of Chemical Engineers. Symposium Series*, **77**, 217-232.

McKay, G. (1983), Energy management in the process industry. *Institution of Chemical Engineers. Symposium Series:Branch Meeting*, *Dublin*, **September**, 1-16.

Allen, S.J., McKay, G. and Poots, V.J.P. (1986), The sorption of dyes onto in fixed beds. *Institution of Chemical Engineers. Symposium Series: Effluent Treatment and Disposal*, *Bradford*, **53**, 199-210.

# Title: Insula-Revista de Letras y Ciencias Humanas

Full Journal Title: Insula-Revista de Letras y Ciencias Humanas

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? [Anon]. (2009), Cited Bibliography. *Insula-Revista de Letras y Ciencias Humanas*, **64** (751-52), 44.

Full Text: 2009\Ins-Rev Let y Cie Hum64, 44.pdf

# Title: InTech

Full Journal Title: InTech

ISO Abbreviated Title: InTech

JCR Abbreviated Title: InTech

ISSN: 0192-303X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Yoder, J. (2000), Who was first? Author’s response. *InTech*, **47** (9), 14.

Full Text: Intech47, 14.pdf

# Title: Intellect

Full Journal Title: Intellect

ISO Abbreviated Title: Intellect

JCR Abbreviated Title: Intellect

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lindeman, L.W. (1973), 5 most cited reasons for faculty unionization. *Intellect*, **102** (2352), 85-88.

# Title: Intelligence

Full Journal Title: [Intelligence](http://www.sciencedirect.com/science/journal/01602896)

ISO Abbreviated Title: Intelligence

JCR Abbreviated Title: Intelligence

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wicherts, J.M. (2009), The impact of papers published in *Intelligence* 1977-2007 and an overview of the citation classics. *Intelligence*, **37** (5), 443-446.

Full Text: [2009\Intelligence37, 443.pdf](2009/Intelligence37,%20443.pdf)

Abstract: This editorial discusses the impact of the journal of Intelligence between 1977 and 2007. The impact factor of Intelligence has been increasing over the past decade, and currently stands at 3.27. This relatively high impact factor reflects the influence of the journal in the science of individual differences in cognitive abilities. Typical articles published in Intelligence are cited between four and ten times. The 25 most cited papers in Intelligence are described. The work published in Intelligence is widely cited and reflects nicely the multi-disciplinary nature of the field. (C) 2009 Elsevier Inc. All rights reserved.

Keywords: Age, Attention, Citation Analysis, Complexity, Emotional Intelligence, General Intelligence, Impact Factor, Model, Reasoning Ability, Scientific Impact, Scientometrics, Short-Term-Memory, Speed, Working-Memory Capacity

# Title: Intelligence and Security Informatics

Full Journal Title: Intelligence and Security Informatics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lu, C.C., Jen, W.Y. and Chang, W.P. (2007), Trends in computer crime and cybercrime research during the period 1974-2006: A bibliometric approach. *Intelligence and Security Informatics*, **4430**, 244-250.

Abstract: The aim of this study is to explore trends in computer crime and cybercrime research from 1974 to 2006. All publications for this analysis were drawn from the ISI Web of Science, the Science Citation Index (SCI), and the Social Science Citation Index (SSCI). The ISI Web of Science is considered a powerful and relatively accurate tool in bibliometric studies. About 292 papers related to computer crime and cybercrime were published during this period. The greatest number of these papers was written in English, and the annual output increased significantly after 2003. In the period under study, most papers originated in the USA. Approximately 57% of the publications were articles, and 72% of these articles had single authors. More bibliometric analyses are described in this study, which shows a high scientific production of articles on computer crime and cybercrime publications.

Keywords: 1974-2006, Analyses, Analysis, Approach, Authors, Bibliometric, Bibliometric Analyses, Bibliometric Studies, Citation, Computer, Crime, ISI, ISI Web of Science, Papers, Production, Publications, Research, SCI, Science Citation Index, Scientific Production, Social Science Citation Index, SSCI, Tool, Trends, USA, Web of Science

# Title: Intensive Care Medicine

Full Journal Title: [Intensive Care Medicine](http://www.springerlink.com/content/100428/?p=f13ec6a0baf446cb878588297258376d&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0342-4642

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Baltussen, A. and Kindler, C.H. (2004), Citation classics in critical care medicine. *Intensive Care Medicine*, **30** (5), 902-910.

Full Text: [2004\Int Car Med30, 902.pdf](2004/Int%20Car%20Med30,%20902.pdf)

Abstract: Objective. The number of citations an article receives after its publication reflects its impact on the scientific community. Our purpose was to identify and examine the characteristics of the most frequently cited articles in the field of critical care medicine. Design. The 74 top-cited articles in critical care journals were identified by a computer search using the database of the Science Citation Index Expanded (SCI-EXPANDED, 1945 to present) and the Web of SCIENCE. The 45 top-cited critical care articles in all other biomedical journals were identified using the database SciSearch (1974 to present) with the key word “Critical Care”. Results. The most cited articles received 3402 and 2860 citations, respectively. The citation classics in critical care journals were published between 1968 and 1999 in six high-impact journals, led by Critical Care Medicine (37 articles), followed by the Journal of Trauma (21), and American Journal of Respiratory and Critical Care Medicine (9). Seventy articles were original publications, two were reviews or guidelines, and two were editorials. The top 45 classic articles in non-critical care journals were published in 13 different journals, led by the New England Journal of Medicine (11 articles), followed by JAMA and Lancet (6 articles each). The United States of America contributed most of the classic articles. Pathophysiology of the lung, sepsis and scoring systems were the primary focus of classic publications. Conclusions. Our analysis gives a historical perspective on the scientific progress of critical care medicine and allows for recognition of important advances in this specialty.

Keywords: Analysis, Archives, Biomedical, Biomedical Journals, Care, Citation, Citation Analysis, Citation Classics, Citations, Community, Critical Care, Critical Care Medicine, Database, England, Guidelines, Journal Impact Factors, Journals, Landmark Article, Lung, Medicine, Most-Cited Articles, Primary, Publication, Publications, Science, Science Citation Index, Scientific Progress, Scientometrics, Specialty, United States

? Brusselaers, N., Monstrey, S., Colpaert, K., Decruyenaere, J., Blot, S.I. and Hoste, E.A.J. (2010), Outcome of acute kidney injury in severe burns: A systematic review and meta-analysis. *Intensive Care Medicine*, **36** (6), 915-925.

Full Text: 2010\Int Car Med36, 915.pdf

Abstract: The main objective of this review was to analyse the prevalence and outcome of acute kidney injury (AKI) in patients with severe burn injury. AKI is a common complication in patients with severe burn injury and one of the major causes of death (often combined with other organ dysfunctions). Several definitions of AKI have been used, but the RIFLE ‘consensus’ classification is nowadays considered the gold standard, enabling a more objective comparison of populations. We performed a systematic literature search (1960-2009), involving PUBMED, the Web of Science, the search engine Google (TM) and textbooks. Reference lists and the Science Citation Index search were also consulted. Attributable mortality was assessed by performing a meta-analysis. This search yielded 57 articles and abstracts with relevant epidemiologic data of AKI in the burn population. of these, 30 contained complete mortality data of the burn and control population, which revealed a 3- to 6-fold higher mortality for AKI patients in univariate analysis, depending on the applied definition. When defined by the RIFLE consensus classification, AKI occurred in one quarter of patients with severe burn injury (median mortality of 34.9%), and when defined by the need for renal replacement therapy (RRT), AKI occurred in 3% (median mortality of 80%). The prevalence of AKI slightly increased, but AKI-RRT decreased. However, the outcome in both groups improved. Despite the wide variation of the analysed burn populations and definitions of AKI, this review clearly showed that AKI remains prevalent and is associated with increased mortality in patients with severe burn injury.

Keywords: Acute Kidney Injury, Acute-Renal-Failure, Analysis, Burns, Citation, Continuous Venovenous Hemofiltration, Control, Critically-Ill Patients, Definitions, Hospital Mortality, Injury, Intensive-Care-Unit, Literature, Meta-Analysis, Military Casualties, Mortality, Multicenter Evaluation, Multiple Organ Dysfunction, Outcome, Prevalence, Pubmed, Replacement Therapy, Review, Rifle Criteria, Science, Science Citation Index, Systematic, Systematic Review, Textbooks, Therapy, Thermal Injury, Web of Science

# Title: Inter-Asia Cultural Studies

Full Journal Title: [Inter-Asia Cultural Studies](http://www.informaworld.com/smpp/title~db=all~content=t713701267)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chen, K.H. and Chien, S.Y.S. (2009), Knowledge production in the ERA of neo-liberal globalization: Reflections on the changing academic conditions in Taiwan. *Inter-Asia Cultural Studies*, **10** (2), 206-228.

Full Text: [2009\Int-Asi Cul Stu10, 206.pdf](2009/Int-Asi%20Cul%20Stu10,%20206.pdf)

Abstract: This essay is an intervention to interrupt the blind adoption of the Social Science Citation Index (SSCI) by Taiwan’s academic regime to evaluate scholarly work. Situating the changing local conditions of knowledge production in the larger context of neo-liberal globalization, we trace the trajectory of implementing the new evaluation system and then pinpoint the critical impacts on intellectual work in this wave of ‘internationalizing’ research and publication promoted by the state bureaucracy. We argue for an alternative vision of globalization that is locally grounded, multiculturally nurturing and democratically driven.

Keywords: Academic, Citation, Evaluation, Globalization, Knowledge, Neo-Liberal, Professionalism, Research, Science, SSCI

# Title: Interciencia

Full Journal Title: [Interciencia](http://www.scielo.org.ve/scielo.php?pid=0378-1844&script=sci_serial)

ISO Abbreviated Title: Interciencia

JCR Abbreviated Title: Interciencia

ISSN: 0378-1844

Issues/Year: 6

Journal Country/Territory: Venezuela

Language: Multi-Language

Publisher: Interciencia

Publisher Address: Apartado 51842, Caracas 1050A, Venezuela

Subject Categories:

Multidisciplinary Sciences: Impact Factor 0.366, 25/49 (2000); Impact Factor 0.192, / (2001)

? Frame, J.D. (1977), Mainstream research in Latin America and the Caribean. *Interciencia*, **16** (2), 143-146.

? Vessuri, H.M.C. (1991), Recent perspectives in the social study of science. *Interciencia*, **16** (2), 60-68.

Abstract: The 1970s were characterized by an anti-Mertonian bend, the post-Kuhnian re-establishment of the linkages between sociology of science and sociology of knowledge, the exposure by the ethno-methodologists of the wealth of collective manoeuvres through which objects are constructed, both in daily life as in science, the diversification of rationality according to the objects and circumstances to which it applies, the Habermasian enquire into the orientations of knowledge and the very sense of objectivity. Such intellectual climate favoured the emergence of several research lines more or less tangential with the Mertonian tradition, which sought to renew both the theory and practice in the sociological analysis of scientific activity. The present essay reviews some of those approaches. Among the interrogations of the intellectual agenda of sociology of science in the 80s there was that of the nature of human knowledge in general, rather than of scientific knowledge in particular. Scientific knowledge is not treated “a priori” as epistemologically special. Science is perceived as sociologically interesting justly because it appears as the canonical example of knowledge and, or because it is an institution producing knowledge that is easily accessible, for it displays openly a good portion of its production processes. Direct observation of the real scientific work-place (often, although not necessarily the laboratory) allows to explore the microsociological dimension. Frequently characterized by a methodological constructivism, studies examine the processes by means of which the objects of knowledge are constituted in science. We bring out affinities of the recent production in the field of scientific and technical disciplines with the characteristic approaches of the sociologists of science, although in general the latter were more concerned with exploring the social bases of discovery, considering that the macro dimensions of disciplines made more difficult their handling. However, the new perception of scientific and technical disciplines as political institutions that delimit areas of academic territory, distribute privileges and responsibilities of expert knowledge and structure the claims over resources, embodied as they are in university departments, professional societies and informal market relations between producers and consumers of knowledge, allow to glimpse an eventual synthesis which may facilitate a better understanding of the dynamics of scientific advance. Aspects of scientometrics are considered as subproducts of the conceptual and empirical development of sociology of science. In particular, we touch on problems of good for whom? with regard to science indicators and of the under-representation of scientific activity of the developing countries in current scientometrics. The work ends with some reflections upon the perspectives of research for the future.

Keywords: Countries, Discovery, History, Indicators, Knowledge, Professional, Research, Reviews, Science, Scientometrics, Sociology, Sociology of Knowledge, Sociology of Science, State, University

? Demeis, L., Machado, R.D.P., Fonseca, L., Lustosa, P. and Caldeira, M.T. (1992), Scientometrics and peer evaluation. *Interciencia*, **17** (1), 40-43.

Full Text: 1992\Interciencia17, 40.pdf

Abstract: This work describes a correlation between scientometric data and peer ranking carried out among 40 Brazilian researchers responsible for 54% of all papers published by Brazilians in the fields of biochemistry and molecular biology, in the last ten years. Scientists were rated by their peers on a four-point scale being four the highest level. Evaluation was based on formal and informal professional contacts over a number of years, within the scientific community. Scores awarded independently by the 19 raters showed remarkable agreement even for self-evaluation, and there was evidence of a strong sense of hierarchy. There was also a great correlation between this ranking and scientometric data (number of publications, citations and total impact factor). From these results, some tentative conclusions can be drawn about talent and revolutionary thinking in scientific research. Scientometric data are proposed as a complementary tool for scientific evaluation.

Keywords: Biology, Citations, Evaluation, Impact, Impact Factor, Impact-Factor, Molecular Biology, Papers, Professional, Publications, Research, Researchers, Science, Scientific Evaluation

? Fernandez, M.T., Gomez, I. and Sebastian, J. (1998), Scientific cooperation of Latin American countries through bibliometrics indicators. *Interciencia*, **23** (6), 328-337.

Full Text: [1998\Interciencia23, 328.pdf](1998/Interciencia23,%20328.pdf)

Abstract: The international scientific cooperation between Latin American countries, the European Union and the United States have been studied through their publications in the Science Citation Index. A total of 17,473 documents coauthored between 1991-95 has been analysed. Bibliometric indicators were used to identify the collaboration patterns of each Latin American country, productivity, principal subject of the cooperation and partners. As a whole, coauthored papers amount to 32% of mainstream scientific articles of Latin America although a great heterogeneity can be observed. Brazil, Argentina, Mexico, Chile, Venezuela and Colombia account for more than 95% of the copublished articles. Around 44% of the copublications have been with USA and another 44% with EU, while copublications among Latin American countries represent 5,4% and 6,6% joint publications with the three regions. The most frequent case was the coauthorship between two countries (15,298 documents). Collaborative papers have grown along the period studied, particularly multilateral collaborations. Physics, including Astrophysics, Biomedicine, Clinical Medicine and Agriculture were the fields that present higher collboration rates.

Keywords: Bibliometrics, Collaboration, Countries, European Union, Impact, Indicators, International Collaboration, Latin America, Mexico, Papers, Patterns, Productivity, Publications, Scientific Cooperation, United States, World Science

? Martin-Sempere, M.J., Rey, J. and Plaza, L.M. (1999), Temporary mobility of scientists and international cooperation sabbatics from Latin America in Spain. *Interciencia*, **24** (2), 107-111.

Full Text: [1999\Interciencia24, 107.pdf](1999/Interciencia24,%20107.pdf)

Abstract: The scientific relationships between Latin American countries and Spain have been analyzed. The study considers two main topics: the stay of Latinoamerican fellows in Spain granted by the Spanish sabbatical Program within the framework of the R&D National Plan and their coauthored papers with Spanish scientists during the period 1984-1994. The number of Latin American sabbatics and the scientific output resulting from their research collaboration with Spanish scientists have been considered in older to evaluate to what extent the mentioned Spanish Program is visible in Latin American countries as well as its effectiveness in terms of scientific output resulting from joint research. As a whole, fellows from Latin American countries are growing along the nineties. A slightly higher number of researchers coming from Argentina and Mexico can be observed. Special attention has been paid to the analysis of copublications. Bibliometric indicators were used to identify collaboration between Latin American researchers and their Spanish colleagues and their continuity of cooperative works after the stays. Results from the study reveal that such mobility actions indices an enhancement of the bilateral scientific relations between Spain and Latin America.

Keywords: Collaboration, Countries, Indicators, International Cooperation, Mexico, Performance, R&D, Research, Research Collaboration, Researchers, Scientific Output, Spain, Spanish

? Niaz, M. (2000), Investigation and the wealth of a nation. *Interciencia*, **25** (1), 37-40.

Full Text: [2000\Interciencia25, 37.pdf](2000/Interciencia25,%2037.pdf)

Abstract: The object of this study is to demonstrate the importance for university professors of publishing in peer reviewed journals that are indexed in Science Citation Index. The role of such publications is emphasized in economic development and generation of the wealth of a nation. It is important that the investigator has the liberty to choose between applied or basic research. It is concluded that the evaluation of university professors must include sufficient incentives for research.

Keywords: Venezuela, Productivity, Promotion, Program

? Collazo-Reyes, F. and Luna-Morales, M.E. (2002), Mexican elementary particle physics: Organization, scientific production and growth. *Interciencia*, **27** (7), 347-353.

Full Text: [2002\Interciencia27, 347.pdf](2002/Interciencia27,%20347.pdf)

Abstract: A bibliometric analysis of the contribution to fields and elementary particles physics by Mexican institutions is performed, using the SLAC-SPIRES-HEP database for the period 1971-2000. The analysis elaborates on aspects concerning their organization, production and growth, through the identification of the institutions with research programs connected to this area, their stratification by production levels, periods of contribution and geographic organization. Central tendency measures of published papers are analyzed. The growth and future evolution were analyzed by polynomial and exponential curve-fitting and correlation proofs, as was the stratified growth per decade, institutions and research groups.

Keywords: Bibliometric, Bibliometric Analysis, Cern, Contribution, Evolution, Future-Prospects, High-Energy Physics, Past Performance, Research, Scientific Production

? Jaffe, K. (2005), Science, religion and economic development. *Interciencia*, **30** (6), 370-373.

Full Text: [2005\Interciencia30, 370.pdf](2005/Interciencia30,%20370.pdf)

Abstract: The correlations between scientometric indices, macroeconomic variables and results from attitude polls in different countries were explored. The results show that a minimum threshold of economic development (around GDP Per capita of 1000US$) is required for science and the economy of a country to interact. Above that threshold, a Positive interaction can be observed between economic development. scientific development and tolerant moral-religions attitudes. The way these interactions occur remains to be uncovered.

Keywords: Development, Economic Development, Nations, Religious Attitudes, Scientific Progress, Scientometric, Scientometries

? Aguillo, I.F., Granadino, B. and Llamas, G. (2005), Web positioning of the university system in Latin America. *Interciencia*, **30** (12), 735-738.

Full Text: [2005\Interciencia30, 735.pdf](2005/Interciencia30,%20735.pdf)

Abstract: A cybermetric analysis of the Latin-American university sector was carried out as part of a series of analysis related to the measurement of the web visibility and impact of R&D institutions. As in previous studies, search engines were used for data extraction but focusing on obtaining ranked lists ordered by link-based algorithms. The Google PageRank was used as a visibility indicator of the Latin-American universities. The relative position of the universities in the list of web pages with higher PageRank dominance was computed both for national and idiomatic webspaces. The results showed an important and significant web presence of university pages in all Latin American countries, although there was a wide range in relative percentage. The larger and richer countries, with a well-structured public and private university system, are better represented on the web. However, small institutions, generally of private nature, are also among the most visible in countries like Mexico, Brazil and Colombia. Thus, the Latin-American university sector has a great importance to vertebrate the web in the region. Moreover, the best positions are coincident with data obtained from bibliometric indicators. Brazilian universities have a large participation in the Portuguese web pages.

Keywords: Analysis, Bibliometric, Bibliometric Indicators, Brazil, Colombia, Extraction, Impact, Impact Factors, Importance, Indicator, Indicators, Institutions, Latin America, Measurement, Mexico, Participation, Position, Range, Universities, Visibility, Web Pages

? Sancho, R., Morillo, F., De Filippo, D., Gomez, I. and Fernandez, M.T. (2006), Indicators of inter-center scientific co-operation in Latin American countries. *Interciencia*, **31** (4), 284-292.

Full Text: [2006\Interciencia31, 284.pdf](2006/Interciencia31,%20284.pdf)

Abstract: Indicators of scientific cooperation from 24 Latin American and Caribbean countries were obtained through the study of their mainstream publications signed by scientists from two or more institutions from Latin American countries, or outside Latin America, during the period 1999-2002, using co-authorship bibliometric analysis. Three types of cooperation, national, regional and international were established, distinguishing between bilateral and trilateral front large scientific networks of 6 or more countries. For each country, thematic areas with the largest presence were analyzed in relation to the type of co-operation and size of networks. Cooperative research work represents 65% of the total output and grows each year particularly international cooperation; on the contrary, regional cooperation is very scarce. The most productive countries show a relatively lower international co-operation than that of countries with a smaller scientific production. The evolution of collaboration habits from 1991-1995 to 1999-2002 is analyzed.

Keywords: Analysis, Authored Papers, Bibliometric, Bibliometric Analysis, Bilateral, Caribbean, Citation, Co-Authorship, Collaboration, Evolution, Front, Impact, Institutions, Latin America, Output, Production, Publications, Regional, Research, Research Collaboration, Research Work, Scientific Networks, Scientific Production

? Bolivar, R., Mostany, J. and Garcia, M.D. (2006), Petroleum versus alternative energy sources. A future dilemma. *Interciencia*, **31** (10), 704-711.

Full Text: [2006\Interciencia31, 704.pdf](2006/Interciencia31,%20704.pdf)

Abstract: There are evidences that point out towards a permanent oil crisis. In accordance with this premise, the following issues are analyzed: 1) The origin of the higher energy demand; the consumption per region and per habitant, as well as the motorization per region will be shown and compared with those from the USA. The effects of the developing economies on this aspect will be evaluated. 2) The characteristics of the oil business vs its growing demand, as well as the proven reserves and the refining business. 3) The opinions and strategies of some oil companies (Shell, Chevron, Exxon-Mobil y BP) on this matter Two possible solutions to the oil crisis in the short-medium term are pointed out: heavy/extra-heavy oil and methane hydrate exploitation. Emphasis should be placed on education and R&D in alternative energy sources, as well as in the substitution of the current use of petroleum by the custom of a nomadic society. The importance of the oil and alternative energy sources dilemma will become more important in the medium and long term. The fuel cell technology and the “long term American strategy”, as well as the alternative European Community projects, are discussed. An eclectic position about the energy source diversification as a solution to the permanent energy crisis is offered, and a possible energetic strategy for the long term is commented.

? Packer, A.L. and Meneghini, R. (2007), Learning to communicate science in developing countries. *Interciencia*, **32** (9), 643-647.

Full Text: [2007\Interciencia32, 643.pdf](2007/Interciencia32,%20643.pdf)

Abstract: Good quality science has been produced in developing countries, as shown by the number of papers published in prestigious journals. However the competence to produce good journals in these countries has lagged behind for several reasons, particularly the establishment of an international publishing system relying on the increasing value attributed to the ISI-JCR journal ranking, a view adopted by authors worldwide and by funding and evaluation systems. Developing countries became integrated to this international context and the efforts to produce good local journals can be pinpointed to individual initiatives that in most cases failed to progress. One important consequence of this gap is that dealing with the peer review procedure, a major instrument to produce good journals and to foster scientific progress, is a limited experience in developing countries. Under this scenery an enterprise that began in Brazil in 1997 and thereafter spread over twelve other Iberoamerican countries is discussed in the light of recent data. SciELO (Scientific Electronic Library Online) is a program fundamentally supported by public funding, aimed at launching online the best existing journals in several countries, in an open access mode, based on peer-reviewing and bibliometric/scientometric analysis for the purpose of journal indexation and maintenance in its database. SciELO covers the functions of a meta-publisher and aims to operate in accordance with the open access movement, rendering scientific knowledge more widely available. The data presented show encouraging evidences that a new auspicious panorama is being established in the context of producing scientific journals in Brazil.

Keywords: Access, Analysis, Authors, Brazil, Countries, Database, Developing Countries, Evaluation, Funding, Journals, Journals, Knowledge, Open Access, Papers, Peer Review, Peer-Review, Publication, Publishing, Quality, Ranking, Scielo, Scielo, Science, Scientific Journals, System, Visibility

? Michán, L., Russell, J.M., Pereyra, A.S., Cruset, A.L. and Beltrán, C.L. (2008), Analysis of the state of systematics in Latin America. *Interciencia*, **33** (10), 754-761.

Full Text: [2008\Interciencia33, 754.pdf](2008/Interciencia33,%20754.pdf)

Abstract: In order to have a regional vision of the development of systematics in Latin America during the last three decades, the results of a scientometric analysis based on 11185 documents on this thence published in 411 journals fiom 1976 to 2006 and obtained from the Periodica data base are presented. The current state of the discipline in the region is described, a detailed analysis about the articles, countries, main lines of study, taxonomic groups, topics, format, type of document, content and language is carried out, and the information is contextualized. The specialized production on systematics produced and published in local journals was notable and remained stable after the 80’s, mainly in Mexico, Brazil and Argentina. The contents have been published primarily, in Spanish and mainly in the form of articles. They dealt mostly with descriptive taxonomy and were related to ecology, anatomy, histology and aquatic biology. The most represented groups were insects and angiosperms. A call is made for the urgent need of systematizing, the literature about Latin American taxa.

Keywords: America, American, Analysis, Anatomy, Argentina, Biology, Brazil, Content, Countries, Coverage, Data, Data Base, Databases, Development, Ecology, Groups, Histology, Information, Insects, Journals, Language, Latin America, Latin American, Literature, Local, Mexico, Patterns, Production, Publications, Regional, Revista, Science, Scientometric, Scientometric Analysis, Spanish, State, Taxonomy

? Mijac, V. and Ryder, E. (2009), Bibliometric analysis of research publications on parasitology in Venezuela (2002-2007). *Interciencia*, **34** (2), 140-146.

Full Text: [2009\Interciencia34, 140.pdf](2009/Interciencia34,%20140.pdf)

Abstract: The aim of this work was to revise, through Internet data bases (PubMed/MEDLINE, Scielo and LILACS) the research papers on parasitosis in Venezuela, published in national and foreign journals, between 2000 and 2007. Keywords used were Venezuela + parasitosis and specific parasites + Venezuela. One hundred sixty two papers were found, published in 56 journals, mostly (61.1%) in English. Venezuelan journals published 51 papers (31.5%), mainly Investigacion Clinica (15; 29.5%) and Kasmera (12; 23.6%), with percentages similar to those in high impact journals as American Journal of Tropical Medicine and Hygiene, and Memorias del Instituto Oswaldo Cruz. The institution responsible for most of the papers was the Universidad Central de Venezuela (UCV) with 41 communications (14.7%). In 15 papers (9.2%), the responsible institution was foreign, but the studied sample came from Venezuela. The most studied area (58%) was Epidemiology. The parasites more frequently studied were the tisular protozoa (41.9%), leading to 28 reports on Trypanosome. The papers on intestinal protozoa were variable, with similar species numbers. Among arthropods the most studied were Anopheles, Tityus and Lutzomyia. It was found that the productivity in the area of Parasitology in Venezuela was stable during the period analyzed, that local journals contained an important amount of the papers, that the most productive institution was UCV, that papers on tisular protozoa predominated but most parasites and their vectors were represented.

Keywords: American, Bibliometric, Bibliometric Analysis, Communications, Countries, Data, Disease, Epidemiology, Foreign, Health, Impact, Infection, Institution, Internet, Journals, Local, National, Papers, Productivity, Research, Scientific Production, Spanish, Species, Venezuela, Work

? Rojas-Sola, J.I. and Jorda-Albinana, B. (2009), Bibliometric analysis of Venezuelan publications in the computer sciences category of the JCR data base (1997-2007). *Interciencia*, **34** (10), 689-695.

Full Text: [2009\Interciencia34, 689.pdf](2009/Interciencia34,%20689.pdf)

Abstract: The objective of this study was to review, through the JCR database in the Web of Science (ISI), the scientific production in the Computer Science subject category in Venezuela and published in international journals with impact factor between the years 1997 and 2007. We found 181 articles in all 95 journals, all of them in English. Four universities aggregate 93.92% of the entire university scientific output: Universidad Simon, Bolivar (USB), Universidad de los Andes (ULA), Universidad Central de Venezuela (UCV) and La Universidad del Zulia (LUZ), USB standing out with 57 items (32.95%) and a remarkable increase in scientific output from 2005 having been observed. However, in terms of impact factor outstands ULA. Research institutions only accounted for 7.73% of all the scientific analysis. A remarkable international collaboration is also highlighted.

Keywords: Bibliometric, Bibliometric Analysis, Impact, Impact Factor, Impact Factors, Indicators, ISI, Journals, Research, Scientific Production, Tomography, Universities, Web of Science

? Ricker, M., Hernandez, H.M. and Daly, D.C. (2009), Measuring scientists’ performance: A view from organismal biologists. *Interciencia*, **34** (11), 830-835.

Full Text: [2009\Interciencia34, 830.pdf](2009/Interciencia34,%20830.pdf)

Abstract: Increasingly, academic evaluations quantify performance in science by giving higher rank to scientists (as well as journals and institutions) who publish more articles and have more citations. In Mexico, for example, a centralized federal agency uses such bibliometric statistics for evaluating the performance of all Mexican scientists. In this article we caution against using this form of evaluation as an almost exclusive tool of measuring and comparing scientists’ performance. We argue that from an economic viewpoint, maximizing the number of journal articles and their citations does not necessarily correspond to the preferences and needs of society. The traditional peer review process is much better suited for that purpose, and we propose “rule-based peer review” for evaluating a large number of scientists.

Keywords: Academic Evaluation, Authors, Bibliometric, Citation Statistics, Citations, Evaluation, Impact Factor, Indicators, Journals, Mexico, Model, Peer Review, Publication, Quality, Science, Sistema Nacional de Investigadores, SNI, Taxonomy

? Meneghini, R. and Packer, A.L. (2010), The extent of multidisciplinary authorship of articles on scientometrics and bibliometrics in Brazil. *Interciencia*, **35** (7), 510-514.

Full Text: [2010\Interciencia35, 510.pdf](2010/Interciencia35,%20510.pdf)

Abstract: The publications in scientometrics and bibliometrics with Brazilian authorship expanded exponentially in the 1990-2006 period, reaching 13 times in the Web of Science database and 19.5 times in the Google Scholar database. This increase is rather superior to that of the total Brazilian scientific production in the same time period (5.6 times in the Web of Science). Some characteristics to be noticed in this rise are: 1) The total number of articles during this period was 197; in that, 78% were published in 57 Brazilian journals and 22% in 13 international journals. 2) The national and international articles averaged 4.3 and 5.9 citations/article, respectively; two journals stood out among these, the national Ciencia da Informacao (44 articles averaging 6.7 citations/article) and the international Scientometrics (32 articles averaging 6.2 citations/article). 3) The articles encompass an impressive participation of authors from areas other than information science; only one-fourth of the authors are bound to the information science field, the remaining ones being distributed among the areas of humanities/business administration, biology/biomedicine, health and hard sciences. The occurrence of adventitious authors at this level of multidisciplinarity is uncommon in science. However, the possible benefits of such patterns are not clear in view of a fragmented intercommunication among the authors, as noticed through the citations. The advantages of changing this trend and of using other scientometric and bibliometric databases, such as SciELO, to avoid an almost exclusive use of the Web of Science database, are discussed.

Keywords: Authorship, Bibliometrics, Citation, Citations, h Index, Infometrics, Information Science, Publication, Publications, SciELO, Science, Scientometrics, Web, Web of Science

? Rojas-Sola, J.I. and Jorda-Albinana, B. (2010), Bibliometric analysis of Venezuelan scientific publications in the ecology category of the Web of Science database (1997-2008). *Interciencia*, **35** (8), 619-623.

Full Text: [2010\Interciencia35, 619.pdf](2010/Interciencia35,%20619.pdf)

Abstract: The Venezuelan scientific production in the Ecology subject category in the Web of Science (WoS) database, and published in international journals with impact factor between 1997 and 2008, was reviewed at an institutional level. A total of 644 articles in 56 journals, mostly in Spanish and English were found. Three universities and a research institution (Universidad Central de Venezuela, Universidad Simon Bolivar, Universidad de Los Andes and the Instituto Venezolano de Investigaciones Cientificas) aggregate 96,58% of all science production registered in that database in Ecology, standing out the Universidad Central de Venezuela with 229 articles (35.56%). An increase in scientific production was found until 2006, after which there is a marked decline. In terms of impact factor, the Instituto Venezolano de Investigaciones Cientificas outstands, followed by the Universidad de Los Andes. A high international collaboration, mainly with researchers from the USA, is also highlighted.

Keywords: Impact Factors, Indicators

? Wasserman, J.C. (2010), Ethical aspects of scientific texts. *Interciencia*, **36** (6), 466-472.

Full Text: 2010\Interciencia36, 466.pdf

Abstract: Ethics in the scientific writing has been scarcely discussed, mainly in Latin-American countries, and thanks to the lack of agreement each researcher or research group establish their own ethics. Therefore, whenever students want to get included, they have to follow those criteria, regardless of its fairness. Furthermore, these ethical concepts are not formally transferred, and the participants of the research group have to learn them for experience that is frequently a bitter one. This article aims to start a discussion on the ethics of the scientific text that delimits behaviors in the field of scientific publications. The text reports cases of plagiarism where the purpose of copying was evident, as well as situations where the lack of awareness about the rules leads the authors to ethic flaws. The principles of ethics in the scientific text are also discussed, and how these principles warrant the credibility of the scientific work. The originality of the scientific text is defined as a fundamental concept that drives the citation process. The property of the scientific work is further discussed, outlining the criteria that should drive the choice of those which may participate as coauthors or those who merely contributed to the work. The dialog between colleagues is established as a key procedure for the mitigation of the conflicts and, finally, situations are presented where dishonesty seems a natural path in academic and non-academic environments where the “goals justify the means”.

Keywords: Authors, Citation, Ethics, Originality, Plagiarism, Publications, Research, Scientific Publications, Students, Writing

# Title: Interdisciplinary Science Reviews

Full Journal Title: Interdisciplinary Science Reviews

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Yagi, E., Badash, L. and Beaver, D.D. (1996), Derek J. de S. Price (1922-83) - Historian of science and herald of scientometrics. *Interdisciplinary Science Reviews*, **21** (1), 64-84.

Abstract: The 1960s, a golden age for academia in the USA, witnessed an unparallelled expansion of disciplines, among them the history of science and quantitative studies of science. A major pioneer in developing those fields was Derek Price, whose leadership of Yale University’s newly created Department of History of Science and Medicine helped to bring national prominence to research about science and scientists. Price’s legacy to the history of science, science policy, and scientometrics continues to be influential today. Three of Price’s students recall the chemistry of the first years of the department, and reflect on their experiences with Price the scholar, teacher, and mentor.

Keywords: Chemistry, History, History of Science, Research, Science, Scientometrics

? Wilson, C.S. and Osareh, F. (2003), Science and research in Iran: a scientometric study. *Interdisciplinary Science Reviews*, **28** (1), 26-37.

Abstract: Indicators of science and technology (S&T) activity often disadvantage developing countries, due, in part, to incomplete compilation of statistics or to the examination of indicators in isolation. Among the major indicators of S&T activity are research and development (R&D) expenditures and their relationship to gross domestic product, numbers of personnel involved in S&T research, scientific publication output and rankings by scientific discipline, and numbers of patents registered in the international patent systems. A ‘composite index of S&T capacity’ developed by researchers at the Rand Corporation is described and applied comparatively. We have compiled data on Iranian S&T activity under the following headings: R&D expenditure, population and educational profile, academic personnel, R&D personnel. A scientometric analysis of Iranian S&T publications using the Science Citation Index is presented, and possible shortcomings of this approach discussed. All findings are reported, analysed, and discussed with reference to the various compilations of S&T indicators and to our earlier studies on Iranian scientific publications. In particular we analyse annual distributions of world and Iranian S&T publications, international collaboration of Iranian scientists, journals where Iranian scientists publish and journals they cite, the most productive Iranian scientists and the extent of their influence nationally and internationally, and S&T subject areas in which Iranian scientists excel. We conclude with comments and suggestions for the continued development of Iran’s ST capacity.

Keywords: Analysis, Citation, Citation Index, Collaboration, Countries, Developing Countries, Development, Indicators, Iran, Journals, Patent, Patents, Publication, Publications, Research, Research and Development, Science, Science and Technology, Science Citation Index, Scientific Publications, Scientometric Analysis, Statistics, Technology

# Title: Interfaces

Full Journal Title: Interfaces

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0092-2102

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wright, M. and Armstrong, J.S. (2008), The ombudsman: Verification of citations: Fawlty towers of knowledge? *Interfaces*, **38** (2), 125-132.

Full Text: [2008\Interfaces38, 125.pdf](2008/Interfaces38,%20125.pdf)

Abstract: The prevalence of faulty citations impedes the growth of scientific knowledge. Faulty citations include omissions of relevant papers, incorrect references, and quotation errors that misreport findings. We discuss key studies in these areas. We then examine citations to “Estimating nonresponse bias in mail surveys,” one of the most frequently cited papers from the Journal of Marketing Research, to illustrate these issues. This paper is especially useful in testing for quotation errors because it provides specific operational recommendations on adjusting for nonresponse bias; therefore, it allows us to determine whether the citing papers properly used the findings. By any number of measures, those doing survey research fail to cite this paper and, presumably, make inadequate adjustments for nonresponse bias. Furthermore, even when the paper was cited, 49 of the 50 studies that we examined reported its findings improperly. The inappropriate use of statistical-significance testing led researchers to conclude that nonresponse bias was not present in 76 percent of the studies in our sample. Only one of the studies in the sample made any adjustment for it. Judging from the original paper, we estimate that the study researchers should have predicted nonresponse bias and adjusted for 148 variables. In this case, the faulty citations seem to have arisen either because the authors did not read the original paper or because they did not fully understand its implications. To address the problem of omissions, we recommend that journals include a section on their websites to list all relevant papers that have been overlooked and show how the omitted paper relates to the published paper. In general, authors should routinely verify the accuracy of their sources by reading the cited papers. For substantive findings, they should attempt to contact the authors for conformation or clarification of the results and methods. This would also provide them with the opportunity to enquire about other relevant references. Journal editors should require that authors sign statements that they have read the cited papers and, when appropriate, have attempted to verify the citations.

Keywords: Accuracy, Adjustment, Authors, Bias, Citation Errors, Citations, Contact, Errors, Evidence-Based Research, General, Growth, Hawthorne, Journals, Knowledge, Methods, Nonresponse Bias, Papers, Prevalence, Quotation, Quotation Accuracy, Quotation Errors, Reading, Recommendations, References, Research, Sources, Survey, Survey Research, Surveys, Testing

? Martin, B. (2008), Comment: Citation shortcomings: Peccadilloes or plagiarism? *Interfaces*, **38** (2), 136-137.

Full Text: [2008\Interfaces38, 136.pdf](2008/Interfaces38,%20136.pdf)

? Hamrick, T.A., Fricker, R.D. and Brown, G.G. (2010), Assessing what distinguishes highly cited from less-cited papers published in interfaces. *Interfaces*, **40** (6), 454-464.

Full Text: [2010\Interfaces40, 454.pdf](2010/Interfaces40,%20454.pdf)

Abstract: We evaluate what distinguishes a highly cited Interfaces paper from other Interfaces papers that are cited less often. Citations are used to acknowledge prior relevant research, to document sources of information, and to substantiate claims. As such, citations play a key role in the evolution of knowledge. More recently, citations are also being used to quantify the impact of papers and journals, a practice not without controversy, but one that motivates our work here. We find that Edelman competition papers, longer papers, tutorials, papers with larger numbers of references to prior literature, and papers with a larger number of “callouts” (a feature no longer used by Interfaces) tend to have a higher number of citations.

Keywords: Bibliometrics, Citation, Citation, Citations, Citing Behavior, Continue, Evolution, Highly-Cited, Impact, Impact Factor, Index, Journals, Literature, Old Papers, Reasons, References, Research

# Title: Interlending & Document Supply

Full Journal Title: [Interlending & Document Supply](http://www.emeraldinsight.com/Insight/viewContainer.do?containerType=Journal&containerId=10957)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0264-1615

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Weech, T.L. (2002), Back to the future - when resource sharing seemed to work. The rise and fall of a successful consortial resource sharing network. *Interlending & Document Supply*, **30** (2), 80-86.

Full Text: [I\Int Doc Sup30, 80.pdf](I/Int%20Doc%20Sup30,%2080.pdf)

Abstract: In the early 1980s the state of Illinois formed a state-wide resource sharing consortium under a state network called ILLINET, founded on an OCLC-based bibliographic database and a consortium of 18 regional library systems. This consortium successfully supported resource sharing among all types of library for nearly 15 years. In the mid-1990s, financial and technical developments led to the dissolving of the consortium and the realignment of some of its major academic library members with other academic libraries outside the original group. Thus what was once considered a model for the future of multi-type library consortia became a dysfunctional and non-operative organisation. This paper examines the financial, political, and technical factors that led to these changes and assesses the short- and long-term impacts on resource sharing for users of the original consortium. Other similar resource sharing consortia models are examined and compared with the Illinois experience. Possible lessons and implications are discussed and possible outcomes listed.

? Meadows, J. (2005), A practical line in bibliometrics. *Interlending & Document Supply*, **33** (2), 90-94.

Full Text: [2005\Int Doc Sup33, 90.pdf](2005/Int%20Doc%20Sup33,%2090.pdf)

Abstract: Purpose - The purpose of this article is to describe Maurice Line’s continuing interest in bibliometrics and in its possible application to library problems since the 1970s. He has especially emphasized two strands. One is the concept of obsolescence and how it applies in practice. The other is citation studies of the social sciences, which tend to have been ignored in comparison with the sciences. He has particularly explored the limitations that need to be taken into account when trying to apply bibliometric ideas in practical contexts. Design, methodology, approach - An analysis of Line’s publications on bibliometrics led to a selection of major themes in his writings. A subsequent study of the publications of others who wrote on this topic over the same period provided a framework for assessing his work. Findings - Maurice Line played an important role in the development of this area of bibliometrics, though he slightly modified some of his early ideas as time has passed. Originality, value - Provides a background to Maurice Line’s interest in bibliometrics since the 1970s.

Keywords: Bibliometric, Bibliometrics, Citation, Development, Growth, Half-Life, Information Science, Obsolescence, Obsolescence, Publications, Sciences, Serials, Size, Social-Science Literature, Time

? Bensman, S.J. (2007), Donald J. Urquhart and the integration of science with librarianship: Part 1. *Interlending & Document Supply*, **35** (2), 74-84.

Abstract: Purpose - The purpose of this article is to analyze the historical significance of Donald J. Urquhart, who established the National Lending Library for Science and Technology (NLL) that later was merged into the British Library Lending Division (BLLD), now called the British Library Document Supply Centre (BLDSC). Design/methodology/approach - The paper presents a short history of the probabilistic revolution, particularly as it developed in the UK in the form of biometric statistics due to Darwin’s theory of evolution. It focuses on the overthrow of the normal paradigm, according to which frequency distributions in nature and society conform to the normal law of error. The paper discusses the importance of the Poisson distribution and its utilization in the construction of stochastic models that better describe reality. Here the focus is on the compound Poisson distribution in the form of the negative binomial distribution (NBD). The paper then shows how Urquhart extended the probabilistic revolution to librarianship by using the Poisson as the probabilistic model in his analyses of the 1956 external loans made by the Science Museum Library (SML) as well as in his management of the scientific and technical (sci/tech) journal collection of the NLL. Thanks to this, Urquhart can be considered as playing a pivotal role in the creation of bibliometrics or the statistical bases of modern library and information science. The paper relates how Urquhart’s son and daughter-in-law, John A. and Norma C. Urquhart, completed Urquhart’s probabilistic breakthrough by advancing for the first time the NBD as the model for library use in a study executed at the University of Newcastle upon Tyne, connecting bibliometrics with biometrics. It concludes with a discussion of Urquhart’s Law and its probabilistic implications for the use of sci/tech journals in a library system. Findings - By being the first librarian to apply probability to the analysis of sci/tech journal use, Urquhart was instrumental in the creation of modern library and information science. His findings force a probabilistic re-conceptualization of sci/tech journal use in a library system that has great implications for the transition of sci/tech journals from locally held paper copies to shared electronic databases. Originality/value - Urquhart’s significance is considered from the perspective of the development of science as a whole as well as library and information science in particular.

Keywords: Analysis, Bibliometrics, Databases, Development, Distributions, Document Delivery, Formulation, History, Information Science, Information-Science, Interlending, Journals, Librarianship, Library and Information Science, Management, National-Lending-Library, Probability, Probability Theory, Science, Sciences, Serials, Statistics, System, Technical Journal Collections, Technology, Theory, University, Urquharts Law

? Bensman, S.J. (2007), Donald J. Urquhart and the integration of science with librarianship: Part 2. *Interlending & Document Supply*, **35** (3), 124-130.

Abstract: Purpose - To analyze the historical significance of Donald J. Urquhart, who established the National Lending Library for Science and Technology (NLL) which later was merged into the British Library Lending Division (BLLD), now called the British Library Document Supply Centre (BLDSC). His significance will be considered from the perspective of the development of science as a whole as well as library and information science in particular. Design/methodology/approach - The paper presents a short history of the probabilistic revolution, particularly as it developed in Britain in the form of biometric statistics due to Darwin’s theory of evolution. It focuses on the overthrow of the normal paradigm, according to which frequency distributions in nature and society conform to the normal law of error. The paper discusses the importance of the Poisson distribution and its utilization in the construction of stochastic models that better describe reality. Here the focus is on the compound Poisson distribution in the form of the negative binomial distribution (NBD). The paper then shows how Urquhart extended the probabilistic revolution to librarianship by using the Poisson as the probabilistic model in his analyses of the 1956 external loans made by the Science Museum Library (SML) as well as in his management of the scientific and technical (sci/tech) journal collection of the NLL. Due to this, Urquhart can be considered as playing a pivotal role in the creation of bibliometrics or the statistical bases of modern library and information science. The paper relates how Urquhart’s son and daughter-in-law, John A. and Norma C. Urquhart, completed Urquhart’s probabilistic breakthrough by advancing for the first time the NBD as the model for library use in a study done at the University of Newcastle upon Tyne, connecting bibliometrics with biometrics. It concludes with a discussion of Urquhart’s Law and its probabilistic implications for the use of sci/tech journals in a library system. Findings - By being the first librarian to apply probability to the analysis of sci/tech journal use, Urquhart was instrumental in the creation of modern library and information science. His findings force a probabilistic re-conceptualization of sci/tech journal use in a library system that has great implications for the transition of sci/tech journals from locally held paper copies to shared electronic databases. Originality/value - This is the second part of an article describing the seminal contribution of Donald Urquhart to the development of document supply in the UK and internationally.

Keywords: Analysis, Bibliometrics, Databases, Development, Distributions, Document Delivery, History, Information Science, Information-Science, Interlending, Journals, Library and Information Science, Management, Mathematical Contributions, National-Lending-Library, Probability, Probability Theory, Science, Serials, Skew Variation, Statistics, System, Technical Journal Collections, Technology, Theory, University, Urquharts Law

# Title: Internal Medicine

Full Journal Title: [Internal Medicine](http://www.jstage.jst.go.jp/browse/internalmedicine/_vols)

ISO Abbreviated Title: Intern. Med.

JCR Abbreviated Title: Internal Med

ISSN: 0918-2918

Issues/Year: 12

Language: English

Journal Country/Territory: Japan

Publisher: Japan Soc Internal Medicine

Publisher Address: 34-3 3-Chome Hongo Bunkyo-Ku, Tokyo 113, Japan

Subject Categories:

Medicine, General & Internal: Impact Factor 1.040, 72/132 (2009)

? Fukui, T. and Rahman, M. (2002), Contribution of research in basic and clinical sciences in Japan. *Internal Medicine*, **41** (8), 626-628.

Full Text: [2002\Int Med41, 626.pdf](2002/Int%20Med41,%20626.pdf)

Abstract: Objective To investigate the degree of Japan’s contribution in basic and clinical research in the last decade.

Methods Original articles published in 1990-2000 in highly reputed basic and clinical journals were accessed through MEDLINE database. The number of articles having affiliation with a Japanese institution was counted separately for basic and clinical journals.

Results Of total articles, Japan’s contributions in basic and clinical research were 3.1 % and 0.7 %, respectively (p=0.0001). The recent increase in the contribution was significant for basic research (p=0.01), but not for clinical research (p=0.91).

Conclusion The barriers to boosting high quality clinical research in Japan should be determined and accordingly appropriate measures should be taken forthwith.

Keywords: MEDLINE, Medical Journal

? Yuan, W.Z., Yang, K.H., Ma, B., Li, Y.M., Guan, Q.L., Wang, D.H. and Yang, L.J. (2009), Moxifloxacin-based triple therapy versus clarithromycin-based triple therapy for first-line treatment of helicobacter pylori infection: A meta-analysis of randomized controlled trials. *Internal Medicine*, **48** (24), 2069-2076.

Full Text: [2009\Int Med48, 2069.pdf](2009/Int%20Med48,%202069.pdf)

Abstract: Background Moxifloxacin-based triple therapy has been suggested as an alternative first line therapy to clarithromycin-based triple therapy for Helicobacter pylori infection. Aims To systematically review the efficacy and tolerance of moxifloxacin-based triple therapy, and to conduct a meta-analysis of studies comparing this regimen with clarithromycin-based triple therapy. Methods A search of The Cochrane Library, PUBMED, EMBASE, EBM Review databases, Science Citation Index Expanded, and CMB (Chinese Biomedical Literature Database) was performed. Randomized controlled trials comparing moxifloxacin-based triple therapy to gold standard triple therapy in the first-line treatment of Helicobacter pylori infection were selected for meta-analysis. Relative risk was used as a measure of the effect of the two above-mentioned regimens with a fixed-effects model using the methods of DerSimonian and Laird. Results Four randomized controlled trials totaling 772 patients were included. The meta-analysis showed that the mean eradication rate was 84.1 (318/378) in the moxifloxacin-based triple therapy group and 73.6 (290/394) in the clarithromycin-based triple therapy group; there was statistical significance between the two groups (RR, 1.13; 95% CI, 1.01, 1.27; P=0.04). There were no statistically significant difference in the overall side effects (RR, 0.61; 95% CI, 0.25, 1.48; P<0.28). Conclusions Moxifloxacin-based triple therapy is more effective and does not increase the incidence of overall side effects compared to clarithromycin-based triple therapy in the treatment of H. pylori infection.

Keywords: 2nd-Line Treatment, Amoxicillin, Antibiotic-Resistance, Antimicrobial Resistance, Citation, Clarithromycin, Clinical-Trials, Database, Developing-Country, Eradication, First-Line Treatment, Groups, Helicobacter Pylori, Lansoprazole, Levofloxacin, Literature, Meta-Analysis, Moxifloxacin, Quadruple Therapy, Review, Science Citation Index, Treatment

? Yuan, W.Z., Li, Y.M., Guan, Q.L., Yang, K.H., Jiang, L., Wang, D.H. and Yang, L.J. (2010), Is antimicrobial susceptibility testing necessary before first-line treatment for *Helicobacter pylori* Infection? Meta-analysis of randomized controlled trials. *Internal Medicine*, **49** (12), 1103-1109.

Full Text: [2010\Int Med49, 1103.pdf](2010/Int%20Med49,%201103.pdf)

Abstract: Background With the wide use of antibiotics, antibiotic-resistant Helicobacter pylori strains are becoming increasingly prevalent. It has been hypothesized that culture-guided therapy might help to increase treatment success. But the effects and the costs still remain controversial. Aims To systematically review the efficacy and the cost of culture-guided triple therapy, compared to standard triple regimen for first-line treatment of Helicobacter pylori infection. Methods A search of the Cochrane Library, PubMed, EMBASE, Science Citation Index Expanded and CBM was performed. Randomized controlled trials comparing culture-guided triple therapy to standard triple therapy in the first-line treatment of Helicobacter pylori infection were selected for meta-analysis. Relative risk was used as a measure of the effect of two regimens mentioned above with a fixed-effects model using the methods of DerSimonian and Laird. Results Five randomized controlled trials totaling 701 patients were included. The meta-analysis showed that culture-guided triple therapy was superior referring to a higher eradication rate from intention-to-treat analyses (RR, 0.84; 95% CI, 0.77, 0.90; p<0.00001) and a lower overall cost. Conclusion Culture-guided triple therapy was more effective than standard triple therapy for first-line treatment of Helicobacter pylori infection. Based on the only paper focused on the overall cost, the culture-guided triple therapy was also more cost saving. Antimicrobial susceptibility testing is necessary before first-line treatment for Helicobacter pylori infection.

Keywords: Antibiotics, Citation, Clarithromycin, Consensus Conference, Costs, Culture-Guided Triple Therapy, Effects, Eradication Therapy, First-Line Treatment, Helicobacter Pylori, Meta-Analysis, Methods, Model, Overall Cost, Peptic-Ulcer, Pretreatment Antibiotic-Resistance, Proton-Pump Inhibitor, Pubmed, Randomized Controlled Trials, Review, Risk, Risk-Factors, Science, Science Citation Index, Standard Triple Therapy, Success, Therapy, Treatment, Treatment Failures, Triple Therapy, United-States

? Ho, Y.S., Satoh, H. and Lin, S.Y. (2010), Japanese lung cancer research trends and performances in Science Citation Index. *Internal Medicine*, **49** (20), 2219-2228.

Full Text: [2010\Int Med49, 2219.pdf](2010/Int%20Med49,%202219.pdf); [2010\Int Med49-Ho.pdf](2010/Int%20Med49-Ho.pdf)

Abstract: Objective This study was undertaken to explore a bibliometric approach to quantitatively assess current research trends in lung cancer in Japan, using the related literature in the Science Citation Index (SCI) database from 1991 to 2008. Materials and Methods Articles were analyzed by the scientific output and research performances of individuals, institutes, and collaborative countries with Japan. Distribution of words in the article title, author keywords, and KeyWords Plus in different periods was applied to evaluate research trends by the frequency of keywords used. Results Keyword analysis indicated that there has been a strategy to connect molecular biology with clinical practice. Researchers in Japan have published high impact articles related to non-small cell and small cell lung cancer. Conclusion Finally, this study highlights the topics in lung cancer research that are becoming popular in Japan.

Keywords: Analysis, Articles, Author, Bibliometric, Biology, Cancer, Cancer Research, Carcinoma, Cisplatin, Citation, Combination, Concurrent, Distribution, Gefitinib, Japan, Keyword, Literature, Lung Cancer, Metaanalysis, Mutations, Performance, Phase-III, Research, Research Trends, SCI, Science Citation Index, Scientific Output, Scientometrics, Sequential Thoracic Radiotherapy, System, Web of Science

? Li, Y.Y. (2011), Endothelial nitric oxide synthase G894T gene polymorphism and essential hypertension in the Chinese population: A meta-analysis involving 11,248 subjects. *Internal Medicine*, **50** (19), 2099-2106.

Full Text: [2011\Int Med50, 2099.pdf](2011/Int%20Med50,%202099.pdf)

Abstract: Background The endothelial nitric oxide synthase (eNOS) G894T gene polymorphism has been suggested to be linked to the risk of essential hypertension (EH), however the results are still debatable. Objective and Methods To assess the association between eNOS G894T gene polymorphism and EH, such electronic databases as Pubmed, Embase, Web of Science, China Biological Medicine Database (CBMD) and China National Knowledge Infrastructure (CNKI) were searched. The selection criteria were as follows: a) Evaluation of the association of eNOS G894T gene polymorphism and EH. b) EH diagnosis in compliance with EH diagnosis criteria of the World Health Organization (WHO) in 1999. c) The study results were in line with the Hardy-Weinberg equilibrium (HWE). In 23 separate studies with 11,248 subjects the relation between eNOS G894T gene polymorphism and EH was analyzed by current meta-analysis. Random effect model was used to calculate the pooled odds ratio (ORs) and its corresponding 95% confidence interval (95% CI). Results In this eNOS G894T gene polymorphism and EH meta-analysis in the Chinese population, the distribution of T allele frequency was 0.154 for EH group and 0.128 for the control group. A significant association was found between G894T gene polymorphism and EH (p=0.0007). The pooled or for the distribution frequency of T allele was 1.33 (95% CI: 1.13-1.56, P(heterogeneity) <0.00001). In the stratified analysis by ethnicity, there was a significant association in Han subgroup (p=0.005). The pooled or for the distribution frequency of T allele was 1.31 (95% CI: 1.09-1.59, P(heterogeneity) <0.00001). No significant increased risk for EH was found in the non-Han subgroup (p=0.08). Conclusion In the current meta-analysis, T allele of eNOS G894T gene was suggested to be related to the increased risk of EH in the Chinese population, particularly in those of Han ethnicity.

Keywords: Analysis, Association, Bias, China, Compliance, Control, Database, Databases, Diagnosis, Endothelial Nitric Oxide Synthase, Equilibrium, Ethnicity, Evaluation, Frequency, G894T, Gene Polymorphism, Han Chinese, Health, Hypertension, Knowledge, Meta Analysis, Meta-Analysis, Methods, Model, Polymorphism, Ratio, Risk, Science, Web of Science, WHO

# Title: Internal Medicine Journal

Full Journal Title: [Internal Medicine Journal](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1445-5994/issues)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Falagas, M.E., Kouranos, V.D., Michalopoulos, A., Rodopoulou, S.P., Batsiou, M.A. and Karageorgopoulos, D.E. (2010), Comparison of the distribution of citations received by articles published in high, moderate, and low impact factor journals in clinical medicine. *Internal Medicine Journal*, **40** (8), 587-591.

Full Text: [2010\Int Med J40, 587.pdf](2010/Int%20Med%20J40,%20587.pdf)

Abstract: Background: Whether the journal impact factor (JIF) indicator reflects the number of citations to an average article of a journal in different subject categories is controversial. We sought to further investigate this issue in general and internal medicine journals. Methods: We selected to evaluate three journals of the above subject category, in each of three different JIF levels (high: 15.5-28.6, moderate: 4.4-4.9 and low: 1.6). Using the Scopus database, we retrieved the original research articles (after detailed screening) and review articles (as classified by Scopus) that were published in the selected journals in 2005 along with the number of citations they received in 2006 and 2007. We pooled the citations for articles of the same type in journals with the same JIF level into distinct variables. Results: There was no marked association between the distribution of citations per article published in general medical journals and their JIF. All distributions studied were skewed to the right (higher number of citations). Specifically, 16-22% of the original research articles accounted for 50% of the total citations to this type of article for all three categories of studied journals; 34-37% of original research articles accounted for 75% of citations. The respective values for review articles were 12-18% and 29-39%. Conclusion: The distribution of citations received by articles published in high, moderate and low impact factor journals in clinical medicine seems similar. The JIF is not an accurate indicator of the citations the average article receives; articles published in low impact factor journals can still be highly cited and vice versa.

Keywords: Bibliographic Database, Bibliometrics, Citation Analysis, Publication, Research, Statistical Distribution

# Title: International Applied Mechanics

Full Journal Title: International Applied Mechanics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

IDS Number: BN07M

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Guz, A.N., Rushchitsky, J.J. and Chernyshenko, I.S. (2005), On a modern philosophy of evaluating scientific publications. *International Applied Mechanics*, **41** (10), 1085-1091.

Full Text: [2005\Int App Mec41, 1085.pdf](2005/Int%20App%20Mec41,%201085.pdf)

Abstract: Current approaches to the citation analysis of scientific publications are outlined. Science Citation Index, Impact Factor, Immediacy Index, and the selection procedure for Essential Science Indicators-a relatively new citation analysis tool-are described. The new citation evaluation tool has yet not been discussed adequately by mechanicians.

Keywords: Analysis, Bodies, Citation, Citation Analysis, Composites, Elastic-Waves, Essential Science Indicators, Evaluation, Fracture-Mechanics, Immediacy Index, Impact Factor, Laws, Liquid, Modern Philosophy, Parameters, Propagation, Publications, Science Citation Index, Scientific Publication, Stability, Thermoviscoplastic Deformation

# Title: International Archives of Occupational and Environmental Health

Full Journal Title: [International Archives of Occupational and Environmental Health](http://springerlink.metapress.com/app/home/journal.asp?wasp=ngda3qwtlp0jrk5jte27&referrer=parent&backto=searchpublicationsresults,1,1;)

ISO Abbreviated Title: Int. Arch. Occup. Environ. Health

JCR Abbreviated Title: Int Arch Occ Env Hea

ISSN: 0340-0131

Issues/Year: 8

Journal Country/Territory: Germany

Language: English

Publisher: Springer Verlag

Publisher Address: 175 Fifth Ave, New York, NY 10010

Subject Categories:

Public, Environmental & Occupational Health: Impact Factor 1.167, 45/85

? Zielhuis, R.L. (1982), Standards for chemical-quality of drinking-water: A critical-assessment. *International Archives of Occupational and Environmental Health*, **50** (2), 113-130.

? Aono, H. and Araki, S. (1988), Circadian rhythms in the urinary excretion of heavy metals and organic substances in metal workers in relation to renal excretory mechanism: Profile analysis. *International Archives of Occupational and Environmental Health*, **60** (1), 1-6.

Abstract: Circadian rhythms in the urinary excretion of eleven heavy metals and organic substances were examined under free, water-restrictive and water-loading conditions for 6 d (2 d for each of the three conditions) in twenty metal workers exposed to lead, zinc and copper. Circadian rhythms were found for all heavy metals and organic substances as well as for urinary flow (UF) rate, creatinine (Cn) and total urinary solutes (TUS). The Cn rhythm was significantly unparallel to the UF rhythm under the water-loading condition, indicating that the two rhythms were essentially different from each other. Circadian rhythms of the eleven urinary substances were then related to the Cn and UF rhythms, using profile analysis. The results indicated that the rhythms in the manganese, chromium, copper and beta-2-microglobulin excretion depend on the Cn rhythm, i.e. the rhythm of glomerular filtration; the rhythms in the hippuric acid, delta-aminolevulinic acid and TUS excretion are on the UF rhythm, i.e. the rhythm of reabsorption by the distal tubule and collecting duct. On the other hand, the rhythms in the lead, inorganic mercury, cadmium, zinc and coproporphyrin excretion were considered as reflecting complex renal excretory mechanisms.

? van Wijnen, J.H. and Stijkel, A. (1988), Health risk assessment of residents living on harbour sludge. *International Archives of Occupational and Environmental Health*, **61** (1-2), 77-87.

Abstract: A modelled approach for the assessment of exposure and health risks in a case of soil pollution with an unknown but probably large number of potential contaminants is presented. In 1983 the Steendijkpolder, a housing estate of about 800 houses, an agglomeration of schools and a tennis hall was built directly on a 4-m-thick layer of harbour sludge. The sludge originated from around 20 harbour basins in Rotterdam and the industrial area around the Nieuwe Waterweg. In the soil organic solvents, PAH’s, aldrin, dieldrin, isodrin, telodrin and several heavy metals were found to be present as contaminants. Not all contaminants, including a number of halogenated compounds, were identified. The investigation of the other relevant environmental compartments in this situation, e.g. drinking-water, indoor-air and home grown vegetables showed that soil ingestion was the predominant route of intake of contaminants. Therefore the exposure of infants (age: 2-3 years) was calculated. The calculated intake of PAH by soil ingestion was around half the average intake of PAH in the daily diet. The extra exposure to drins (a group of cyclodiene insecticides) due to soil ingestion and inhaled contaminated indoor air was calculated to exceed twice the Acceptable Daily Intake (ADI) of dieldrin. The calculated maximal intake of Pb by soil ingestion exceeded the average intake of Pb in the daily diet by around 1.4 times. The maximal intake by soil ingestion of the other identified contaminants was relatively low. It was concluded that with the present knowledge the calculated exposure would not result in observable health damage.

? Ogata, M. and Taguchi, T. (1988), Simultaneous determination of urinary creatinine and metabolites of toluene, xylene, styrene, ethylbenzene and phenol by automated high performance liquid chromatography. *International Archives of Occupational and Environmental Health*, **61** (1-2), 131-140.

Abstract: An attempt was made to establish a method for the direct determination of urinary concentrations of creatinine, hippuric acid, methylhippuric acid and mandelic acid by automated high performance liquid chromatography (HPLC). Urine was diluted with distilled water or mobile phase, then the mixture was centrifuged and the supernatant was injected into HPLC. A stainless-steel column packed with octadecyl silanized silicate was used, and the mobile phase was a solution of [20 mM potassium phosphate monobasic containing 3 mM sodium 1-decanesulfonate]/acetonitrile (85/15). Another HPLC method for the determination of urinary concentration of phenol, metabolites of benzene and/or phenol is also described. Phenyl sulfate and phenyl glucuronide in urine were hydrolyzed enzymatically into phenol. The hydrolyzed mixture was injected into HPLC with the ODS column. The mobile phase was a solution of [20 mM potassium phosphate monobasic containing 1 mM sodium 1-decanesulfonate]/acetonitrile (85/15). The ratio of hippuric acid (HA) concentration to creatinine concentration determined by the urine of students after physical exercise was similar to that before exercise. Moreover, the coefficient of correlation found between the toluene concentration in a workshop and the HA concentration in workers’ urine, corrected for creatinine, was higher than that obtained between the toluene concentration and the uncorrected HA concentration. For assays on stored urine samples, urine was spotted on filter paper, dried and kept several weeks, and then MA, HA, o-MHA, m-MHA and creatinine in the filter paper were eluted with 50% methanol and their concentrations determined by HPLC.

? Andersen, I. and Svenes, K.B. (1989), Determination of nickel in lung specimens of thirty-nine autopsied nickel workers. *International Archives of Occupational and Environmental Health*, **61** (4), 289-295.

Abstract: Lung specimens from 39 nickel refinery workers autopsied during the period from 1978 to, 1984 were analyzed for nickel. Fifteen of the workers were employed in the Roasting and Smelting Department, where exposure to nickel was predominantly in the form of nickel-copper oxides, Ni3S2 and metallic dust. The remaining 24 men worked in the Electrolysis Department. Exposure in this group was considered to be mostly to the water-soluble compounds, NiSO4 and NiCl2, but also to a lesser degree to water-insoluble nickel compounds such as nickel-copper oxides and sulphides. The arithmetic mean±SD for nickel concentration in lung tissues expressed in micrograms g-1dry wt for the 39 workers was 150±280. In the workers employed in the Roasting and Smelting Department, the average nickel concentration was 330±380; for those who worked in the Electrolysis Department it was 34±48. Lung tissue from 16 autopsied persons not connected with the refinery had an average nickel concentration of 0.76±0.39. Statistical analysis based on log-normal distributions of the measured nickel concentrations allowed three major conclusions to be formulated (1) nickel refinery workers exhibit elevated nickel levels in lung tissues at autopsy; (2) workers of the Electrolysis Department and the Roasting Smelting Department constitute distinct groups with respect to the accumulation of nickel in lung tissue; (3) workers who were diagnosed to have lung cancer had the same lung nickel concentrations at autopsy as those who died of other causes.

? Harada, N., Yoshida, I. and Kimura, K. (1989), Heart rate variation and serum dopamine-beta-hydroxylase activity in workers exposed to vibration. *International Archives of Occupational and Environmental Health*, **61** (6), 369-373.

Abstract: Tests of autonomic nervous function were conducted on 38 workers who had been exposed to vibration [16: VWF (+) group, 22: VWF (-) group, VWF: vibration-induced white finger] and 17 workers who had not been exposed to vibration (control group). Measurements were made of R-R interval variation of the electrocardiogram at rest and during deep breathing, and serum dopamine-beta-hydroxylase (DBH) activity during an immersion test of the hand in 10 degrees C water. Heart-rate variation related to respiratory arrhythmia indicates parasympathetic activity, and serum DBH activity is regarded as an indicator of sympathetic activity. The variations in the R-R interval during deep breathing were smallest in the VWF (+) group, followed by the VWF (-) group (P less than 0.05 and P less than 0.01, compared with the control group). The DBH activity of the VWF (+) group was larger than those of the VWF (-) group and the control group, however, the differences were small and not statistically significant. The reduced R-R interval variations in the VWF (+) and the VWF (-) groups support the hypothesis that autonomic nervous function can be affected by exposure to vibration. The change of DBH activity induced by cold exposure may be an unsuitable index of sympathetic tone. Further study of the autonomic nervous function in workers with vibration syndrome is recommended.

? Nakamoto, M. (1990), Responses of sympathetic nervous system to cold exposure in vibration syndrome subjects and age-matched healthy controls. *International Archives of Occupational and Environmental Health*, **62** (2), 177-181.

Abstract: Plasma norepinephrine and epinephrine in vibration syndrome subjects and age-matched healthy controls were measured for the purpose of estimating the responsibility of the sympathetic nervous system to cold exposure. In preliminary experiment, it was confirmed that cold air exposure of the whole body was more suitable than one-hand immersion in cold water. In the main experiment, 195 subjects were examined. Sixty-five subjects had vibration syndrome with vibration-induced white finger (VWF + group) and 65 subjects had vibration syndrome without VWF (VWF-group) and 65 controls had no symptoms (control group). In the three groups, plasma norepinephrine levels increased during cold air exposure of whole body at 7 degrees±1.5 degrees C. Blood pressure increased and skin temperature decreased during cold exposure. Percent increase of norepinephrine in the VWF+ group was the highest while that in VWF-group followed and that in the control group was the lowest. This whole-body response of the sympathetic nervous system to cold conditions reflected the VWF which are characteristic symptoms of vibration syndrome. Excluding the effects of shivering and a cold feeling under cold conditions, it was confirmed that the sympathetic nervous system in vibration syndrome is activated more than in the controls. These results suggest that vibration exposure to hand and arm affects the sympathetic nervous system.

? Ogata, M. and Iwamoto, T. (1990), Enzymatic assay of formic acid and gas chromatography of methanol for urinary biological monitoring of exposure to methanol. *International Archives of Occupational and Environmental Health*, **62** (3), 227-232.

Abstract: An enzymatic assay method for the determination of urinary formic acid is described. Formic acid in urine was cleaved to carbon dioxide and water by formic acid dehydrogenase, whereby NAD+ was converted to NADH, which reacted with INT (p-iodonitrotetrazolium violet) in the presence of NAD-diaphorase. The color thus produced was determined at 500 nm. In addition, a simple gas chromatographic method of urinary formic acid is described, in which head space gas of formic acid methylester was applied into the wide bore column. The urinary formic acid concentrations by the enzymatic method agreed well with that by the gas chromatographic method. A simple gas chromatographic method for urinary methanol assay is also described. Acetonitrile was added to an equal volume of urine containing methanol. After centrifugation, the supernatant was injected into gas chromatography (GC). The peaks of urinary methanol and ethanol were separated by GC. Formic acid and methanol in urine of unexposed healthy subjects and workers exposed to methanol were analyzed by the colorimetric and gas chromatographic methods. Geometric mean concentrations of urinary formic acid and methanol in the healthy subjects were 7.82 mg/g creatinine and 1.34 mg/l, respectively. The concentration ratio of formic acid to methanol in the urine of the workers exposed to methanol was calculated to be 3.67±2.10, which agreed with the ratio under a controlled exposure experiment. A slower excretion of formic acid than that of methanol in the urine of a volunteer was also observed.

? Araki, S., Sata, F. and Murata, K. (1990), Adjustment for urinary flow rate: An improved approach to biological monitoring. *International Archives of Occupational and Environmental Health*, **62** (6), 471-477.

Abstract: The use of urinary monitoring in medical surveillance programs in industry requires the development of an accurate and unbiased index of urinary concentrations of occupational toxins. To examine the effects of urinary flow rate on adjusted and non-adjusted urinary excretion of 11 heavy metals and organic substances, 19 metal-foundry workers were studied during four time periods of the day under conditions of water restriction and loading. The results indicate that urinary flow rate significantly affects not only the non-adjusted urinary concentration for all substances, but also affects timed excretion as well as concentrations adjusted to urinary specific gravity and to urinary creatinine during any time period of the day. On the other hand, the concentration adjusted to urinary flow rate (UF-adjusted concentration) is independent by definition of urinary flow; therefore, this adjustment is applicable for highly diluted and highly concentrated urine samples without repetition of urine collection. It is concluded that UF-adjusted concentration is a useful index for the measurement of most urinary substances, while adjustments to urinary specific gravity and to urinary creatinine concentration have only limited utility in evaluating toxin levels in spot urine samples.

? Sakakibara, H., Hashiguchi, T., Furuta, M., Kondo, T., Miyao, M. and Yamada, S. (1991), Circulatory disturbances of the foot in vibration syndrome. *International Archives of Occupational and Environmental Health*, **63** (2), 145-148.

Abstract: Circulatory disturbances of the foot in patients with vibration syndrome were studied by measuring the skin temperature of both index fingers and great toes through a 3-min immersion of the right foot in cold water at 10 degrees C. Subjects included 11 patients with vibration-induced white finger (VWF) [VWF (+) group], 12 patients without VWF [VWF (-) group], and 20 healthy referents not exposed to vibration. Patients were all male chain saw operators who had scarcely been exposed to vibration of the foot. The prevalence of coldness felt in the upper and lower extremities was greater than 90% in the VWF (+) group, about 60% in the VWF (-) group, and less than 10% in the referents. The extent of the coldness was greatest in the VWF (+) group. The skin temperature of both fingers and toes was lowest in the VWF (+) group, somewhat higher in the VWF (-) group, and highest in the referents both before and after immersion. These findings indicate that patients with vibration syndrome, especially those with VWF, have circulatory disturbances in the foot as well as in the hand. The disturbances in the foot may be related to long-term repeated vasoconstriction in the foot induced by hand-arm vibration through the sympathetic nervous system.

? Karjalainen, S., Kerttula, R. and Pukkala, E. (1992), Cancer risk among workers at a copper nickel smelter and nickel refinery in Finland. *International Archives of Occupational and Environmental Health*, **63** (8), 547-551.

? Angerer, J., Heinzow, B., Reimann, D.O., Knorz, W. and Lehnert, G. (1992), Internal exposure to organic-substances in a municipal waste incinerator. *International Archives of Occupational and Environmental Health*, **64** (4), 265-273.

? Liou, S.H., Wu, T.N., Chiang, H.C., Yang, G.Y., Wu, Y.Q., Lai, J.S., Ho, S.T., Guo, Y.L., Ko, Y.C. and Chang, P.Y. (1994), Blood lead levels in the general population of Taiwan, Republic of China. *International Archives of Occupational and Environmental Health*, **66** (4), 255-260.

Abstract: The purpose of this study was to investigate the environmental lead exposure of the general population in Taiwan. A total of 2919 residents of Taiwan were selected by multistage sampling methods. The participants were characterized by questionnaires and 10 ml venous blood was collected for blood lead measurement. A quality assurance/quality control program was designed during the analysis of blood lead levels. The mean blood lead level of 2719 residents without occupational lead exposure was 8.29±5.92 micrograms/dl. After adjustment for age and sex distribution to the Taiwan general population, the mean blood lead level was 8.10 micrograms/dl. Adjusted for an 11% underestimation of blood lead levels among the six laboratories, the mean blood lead level was estimated to be 8.99 micrograms/dl. This study also found that blood lead levels were associated with personal characteristics, i.e., gender, ethnic group, education level; lifestyle factors, i.e., smoking, alcohol consumption, sources of drinking water; and residential location, i.e., levels of urbanization, distance of house from the road. However, age, floor of residence, milk consumption, betel nut consumption, and Chinese herbal drug consumption were not found to be associated with blood lead levels. These results show that blood lead levels in Taiwan residents were not higher than in most developed and developing countries. Environmental lead pollution does not seem to be a serious problem in Taiwan.

? Sata, F., Araki, S., Yokoyama, K. and Murata, K. (1995), Adjustment of creatinine-adjusted values in urine to urinary flow rate: A study of eleven heavy metals and organic substances. *International Archives of Occupational and Environmental Health*, **68** (1), 64-68.

Abstract: The use of urinary monitoring in medical surveillance programs in industry requires development of an accurate and unbiased index of urinary concentrations of occupational toxins. To examine the effects of urinary flow (UF) rate on the standard creatinine (Cn)-adjusted value and the UF-and Cn-adjusted values according to Greenberg and Levine and to Araki et al. for 11 heavy metals and organic substances, 19 metal-foundry workers aged 34-59 years (mean 48), who had been exposed to lead, zinc, and copper for 2-17 (mean 10) years, were studied during four periods of the day under water-free, water-restrictive and water-loading conditions for 6 days. The blood lead concentrations of the 19 workers ranged from 22 to 59 (mean 38) micrograms/dl. The results indicated that there was no significant UF effect on the UF-and Cn-adjusted values of Araki et al. for all urinary substances except mercury and coproporphyrin. On the other hand, the UF-and Cn-adjusted value of Greenberg and Levine was positively correlated with UF rate for all urinary substances, and the standard Cn-adjusted value was either positively or inversely correlated with UF rate for many urinary substances. Therefore, the UF-and Cn-adjusted value of Araki et al. is considered to be applicable to the measurement of most urinary substances under conditions of wide variation in UF rate.

? Liou, S.H., Wu, T.N., Chiang, H.C., Yang, T., Yang, G.Y., Wu, Y.Q., Lai, J.S., Ho, S.T., Guo, Y.L., Ko, Y.C., Ko, K.N. and Chang, P.Y. (1996), Three-year survey of blood lead levels in 8828 Taiwanese adults. *International Archives of Occupational and Environmental Health*, **68** (2), 80-87.

Abstract: The purpose of this study was to investigate environmental lead exposure in the general Taiwanese population. A total of 8828 Taiwanese adults selected by a multistage sampling method were investigated. Characteristics of the participants were ascertained by questionnaire and 10 ml venous blood was drawn by Public Health Nurses. The blood specimens were distributed to six laboratories for blood lead level (BLL) measurement. A quality control program was applied during the analysis of the BLLs in order to improve precision and accuracy. The arithmetic mean BLL of the 8828 Taiwanese adults was 7.70±5.23 micrograms/dl, with a maximal level of 69.1 micrograms/dl. The median was 6.5 micrograms/dl and the 90th percentile was 14.0 micrograms/dl. After logarithmic transformation, the geometric mean was 1.84±0.67 microgram/dl. This study also found that elevated BLLs were associated with certain personal characteristics, i.e., gender, ethnic group, and education level; life-style factors, such as smoking, alcohol consumption, Chinese herbal drug consumption, milk consumption, and sources of drinking water; residential location, i.e., level of urbanization; and occupational history of lead exposure. However, age, floor level of residence, distance from house to road, and betel nut consumption were not associated with elevated BLLs. These results showed that BLLs in the Taiwanese population were not higher than those in developed and developing countries. Most of the influencing factors were also found in other studies; however, local factors such as ethnic group, Chinese herbal drug consumption, and sources of drinking water are important considerations in Taiwan when examining ways to prevent overexposure to lead in the general population.

? Byrd, D.M., Roegner, M.L., Griffiths, J.C., Lamm, S.H., Grumski, K.S., Wilson, R. and Lai, S.H. (1996), Carcinogenic risks of inorganic arsenic in perspective. *International Archives of Occupational and Environmental Health*, **68** (6), 484-494.

Abstract: Induction of cancer by inorganic arsenic occurs inconsistently between species and between routes of exposure, and it exhibits different dose-response relationships between different target organs. Inhaled or ingested arsenic causes cancer in humans but not in other species. Inhaled arsenic primarily induces lung cancer, whereas ingested arsenic induces cancer at multiple sites, including the skin and various other organs. Cancer potency appears to vary by route of exposure (ingestion or inhalation) and by organ site, and increases markedly at higher exposures in some instances. To understand what might explain these inconsistencies, we reviewed several hypotheses about the mechanism of cancer induction by arsenic. Arsenic disposition does not provide satisfactory explanations. Induction of cell proliferation by arsenic is a mechanism of carcinogenesis that is biologically plausible and compatible with differential effects for species or differential dose rates for organ sites. The presence of other carcinogens, or risk modifiers, at levels that correlate with arsenic in drinking water supplies, may be a factor in all three inconsistencies: interspecies specificity, organ sensitivity to route of administration, and organ sensitivity to dose rate.

Keywords: Drinking-Water, Well Water, Dimethylarsinic Acid, Blackfoot Disease, Cancer, Mice, Reduction, Toxicity, Exposure, Taiwan

Buchet, J.P. and Lison, D. (1998), Mortality by cancer in groups of the Belgian population with a moderately increased intake of arsenic. *International Archives of Occupational and Environmental Health*, **71** (2), 125-130.

Full Text: [I\Int Arc Occ Env Hea71, 125.pdf](I/Int%20Arc%20Occ%20Env%20Hea71,%20125.pdf)

Abstract: OBJECT: The dose-response relationship for lung carcinoma and other cancers at low doses of As is highly uncertain because it is based on modeling data collected in populations with a high daily intake of the element. The finding of a slightly increased exposure to arsenic in certain groups of the Belgian general population prompted us to examine whether this had repercussions on the causes of mortality.

METHOD: Statistics of mortality by causes with a possible link to exposure to the element (standardized mortality ratio) were analyzed in groups of the Belgian population previously shown to have been exposed to As from natural (drinking water) and/or industrial (nonferrous metal smelter emissions) sources.

RESULTS: A moderately increased absorption of As, leading to a 3-to 4-fold higher urinary excretion (35 micrograms/day as compared with 6-10 micrograms As/day in nonexposed subjects) did not enhance the mortality by diseases of the nervous system, liver and heart, and cancers. An increase in mortality by lung cancer, however, was observed in men but not women living around zinc smelters and might be related to past occupational exposure and/or smoking habits.

CONCLUSION: A low to moderate level of environmental exposure to inorganic arsenic (0.3 microgram As/m3 of air; 20-50 micrograms As/l of drinking water) does not seem to affect the causes of mortality, suggesting in particular nonlinearity of the dose-response relationship for arsenic and cancer.

Anderson, L. (1999), History of CAIA and responsible care in South Africa and current initiatives. *International Archives of Occupational and Environmental Health*, **72**, M5-M7, Suppl.

Full Text: [I\Int Arc Occ Env Hea72, M5.pdf](I/Int%20Arc%20Occ%20Env%20Hea72,%20M5.pdf)

Schuckmann, F. (1999), Occupational and environmental medicine: A component of responsible care in the chemical industry. *International Archives of Occupational and Environmental Health*, **72**, M8-M10, Suppl.

Full Text: [I\Int Arc Occ Env Hea72, M8.pdf](I/Int%20Arc%20Occ%20Env%20Hea72,%20M8.pdf)

Abstract: Safety, environmental protection and health are the three key elements of the responsible fare program of the chemical industry in Europe. A paper concerning these points has just been published by CEFIC. Health protection focuses on three target groups: workers, neighborhood residents and customers. With regard to health protection of the, workers occupational medical prevention plays the central role. In addition, acute treatment, documentation and evaluation of the data, risk management and special preventive programs are of significance.

The protection of the neighborhood residents includes a well-functioning management of chemical plant incidents and effective, open risk communication. Consumer protection in general means the professional information including the provision of special expertise or scientific documentation concerning particular products. The advantages of responsible care, especially health protection, benefits the workers as well as the employer, the residents in the neighborhood and the customers. Logically these advantages should be expressed in performance measures. This includes process, outcome and impact evaluation.

Occupational and environmental medicine is increasingly facing the question of cost/benefit analysis. The answer is certainly difficult, because it is dependent on national and cultural factors as well as specific legal regulation. Therefore exact documentation in the held of health protection is of great importance.

Keywords: Environmental Health, Employees’ Health Service, Occupational Health Service

# Title: International Association of Marine Science Libraries and Information

Full Journal Title: International Association of Marine Science Libraries and Information

ISO Abbreviated Title:

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ISSN:

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Issues/Year:

Journal Country/Territory:

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Subject Categories:

: Impact Factor

? McPhail, A.S. and Crampton, M. (1999), FISHLIT, a review of NISC South Africa’s aquatic sciences database. *International Association of Marine Science Libraries and Information*, 155-166.

Abstract: FISHLIT, a bibliographic database on fish fisheries and aquaculture produced by NISC South Africa, has been in existence since 1985 and is currently available on CD-ROM, being included on the NISC publications Aquatic Biology, Aquaculture and Fisheries Resources, and Fish and Fisheries Worldwide, and the lnternet. An historical account of the design and development of FISHLIT, including a description of the data structure, database size and growth, is provided. A breakdown of source material, for example scientific articles, reports, popular articles and books, is given, as well as the grey literature indexed, a notable strength of this database. A bibliometric analysis is made of the two anthology CD-ROM titles on which FISHLIT is published in terms of subject coverage and numbers of records. Topic coverage is graphically presented and the application of FISHLIT to areas of aquatic science, such as ichthyology, aquaculture and fisheries management, is discussed. Comparisons are drawn between FISHLIT and other currently available aquatic science databases.

Keywords: Africa, Analysis, Application, Aquaculture, Aquatic Science, Bibliographic Database, Bibliometric, Bibliometric Analysis, CD-ROM, Coverage, Data, Data Collection, Data Structure, Database, Database Production, Databases, Design, Development, Fish, Fisheries, Fisheries Management, Growth, Information Technology, Literature, Management, Publications, Records, Resources, Review, Science, Sciences, Size, Source, South Africa, Strength, Structure

# Title: 2006 1st International Conference on Digital Information Management

Full Journal Title: 2006 1st International Conference on Digital Information Management

ISO Abbreviated Title:

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ISSN:

Issues/Year:

Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

? Kretschmer, H. and Kretschmer, T. (2006), Application of a new centrality measure for social network analysis to Bibliometric and webometric data. *2006 1st International Conference on Digital Information Management*, 199-204.

Abstract: There is a, rapid increase of network analysis in several scientific disciplines beginning some decades ago. In the literature there are few studies on networks with weighted ties since they not only need more complex formulas but need a process of quantification when quantitative empirical data are not directly available. However quantitative empirical data are directly available under the condition of using bibliometric or webometric data. In conclusion a new Complex Measure of the Degree Centrality is introduced including weighted ties possible for use of the analysis of co-authorship or citation networks. Both co-authorship relations and citations are well quantified data (weighted ties). This new measure is applied to a bibliographic co-authorship network and its reflection on the Web as an example. The new measures of degree centrality show the whole network on the Web has a more centralized structure than the bibliographic network.

# Title: 2009 17th International Conference on Geoinformatics, Vols 1 and 2

Full Journal Title: 2009 17th International Conference on Geoinformatics, Vols 1 and 2

ISO Abbreviated Title:

JCR Abbreviated Title:

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Issues/Year:

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Publisher Address:

Subject Categories:

? Chen, Z.Q. and Chen, J.F. (2009), Geostatistical analysis on human impact indexes for land use/cover in Fujian Province and Fuzhou City. *2009 17th International Conference on Geoinformatics, Vols 1 and 2*, (Edited by Di, L. and Chen, A.), 1084-1087.

Abstract: Land use/cover change (LUCC) is an important component of global change research. Based on Geostatistics and taking the TM images in 1985 and ASTER images in 2002 in Fujian Province, the TM images in 1988 and the ASTER images in 2004 in Fuzhou City as the data sources, the present paper built the human impact indexes, compiled the human impact indexes maps and the human impact indexes change maps, calculated the parameters of semivariograms. The results showed that the human impact indexes and change had directionalities, the trends of main land use/cover types, all types and change types were approximately NE-SW in Fujian Province and NW-SE in Fuzhou City using Standard Deviational Ellipse, the trends were consistent with the topographies respectively. The structural variance/sill ratio of human impact indexes was 88.96% in Fujian Province, 81.05% in Fuzhou City, the nugget/sill ratio was 11.04% and 18.95% respectively suggesting the intrinsic factors which were mainly nature factors such as topography were the dominant composition in the land use/cover pattern. The structural variance/sill ratio of human impact indexes change was 42.19% in Fujian Province, 42.17% in Fuzhou City, the nugget/sill ratio was 57.81% and 57.83% respectively suggesting the intrinsic and extrinsic factors influenced the change of land use/cover simultaneously. The structural variance/sill ratio of human impact indexes and change in Fuzhou City were smaller than the ones in Fujian Province respectively which showed scale had important impact on the human impact indexes and change.

Keywords: LUCC, Geostatistics, Human Impact Indexes, Fujian Province, Fuzhou City

# Title: International Biodeterioration

Full Journal Title: International Biodeterioration

ISO Abbreviated Title:

JCR Abbreviated Title:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Ortegacalvo, J.J., Hernandezmarine, M. and Saizjimenez, C. (1991), Biodeterioration of building-materials by cyanobacteria and algae. *International Biodeterioration*, **28** (1-4), 165-185.

Abstract: A study of the presence of cyanobacteria and algae in different building materials from Spain (Salamanca, Seville and Toledo Cathedrals) and Sweden (Lund Cathedral) and their possible relation to the stone decay was accomplished. Colonization of stone with the cyanobacterium Microcoleus vaginatus and the chlorophyte Klebsormidium flaccidium was also induced in the laboratory. In both field and laboratory samples, the microbial film, spontaneously detached, showed on its reverse side the presence of grains removed from the stone surface, thus causing mechanical deterioration on the colonized materials.

? Griffin, P.S., Indictor, N. and Koestler, R.J. (1991), The biodeterioration of stone-A review of deterioration mechanisms, conservation case-histories, and treatment. *International Biodeterioration*, **28** (1-4), 187-207.

Abstract: Several aspects of the biodeterioration of stone are reviewed, including general deterioration mechanism, deterioration attributed to specific biological organisms, conservation case histories, and treatment options. The literature is cited with emphasis on historic monuments.

# Title: International Biodeterioration & Biodegradation

Full Journal Title: [International Biodeterioration & Biodegradation](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6030&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=164d26b70825bfe157d816f170552bfb)

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Biotechnology & Applied Microbiology: Impact Factor

Environmental Sciences: Impact Factor 0.568, 85/126 (1999); Impact Factor 0.698, 68/127 (2000)

Wainwright, M., Ali, T.A. and Barakah, F. (1993), A review of the role of oligotrophic microorganisms in biodeterioration. *International Biodeterioration & Biodegradation*, **31** (1), 1-13.

Full Text: [I\Int Bio Bio31, 1.pdf](I/Int%20Bio%20Bio31,%201.pdf)

Abstract: Oligotrophic micro-organisms including many bacteria and fungi are able to grow in low concentrations or the apparent absence of nutrients by scavenging from the atmosphere or substratum on which they grow. As a result, oligotrophs often contaminate seemingly nutrient-free liquids and surfaces such as metals and glass. Oligotrophy allows for initial substrate colonization without immediate substrate utilization although this may follow once the organism has become established. Oligotrophic micro-organisms cause a number of problems associated with biocontamination and biodeterioration, e.g contaminate bottled drinking water and colonize solid surfaces such as glass, metals and electronic components. The aim of this review is to highlight the pan played by oligotrophs in biocontamination and biodeterioration.

Keywords: Fungal Contamination, Inorganic Medium, Growth, Water, *Pseudomonas*, Sandstone, Bacterial

Eccles, H. (1995), Removal of heavy metals from effluent streams: Why select a biological process? *International Biodeterioration & Biodegradation*, **35** (1-3), 5-16.

Full Text: [I\Int Bio Bio35, 5.pdf](I/Int%20Bio%20Bio35,%205.pdf)

Abstract: The paper addresses the use of biosorptive, bioaccumulative and other separative technologies for the removal/recovery of metals from liquid effluents. The reasons for selecting more conventional chemical treatments are reviewed whilst the advantages of a biosorptive process compared with a bioaccumulative one are described. Comparative costs for biosorptive processes with ion exchange and chemical precipitation using either lime or caustic soda are predicted. It is proposed that these costs, although indicative, are sufficiently accurate to justify further evaluation of bioprocesses. More definitive costs will be achieved by the use of multidisciplinary groups, and will ensure the true potential for metal biosorption/bioaccumulation is achieved. (C) 1995 Elsevier Science Ltd. All rights reserved.

White, C., Wilkinson, S.C. and Gadd, G.M. (1995), The role of microorganisms in biosorption of toxic metals and radionuclides. *International Biodeterioration & Biodegradation*, **35** (1-3), 17-40.

Full Text: [I\Int Bio Bio35, 17.pdf](I/Int%20Bio%20Bio35,%2017.pdf)

Abstract: A multiplicity of physico-chemical and biological mechanisms determine the removal of toxic metals, metalloids and radionuclides from contaminated wastes. Physico-chemical mechanisms of removal, which may be encompassed by the general term “biosorption”, include adsorption, ion exchange and entrapment which are features of living and dead biomass as well as derived products. In living cells, biosorption can be directly and indirectly influenced by metabolism. Metabolism-dependent mechanisms of metal removal which occur in living microorganisms include metal precipitation as sulphides, complexation by siderophores and other metabolites, sequestration by metal-binding proteins and peptides, transport and intracellular compartmentation. In addition, transformations of metal species can occur resulting in oxidation, reduction or methylation. For metalloids such as selenium, two main transformation mechanisms are the reduction of oxyanions to elemental forms, and methylation to methylated derivatives which are volatilized. Such mechanisms are important components of natural biogeochemical cycles for metals and metalloids as well as being of potential application for bioremediation.

Tsezos, M., Remoudaki, E. and Angelatou, V. (1995), A systematic study on equilibrium and kinetics of biosorptive accumulation: The case of Ag and Ni. *International Biodeterioration & Biodegradation*, **35** (1-3), 129-153.

Full Text: [I\Int Bio Bio35, 129.pdf](I/Int%20Bio%20Bio35,%20129.pdf)

Abstract: Biosorptive metal uptake capacities have been quantitatively evaluated through a systematic experimental approach for silver and nickel and six selected strains of microbial biomass. Strains MB 127 and BP 7/26 have been identified to be the most efficient for silver sequestering. Biosorption of nickel by the strains tested is generally low. Overall kinetic experiments have been performed for the determination of the necessary contact time for the attainment of equilibrium. Systematic desorption experiments have shown that biosorption of silver and nickel by the strains tested is irreversible under the conditions examined. Simultaneous considerations of hydrolysis behaviour, chemical coordination, and stereochemical and redox characteristics have been proven to be very helpful in understanding the observed differences between silver and nickel biosorptive performances.

Keywords: *Bacillus-Subtilis*, *Rhizopus-arrhizus*, Cell-Walls, Metals, Binding, Adsorption, Biomass, Ions

Delgado, A., Barreiros, M.A. and Novais, J.M. (1996), Heavy metal biosorption by the mycelium of fusarium flocciferum. *International Biodeterioration & Biodegradation*, **37** (3-4), 239.

Full Text: [I\Int Bio Bio37, 239.pdf](I/Int%20Bio%20Bio37,%20239.pdf)

Abstract: The biosorption capacity of dead biomass of *Fusarium flocciferum* was studied for Cu, Cd and Ni. It was verified that Langmuir isotherm describes well the biosorption of these metals, although copper had shown a more irregular behaviour. The metal/biomass affinity followed the order Cd > Ni > Cu, based on estimated *Q*max. These values, expressed as mg metal/100 mg biomass, are 20.4 for Cd, 5.2 for Ni and 2.3 for Cu.

The pH was found to be the most important factor: the removal capacity was shown to increase with pH, for all ions, but the upper limit of working pH was limited by hydroxide precipitation. It was verified that the equilibrium was achieved within a few seconds, revealing the absence of diffusional barriers and the importance of surface components of fungal walls in the phenomenon. Biomass concentration also has a significant effect: biosorption markedly decreases as biomass concentration increases. Several treatments were tried in the preparation of the biomass (acids, bases, detergents and heat). The higher values were obtained with autoclaved and dried powdered mycelia. No significant differences were found for metal affinity in mycelia with incubation periods from 24 h to 4 days, but, older cultures (5-14 days) showed a decrease in the adsorption capacity.

*Fusarium flocciferum* dried biomass seems to be adequate for the removal of valuable metals such as cadmium and nickel from industrial effluents. However, as the metal recovery and recycling is an imperious need for its industrial application, elution and biosorbent half-life period studies should be undertaken.

Teixeira, J.A. and Manuela Araújo, M. (1996), Chromium removal from industrial effluents using biopolymer gel beads. *International Biodeterioration & Biodegradation*, **37** (3-4), 239.

Full Text: [I\Int Bio Bio37, 239.pdf](I/Int%20Bio%20Bio37,%20239.pdf)

Abstract: Biosorption of heavy metals from aqueous effluents is a remediation technology suitable for the treatment of high flow effluents with low metal concentrations. Metal removal from waste waters is made, traditionally using processes as precipitation, adsorption, electrochemical systems, ion exchange and solvent extraction. Recently, the utilization of biopolymers such as alginates and carrageenans for metal removal has been a matter of great interest.

Liquid effluents with high contents of trivalent chromium are obtained in the tannery industries, due to the utilization of chromium during processing. As a consequence, it is important to develop mechanisms for an efficient removal of chromium from tannery industries effluents. In this work, results describing the removal of trivalent chromium from aqueous solutions using alginate gel beads are presented. Sorption isotherms as well as the effect of temperature and pH on the mechanisms of chromium removal are presented. The kinetics of sorption are also evaluated and a corresponding model is developed. Finally, a methodology for trivalent chromium removal with alginate is proposed. This method includes two steps: in the first one, chromium is removed by using it as an agent for alginate bead formation (for chromium concentrations above 300 mg-1); afterwards, the obtained solution is placed in contact with previously formed calcium alginate beads for removal of the remaining chromium.

Diels, L., Van Roy, S., Hooyberghs, L., Tsezos, M., Pümpel, T., Glombitza, F., Hummel, A. and Eckard, L. (1996), Heavy metal biosorption and bioprecipitation by *Alcaligenes eutrophus* ER121. *International Biodeterioration & Biodegradation*, **37** (3-4), 241.

Full Text: [I\Int Bio Bio37, 241.pdf](I/Int%20Bio%20Bio37,%20241.pdf)

Abstract: The heavy metal biosorption capacity of *Alcaligenes eutrophus* ER121 is influenced by several factors. The strain bears three plasmids encoding a proton/cation chemiosmotic efflux system allowing the formation of high metal concentrations around the cells. Zinc ions induce the formation of one or two extra outer membrane proteins and influence the cellular charge as calculated by electrophoretic mobility measurements.

On the other hand extracellular polysaccharides seem to be involved in the adsorption of silver, which is not influenced by the former mentioned extra outer membrane proteins. *A. eutrophus* ER121 shows a metal biosorption specificity.

Merroun, M.L., Ben Omar, N., González-Muñoz, M.T. and Arias, J.M. (1996), Removal of lead from aqueous solutions by *Myxococcus xanthus*. *International Biodeterioration & Biodegradation*, **37** (3-4), 241.

Full Text: [I\Int Bio Bio37, 241.pdf](I/Int%20Bio%20Bio37,%20241.pdf)

Abstract: The use of biological materials for heavy-metal removal and recovery technologies has gained widespread credibility during recent years, because of the good performance and low cost of this complex material. The natural affinity of biological compounds for metallic elements could contribute to economically purifying waste water loaded with heavy metals.

The present study indicates that *Myxococcus xanthus* biomass has the capacity for efficient biosorption of Pb2+, being able to accumulate up to 1.039 mM of Pb2+ per gram of biomass. For Pb2+ concentration of 0.3 to 0.5 mM, between 83.17 and 93.21% of the Pb2+ was adsorbed from the solution. The adsorption rate was relatively rapid, reaching equilibrium after 5 to 10 min. In addition, the pH influenced biosorption, pH 5.5 promoting maximum uptake.

Allison, K., Edyvean, R.G.J. and Wales, D.S. (1996), Biosorption of metal ions by microfungal biomass. *International Biodeterioration & Biodegradation*, **37** (3-4), 242.

Full Text: [I\Int Bio Bio37, 242.pdf](I/Int%20Bio%20Bio37,%20242.pdf)

Microfungal biomass has the ability to chelate toxic and valuable metal ions (e.g. cadmium and silver) from dilute aqueous solutions, and thus has the potential for removal of metal ions from industrial waste water streams. However the specific mechanisms by which fungal biomass removes metal ions from aqueous solutions are not well understood.

The aim of this work has been to study the mechanisms active in biosorption of cadmium and silver ions by two fungi (*Rhizomucor miehei* and *Aspergillus niger*). The cell walls of these microfungi were sequentially extracted by a range of chemicals and changes in biosorptive ability monitored by the construction of adsorption isotherms for each cell wall fraction. Since there is some discussion over the applicability of such models to this kind of data, a range of models were used. The chemical composition of the cell wall fractions was also monitored, in an attempt to correlate changes in biosorptive efficiency with specific polysaccharide components.

Tsezos, M., Remoudaki, E. and Angelatou, V. (1996), A Study of the Effects of Competing Ions on the Biosorption of Metals. *International Biodeterioration & Biodegradation*, **38** (1), 19-29.

Full Text: [I\Int Bio Bio38, 19.pdf](I/Int%20Bio%20Bio38,%2019.pdf)

Abstract: The effects of ionic competition in the biosorption of metals have been studied for the metals palladium, gold, uranium, yttrium, silver and nickel on the basis of their Pearson classification using biomass from two strains of bacteria. The selection of appropriate pairs of metals permitted the examination of combinations of metals representative of each class (A, B, borderline). The biosorption results obtained from solutions containing each pair of metals have been compared to the corresponding single metal biosorption results. Our results have shown that elements belonging to either the hard or soft classes exhibited competition effects among members of their class. Borderline elements were affected by the presence of either hard or soft elements. This work suggests that Pearson’s reasoning is a useful tool. However, a more detailed examination of metal solutions (hydrolysis behaviour, stereochemical) and biomass characteristics is necessary for the proper understanding of the ionic competition effects. (C) 1996 Elsevier Science Ltd. All rights reserved.

Cabrera, F., López, R., Martinez-Bordiú, A., de Lome, E.D. and Murillo, J.M. (1996), Land treatment of olive oil mill wastewater. *International Biodeterioration & Biodegradation*, **38** (3-4), 215-225.

Full Text: [I\Int Bio Bio38, 215.pdf](I/Int%20Bio%20Bio38,%20215.pdf)

Abstract: Experiments carried out in lysimeters filled with two calcareous clayey soils (ca 40% CaCO3; ca 40% clay), showed that a 2m layer of soil almost completely removed the organic and inorganic components of olive oil mill wastewater (OMW) when it was applied in doses of 5000-10000 m3ha-1 year-1. This efficiency was maintained for at least 2 years. In field experiments, the application of OMW to one of these soils during three successive years at an annual rate of up to 6000m3ha-1 caused changes in some chemical properties of the soil, especially in the upper layer (0-50cm). Concentrations of soil organic matter, Kjeldahl N, soluble NO3 and available P increased enhancing soil fertility. On the other hand, soil electrical conductivity and sodium adsorption ratio also increased but below the levels representing salinization or sodification hazard for the soil. Furthermore, leaching of Na+ and NO3 below the Im layer were detected.

Keywords: Water, Spain

González-Muñoz, M.T., Merroun, M.L., Ben Omar, N. and Arias, J.M. (1997), Biosorption of uranium by *Myxococcus xanthus*. *International Biodeterioration & Biodegradation*, **40** (2-4), 107-114.

Full Text: [I\Int Bio Bio40, 107.pdf](I/Int%20Bio%20Bio40,%20107.pdf)

Abstract: This paper deals with uranium biosorption by *Myxococcus xanthus* biomass in which dry biomass, accumulating up to 2.4 mM of uranium g-1, is demonstrated to be a more efficient biosorbent than wet biomass. For uranium concentrations of 0.1-0.3 mM, between 95.79% and 95.99% of the uranium was taken up from the solution. Dry biomass biosorption was found to be relatively rapid, reaching equilibrium after 5-10 min. In addition, the pH influenced biosorption, pH 4.5 promoting maximum uptake. It was also established that the biosorbed uranium is located on the cellular wall and within the extracellular mucopolysaccharide of this microorganism. Furthermore, using sodium carbonate as a desorbent agent, 80.82% of the biosorbed uranium could be recovered. The results obtained indicate the possible utilization of *M. xanthus* biomass to solve some problems of the water contaminated by uranium.

Keywords: Uranium, Sorption, Microorganisms, Biomass, pH Effects, Polysaccharides, Sodium Compounds, *Myxococcus Xanthus*, Biosorption, Sodium Carbonate

Moreira, M.T., Palma, C., Feijoo, G. and Lema, J.M. (1997), Decolorization of ion-exchange effluents derived from sugar-mill operations by *Bjerkandera* sp. BOS55. *International Biodeterioration & Biodegradation*, **40** (2-4), 125-129.

Full Text: [I\Int Bio Bio40, 125.pdf](I/Int%20Bio%20Bio40,%20125.pdf)

Abstract: The decolorization of ion-exchange effluents derived from sugar-mill operations by *Bjerkandera* sp. BOS55 has been studied. Bjerkandera sp. BOS55 was selected as a possible effective microorganism because of its high ligninolytic activity enabling the degradation of toxic pollutants. Fungal biomass in pellet form allowed a good decolorization up to 78% after 8 days of incubation. Pellets remain uncolored after the treatment, and no adsorption of chromophoric groups on mycelia was observed. This suggests that a biological transformation affecting the chemical composition of such compounds took place. Molecular weight distribution indicated a polymerization of chromophoric groups after fungal treatment. (C) 1997 Elsevier Science Ltd. All rights reserved.

Keywords: Phanerochaete-Chrysosporium, Peroxidase

Sar, P., Kazy, S.K., Asthana, R.K. and Singh, S.P. (1999), Metal adsorption and desorption by lyophilized *Pseudomonas aeruginosa*. *International Biodeterioration & Biodegradation*, **44** (2-3), 101-110.

Full Text: [I\Int Bio Bio44, 101.pdf](I/Int%20Bio%20Bio44,%20101.pdf)

Abstract: Biosorption of nickel (Ni2+) and copper (Cu2+) by lyophilized *Pseudomonas aeruginosa* cells was investigated based on Freundlich isotherm. Bacterial biomass showed significant sorption of both Ni (265 mg g−1) or Cu (137.6 mg g−1), and was also superior over the cation exchanger, IRA 400 (98 mg Ni g−1 or 26.6 mg Cu g−1). Metal binding by the test organism was a fast saturating, pH-dependent process. The optimum pH for Cu adsorption was 7.0 and for Ni 8.0. X-ray diffraction studies revealed that both cations were deposited on the cell predominantly as phosphide crystals. The participation of carboxyl, carbonyl, and phosphoryl groups along with H-bonding in metal sorption was evident in IR spectra. Biomass pretreatment by agents like NaOH, NH4OH or toluene enhanced the metal loading capacity, whereas, oven heating (80°C), autoclaving (120°C, 15 lb (in.2)−1), acid, detergent and acetone treatments were inhibitory. In bimetallic combination, Na, K or Ca increased sorption of Ni as well as Cu in contrast to Cd or Pb. Mineral acids (HCl, H2SO4 and HNO3) and NTA could recover more than 75% (on average) Ni or Cu adsorbed on the biomass. Calcium carbonate (10 mM) was efficient in Ni desorption (71%) compared to Cu (57%). Noticeably sodium carbonate remained specific for Cu remobilization (88%) than Ni (21%). The data are in favour of deployment of the test biomass as an efficient metal removal/recovery system. (C) 1999 Elsevier Science Ltd. All rights reserved.

Chen, B.Y., Utgikar, V.P., Harmon, S.M., Tabak, H.H., Bishop, D.F. and Govind, R. (2000), Studies on biosorption of zinc(II) and copper(II) on *Desulfovibrio desulfuricans*. *International Biodeterioration & Biodegradation*, **46** (1), 11-18.

Full Text: [I\Int Bio Bio46, 11.pdf](I/Int%20Bio%20Bio46,%2011.pdf)

Abstract: The objectives of these studies are to determine the equilibrium concentration and kinetics of metal sorption on sulfate-reducing bacteria (SRB) isolates. Adsorption establishes the net reversible cellular metal uptake and is related to SRB metal toxicity and the effects of environmental factors. Results from biosorption equilibria and kinetics of copper(II) and zinc(II) ions on Desulfovibrio desulfuricans and the effects of adsorption of these metals on SRB are discussed. Adsorption studies were conducted using stationary phase cells with equilibrium uptake at 24 h and pHs in the range of 4-7. Equilibrium adsorption in milligram of metal/g dry cell for copper(II) of 2.03 (pH 4.0) and 16.7 (pH 5.0) and zinc(II) of 6.40 (pH 5.5), 13.8 (pH 6.0), 39.2 (pH 6.2) and 49.6 (pH 6.6) was measured experimentally. Negligible biosorption of copper and zinc was found below pH 4.0, with metal sorption increasing within a limited range of pH mainly due to the neutral and/or deprotonated state of binding ligands on cell walls. Competition of metal ions during biosorption was investigated by conducting sorption experiments with Zn(II) using potassium phosphate buffer (KP) and deionized/distilled water. Zn(II) sorption capacity was lower in KP buffer than deionized water due to competition from potassium ions. Scanning Electron Microscope micrographs indicated that metal biosorption on SRB may be related to the production of extracellular polymeric substance (e.g., polysaccharide). Published by Elsevier Science Ltd.

Keywords: *Pseudomonas-Aeruginosa* Pu21, Reduction, Biomass, Cadmium, Lead

Utgikar, V., Chen, B.Y., Tabak, H.H., Bishop, D.F. and Govind, R. (2000), Treatment of acid mine drainage: I. Equilibrium biosorption of zinc and copper on non-viable activated sludge. *International Biodeterioration & Biodegradation*, **46** (1), 19-28.

Full Text: [I\Int Bio Bio46, 19.pdf](I/Int%20Bio%20Bio46,%2019.pdf)

Abstract: Biosorption is potentially attractive technology for treatment of acid mine drainage for separation/recovery of metal ions and mitigation of their toxicity to sulfate reducing bacteria. This study describes the equilibrium biosorption of Zn(II) and Cu(II) by nonviable activated sludge in a packed column adsorber. The Zn(II) uptake capacity of unconditioned sludge (not subjected to processing other than drying) was found to decrease in repeated adsorption-desorption cycles, declining by a factor greater than 20 from cycle 1 to cycle 6, Equilibrium uptake of metals by dried sludge conditioned by exposure to deionized water at a pH corresponding to that of the feed solution showed a strong pH dependence and was modeled using the Langmuir adsorption isotherm. Equilibrium metal uptakes from solutions containing single metal ion were 2.5 mg g(dry biomass)-1 and 3.4 mg g(dry biomass)-1 for Zn(II), and 1.9 mg g(dry biomass)-1 and 5.9 mg g(dry biomass)-1 for Cu(II) at pH 3.0 and 3.8, respectively. Equilibrium uptakes from binary mixtures were 30% lower than single component solution uptakes for both metals, indicating some competition between the two metals. No hysteresis was detected between adsorption and desorption equilibria. Anion concentration and pH measurements indicated that simultaneous sorption of metal cation and sulfate anion was probably occurring at pH 3.0, while proton exchange predominated at pH 3.8. Results of the study point to the usefulness of non-viable activated sludge as a biosorbent for recovery/separation of metal ions from acid mine drainages. Published by Elsevier Science Ltd.

Keywords: Heavy-Metal Biosorption, *Pseudomonas-Aeruginosa* PU21, Sulfate Reduction, Toxic Metals, Biomass, Removal, Cadmium, Cells, Adsorption, Bacteria

Omar, H.H. (2002), Bioremoval of zinc ions by *Scenedesmus obliquus* and *Scenedesmus quadricauda* and its effect on growth and metabolism. *International Biodeterioration & Biodegradation*, **50** (2), 95-100.

Full Text: [I\Int Bio Bio50, 95.pdf](I/Int%20Bio%20Bio50,%2095.pdf)

Abstract: Zinc biosorption by two green algae, *Scenedesmus obliquus* and *Scenedesmus quadricauda*, was investigated. Data show that, at concentrates between 0.5 and 8 ppm, zinc adsorption by algae increased with increasing metal ion concentration. The maximum specific adsorptive capacity of zinc ions obtained from the Langmuir adsorption isotherms was higher for *S. obliquus* (6.67) and lower for *S. quadricauda* (5.03). These *S. obliquus* appears to be more efficient than *S. quadricauda* for removing zinc ions. However, the affinity constant of zinc on the biomass of both algae were 0.19 and 0.27 indicating that *S. obliquus* is more tolerant to zinc phytotoxicity than *S. quadricauda*. Algal growth, pigment fractions, total amino acids, and the activities of some phosphatases enzyme (acid phosphatase, alkaline phosphatase, and ATPase) in the algal cells were measured in the exponential growth phase after exposure to various concentrations of zinc. Lower concentrations of zinc increased dry weight, chlorophyll a, b, carotenoids, and total amino acid contents in both algae. On the other hand, higher concentrations of zinc were inhibitory for growth and the other metabolic activities.

Keywords: Zinc, Green Algae, Growth, Amino Acids, Phosphatase, Metal Biosorption

Dostalek, P., Patzak, M. and Matejka, P. (2002), Influence of specific growth limitation on biosorption of heavy metals by *Saccharomyces cerevisiae*. *International Biodeterioration & Biodegradation*, **54** (2-3), 203-207.

Full Text: [I\Int Bio Bio54, 203.pdf](I/Int%20Bio%20Bio54,%20203.pdf)

Abstract: Biosorption of Cd2+, Cu2+ and Ag+ ions by C-, N-, P-, S-, Mg- and K-limited cells of *Saccharomyces cerevisiae* was examined. Raman spectroscopy and analysis of elemental composition were used to identify differences between individual yeast cultures. K-, Mg- and C-limited cells accumulated the greatest amounts of Cd2+ ions. The greatest amount of Cu2+ ions was bound by biomass grown in K-limited medium. P-limited cells bound the greatest amount of Ag+ ions, but in contrast they had the lowest sorption capacity for Cd2+ ions. The smallest amounts of Cu2+ and Ag+ ions was bound by biomass grown in S-limited medium.

Keywords: FT Raman Spectroscopy, Elemental Analysis, Biosorption, Continuous Cultivation, Yeast, Cadmium, Silver, Copper

Marseaut, S., Debourg, A., Dostálek, P., Votruba, J., Kuncová, G. and Tobin, J.M. (2004), A silica matrix biosorbent of cadmium. *International Biodeterioration & Biodegradation*, **54** (2-3), 209-214.

Full Text: [I\Int Bio Bio54, 209.pdf](I/Int%20Bio%20Bio54,%20209.pdf)

Abstract: In the process of preparation of a non-toxic metal biosorbent by entrapment of yeast cells in silica matrix by sol–gel technique, the homogeneity of yeast cell dispersion and prevention of precipitation during tetraethoxysilane pre-polymerization were found to be the parameters substantially influencing the sorption capacity for Cd2+. Ultrasonic treatment of cell walls increased the sorption capacity by 25% as a result of the suppression of their agglomeration. Precipitation during tetraethoxysilane (TEOS) pre-polymerization was tracked by measurement of light absorbance at λ=600 nm. The biosorbent formed from pre-polymer with a light absorbance of 0.3 had 50% less sorption capacity than that with an absorbance of 0.05. Modification of the TEOS:methanol:water ratio in the range from 1:10:8 to 1:10:40 and specific surface between 210 and 390 m2 g−1 influenced the sorption capacity of biosorbents only within the limits of experimental error. The sorption capacity per unit weight of biosorbent was proportional to the yeast cell wall content. The content could be increased up to a cell walls:SiO2 ratio≅1.5 (w/w). Biosorbent with higher cell wall content was fragile and friable. Biosorbents were shaped by crushing and regular particles were prepared by moulding into millimetre-scale cylindrical moulds. In this shaping process, the loss of biosorbent mixture was small and the process could easily be scaled up. Using a mathematical model of a packed-bed adsorber, taking into account axial dispersion and mass transfer resistance the break-through curve for crushed and moulded biosorbent was predicted with high fidelity.

Keywords: Sol–Gel, Biosorption, Cadmium, Column, Yeast, Cell Wall, Polysaccharides, Encapsulation

? Pandey, A., Singh, P. and Iyengar, L. (2007), Bacterial decolorization and degradation of azo dyes. *International Biodeterioration & Biodegradation*, **59** (2), 73-84.

Full Text: [2007\Int Bio Bio59, 73.pdf](2007/Int%20Bio%20Bio59,%2073.pdf)

Abstract: Azo compounds constitute the largest and the most diverse group of synthetic dyes and are widely used in a number of industries such as textile, food, cosmetics and paper printing. They are generally recalcitrant to biodegradation due to their xenobiotic nature. However microorganisms, being highly versatile, have developed enzyme systems for the decolorization and mineralization of azo dyes under certain environmental conditions. Several genera of Basidomycetes have been shown to mineralize azo dyes. Reductive cleavage of azo bond, leading to the formation of aromatic amines, is the initial reaction during the bacterial metabolism of azo dyes. Anaerobic/anoxic azo dye decolorization by several mixed and pure bacterial cultures have been reported. Under these conditions, this reaction is nonspecific with respect to organisms as well as dyes. Various mechanisms, which include enzymatic as well as low molecular weight redox mediators, have been proposed for this non-specific reductive cleavage. Only few aerobic bacterial strains that can utilize azo dyes as growth substrates have been isolated. These organisms generally have a narrow substrate range. Degradation of aromatic amines depends on their chemical structure and the conditions. It is now known that simple aromatic amines can be mineralized under methanogenic conditions. Sulfonated aromatic amines, on the other hand, are resistant and require specialized aerobic microbial consortia for their mineralization. This review is focused on the bacterial decolorization of azo dyes and mineralization of aromatic amines, as well as the application of these processes for the treatment of azo-dye-containing wastewaters. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Azo Dyes, Decolorization, Biodegradation, Aromatic Amines, Anaerobic/Aerobic Treatment, Textile Waste-Water, Anaerobic Granular Sludge, Reactive Dyebath Effluent, Fast Blue S5R, Aromatic-Amines, Microbial Decolorization, Pseudomonas-Aeruginosa, Redox Mediator, Orange-II, Naphthalenesulfonic Acids

? Anjaneya, O., Santoshkumar, M., Anand, S.N. and Karegoudar, T.B. (2009), Biosorption of acid violet dye from aqueous solutions using native biomass of a new isolate of *Penicillium* sp. *International Biodeterioration & Biodegradation*, **63** (6), 782-787.

Full Text: [2009\Int Bio Bio63, 782.pdf](2009/Int%20Bio%20Bio63,%20782.pdf)

Abstract: Laboratory investigation of the potential use of *Penicillium* sp. as biosorbent for the removal of acid violet dye from aqueous solution was studied with respect to pH, temperature, biosorbent, initial dye concentrations. *Penicillium* sp. decolourizes acid violet (30 mg l-1) within 12 h agitation of 150 rpm at pH 5.7 and temperature of 35 degrees C. The pellets exhibited a high dye adsorption capacity (5.88 mg g-1) for acid violet dye over a pH range (4-9); the maximum adsorption was obtained at pH 5.7. The increase of temperature favored biosorption for acid violet, but the optimum temperature was 35 C. Adsorption kinetic data were tested using pseudo-first-order, pseudo-second-order and kinetic studies showed that the biosorption process follows pseudo-first-order rate kinetics with an average rate constant of 0.312 min-1. Isotherm experiments were conducted to determine the sorbent-desorption behavior of examined dye from aqueous solutions using Langmuir and Freundlich equations. Langmuir parameter indicated a maximum adsorption capacity of 4.32 mg g-1 for acid violet and R-L value of 0.377. Linear plot of log q(e) vs log C-e shows that applicability of Freundlich adsorption isotherm model. These results suggest that this fungus can be used in biotreatment process as biosorbent for acid dyes. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Acid Dyes, Acid Violet, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Isotherm Model, Adsorption Kinetic, Agitation, Aqueous Solution, Aqueous Solutions, Behavior, Biomass, Biosorbent, Biosorption, Capacity, Data, Decolorization, Dye, Dye Adsorption, Dyes, Experiments, Freundlich, Freundlich Adsorption Isotherm, Fungus, Investigation, Isotherm, Isotherm Model, Kinetic, Kinetic Studies, Kinetics, Langmuir, Methylene-Blue, Model, Penicillium sp., pH, Potential, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Rate Constant, Rate Kinetics, Removal, Rights, Solution, Solutions, Temperature, Value

? Joo, J.H., Hassan, S.H.A. and Oh, S.E. (2010), Comparative study of biosorption of Zn2+ by *Pseudomonas aeruginosa* and *Bacillus cereus*. *International Biodeterioration & Biodegradation*, **64** (8), 734-741.

Full Text: [2010\Int Bio Bio64, 734.pdf](2010/Int%20Bio%20Bio64,%20734.pdf)

Abstract: Pseudomonas aeruginosa ASU 6a (Gram-negative) and Bacillus cereus AUMC B52 (Gram-positive) were used as an inexpensive and efficient biosorbent for Zn (II) removal from aqueous solutions. The effects of various physicochemical factors on Zn(II) biosorption such as pH - 1.0-7.0, initial metal concentration 0.0-200 mg/L, and contact time - 0-60.0 min were studied. The optimum pH for Zn(II) removal was 6.0, while the optimal contact time was 30 min at 30º C by the two bacterial species. The nature of the biosorbents and metal ion interactions were evaluated by Fourier transform infrared (FTIR) spectroscopy. FTIR analysis of bacterial biomass revealed the presence of amino, carboxyl, hydroxyl, and carbonyl groups, which are likely responsible for the biosorption of Zn(II). The Gram-negative bacterium showed more zinc biosorption compared to the Gram-positive bacterium. The maximum adsorption capacities by P. aeruginosa ASU 6a and B. cereus AUMC B52 calculated from Langmuir adsorption isotherms were 83.3 and 66.6 mg/g, respectively. The adsorption isotherms fitted well with both the Langmuir and Freundlich isotherm models with high values of correlation coefficient (r(2) > 0.97). The biosorption kinetic data were properly fitted well with the pseudo-second-order kinetic model. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Capacities, Adsorption Isotherms, Analysis, Aqueous Solutions, Aqueous-Solutions, Assiut City, B.Cereus, Bacillus, Bacillus Cereus, Bacterium, Biomass, Biosorbent, Biosorbents, Biosorption, Biosorption Kinetic, Cadmium, Concentration, Copper, Correlation, Correlation Coefficient, Data, Escherichia-Coli, Freundlich, Freundlich Isotherm, FTIR, FTIR Analysis, Heavy Metals, Heavy-Metal Resistant, Isotherm, Isotherms, Kinetic, Kinetic Model, Langmuir, Metal, Model, Models, P, P. aeruginosa, pH, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Pseudomonas Aeruginosa, Removal, Rights, Solutions, Species, Spectroscopy, Waste-Water, Zinc, Zn2+

? Javanbakht, V., Zilouei, H. and Karimi, K. (2011), Lead biosorption by different morphologies of fungus *Mucor indicus*. *International Biodeterioration & Biodegradation*, **65** (2), 294-300.

Full Text: [2011\Int Bio Bio65, 294.pdf](2011/Int%20Bio%20Bio65,%20294.pdf)

Abstract: Biosorption characteristics of Pb+2 ions from aqueous solution were investigated using fungus Mucor indicus biomass treated with NaOH. Biosorption was measured as a function of biomass morphology, pH, biomass concentration, contact time, and metal concentration. The morphology of M. indicus biomass was manipulated towards filamentous or yeast-like forms. The highest and lowest biosorption capacities were observed for purely filamentous and yeast-like forms, respectively. Models of Langmuir, Freundlich, Temkin, and Scachard were applied to describe adsorption isotherm and fitted appropriately. Biosorption kinetics was successfully described using Ho’s pseudo-second-order model. Maximum and minimum values of biosorption capacity of Pb2+ were 22.1 and 12.1 mg g(-1) for purely filamentous and yeast-like morphologies, respectively. Increasing pH resulted in higher biosorption of Pb+2 ions up to pH 5.5. Biosorption capacity of individual Pb+2 ions was reduced in the presence of other metal ions in bi- or multi-metal ion experiments. Metal ions adsorption by the biomass could be eluted effectively with HNO3. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Isotherm, Adsorption Kinetic, Aqueous-Solution, Biosorption, Cadmium, Cd(II), Copper, Equilibrium, Freundlich, Heavy-Metal Ions, Heavy-Metal Removal, Ions, Isotherm, Kinetics, Langmuir, Lead, Metal Ions, Morphology, Mucor Indicus, Pb(II), pH, Rouxii Biomass, Sludge

? Mona, S., Kaushik, A. and Kaushik, C.P. (2011), Biosorption of chromium(VI) by spent cyanobacterial biomass from a hydrogen fermentor using Box-Behnken model. *International Biodeterioration & Biodegradation*, **65** (4), 656-663.

Full Text: [2011\Int Bio Bio65, 656.pdf](2011/Int%20Bio%20Bio65,%20656.pdf)

Abstract: The study explores utilization of waste cyanobacterial biomass of Nostoc linckia from a lab-scale hydrogen fermentor for the biosorption of Cr(VI) from aqueous solution. The biomass immobilized in alginate beads was used for removal of the metal in batch mode optimizing the process conditions adopting response surface methodology (RSM). Kinetic studies were done to get useful information on the rate of chromium adsorption onto the cyanobacterial biomass, which was found to follow pseudo second-order model. Four important process parameters including initial metal concentration (10-100 mg/L), pH (2-6), temperature (25-45 degrees C) and cyanobacterial dose (0.1-2.0 g) were optimized to obtain the best response of Cr(VI) removal using the statistical Box-Behnken design. The response surface data indicated maximum Cr(VI) biosorption at pH 2-4 with different initial concentrations of the metal in the aqueous solution. The biosorbent could remove 80-90% chromium from solutions with initial metal concentration of 10-55 mg/L Involvement of the surface characteristics of the biomass was studied through its scanning electron micrographs and Fourier transform infrared (FTIR) analysis. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Aqueous-Solution, Batch, Biosorption, Box-Behnken Model, Chromium (VI), Column, Copper, Cr(VI), Cyanobacterium, Information, Ions, Methodology, Microalgae, Model, Optimization, Process Optimization, Pseudo-Second-Order, Removal, Statistical, Surface Methodological Approach, Waste Biomass

# Title: International Biohydrometallurgy Symposium

Volesky, B. (2001), Biosorption: Application aspects - Process modeling tools. *International Biohydrometallurgy Symposium*: *The Scientific Knowledge for Technology and Sustainable Development*, Ouro Preto, Minas Gerais, Brazil, **September 16-19**, 69-80.

Full Text: [I\Int Bio Sym, 69.pdf](I/Int%20Bio%20Sym,%2069.pdf)

Yun, Y.S., Niu, H. and Volesky, B. (2001), The effect of impurities on metal biosorption. *International Biohydrometallurgy Symposium*: *The Scientific Knowledge for Technology and Sustainable Development*, Ouro Preto, Minas Gerais, Brazil, **September 16-19**, 181-187.

Full Text: [I\Int Bio Sym, 181.pdf](I/Int%20Bio%20Sym,%20181.pdf)

Niu, H. and Volesky, B. (2001), Biosorption of anionic metal complexes. *International Biohydrometallurgy Symposium*: *The Scientific Knowledge for Technology and Sustainable Development*, Ouro Preto, Minas Gerais, Brazil, **September 16-19**, 189-197.

Full Text: [I\Int Bio Sym, 189.pdf](I/Int%20Bio%20Sym,%20189.pdf)

# Title: International Business Review

Full Journal Title: [International Business Review](http://www.sciencedirect.com/science/journal/09695931)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Fetscherin, M., Voss, H. and Gugler, P. (2010), 30 Years of foreign direct investment to China: An interdisciplinary literature review. *International Business Review*, **19** (3), 235-246.

Full Text: [2010\Int Bus Rev19, 235.pdf](2010/Int%20Bus%20Rev19,%20235.pdf)

Abstract: The purpose of this paper is to examine how scholarly research on foreign direct investment (FDI) to the People’s Republic of China has evolved and been shaped using bibliometrics analysis of 422 journal articles published in 151 journals between 1979 and 2008 on that topic. The literature is dominated by the fields of Economics, followed by Business and Management. Planning and Development and International Relations, which together account for 95% of all publications. Ten percent of the most productive journals are responsible for 40% of all publications and 63% of all citations received. By means of citation mapping, four main research streams have been identified: (1) the motives and determinants of FDI to China; (2) ‘inside’ the multinational enterprise (MNE); (3) the impact of MNE activities: and (4) policy implications for the host country. Emerging research streams have been identified as the effects of inward FDI on (i) corporate social responsibility attitudes of domestic and foreign firms, (ii) environmental and climate issues, (iii) the institutional and societal transformation of China, and (iv) the emergence of Chinese MNEs and its impact on the operations of foreign MNEs in China. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Activities, Articles, Bibliometric Analysis, Bibliometrics, China, Citation, Citation Map, Citations, Climate, Determinants, Development, Economic-Development, Economics, Effects, Elsevier, Entry, FDI, Foreign Direct Investment, Impact, Interdisciplinary, International, International-Business Research, Joint Ventures, Journal, Journals, Literature, Literature Review, Location, Management, Mapping, Multinational-Enterprise, People’s Republic of China, Performance, Policy, Publications, Research, Review, Streams, Topic, Transformation

# Title: International Chemical Engineering

Full Journal Title: International Chemical Engineering

ISO Abbreviated Title:

JCR Abbreviated Title: Int Chem Eng

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Thermodynamics Mechanics: Impact Factor

? Todes, O.M. and Lezin, Y.S. (1967), Dynamics of continous adsorption and desorption in a fluidized bed with a non-linear isotherm. *International Chemical Engineering*, **7** (4), 577-??.

? Niac, G. (1967), Kinetic method for determination of adsorption isotherms. *International Chemical Engineering*, **7** (4), 666-??.

Notes: highly cited

? Gnielinski, V. (1976), New equations for heat and mass-transfer in turbulent pipe and channel flow. *International Chemical Engineering*, **16** (2), 359-368.

# Title: International Classification

Full Journal Title: International Classification

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Thermodynamics Mechanics: Impact Factor

? (1976), Scientometrics and bibliometrics - Idis-Conference, Jan 1976. *International Classification*, **3** (1), 35.

? Henzler, R.G. (1978), Free or controlled vocabularies. *International Classification*, **5** (1), 21-??.

# Title: International Communications in Heat and Mass Transfer

Full Journal Title: [International Communications in Heat and Mass Transfer](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5732&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=335273a9c945d9cc4ca6eaee9424c31e)

ISO Abbreviated Title: Int. Commun. Heat Mass Transf.

JCR Abbreviated Title: Int Commun Heat Mass

ISSN: 0735-1933

Issues/Year: 8

Journal Country/Territory: United States

Language: Multi-Language

Publisher: Pergamon-Elsevier Science Ltd

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

Subject Categories:

Thermodynamics: Impact Factor 0.708, 27/42 (2006)

Mechanics Impact Factor 0.708, 64/109 (2006)

? Carvalho, Jr., J.A. and Gotaç, P.R. (1993), Heat and mass-balance analysis of an incinerator for aqueous wastes. *International Communications in Heat and Mass Transfer*, **20** (4), 535-544.

Full Text: [I\Int Com Hea Mas Tra20, 535.pdf](I/Int%20Com%20Hea%20Mas%20Tra20,%20535.pdf)

Abstract: We present an analysis of incinerators for 100% aqueous wastes in which an energy balance is performed for a general CmHnOpSqNr type auxiliary fuel. General equations relating design temperatures and residence times to wastes/fuel ratios and excess air are developed. The methodology is applied to the use of oil or natural gas as auxiliary fuels.

# Title: 2nd International Conference on Bioinformatics and Biomedical Engineering

Full Journal Title: 2nd International Conference on Bioinformatics and Biomedical Engineering

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chen, Y.N., Chai, L.Y., Yang, Z.H. and Wang, Y.Y. (2008), Biosorption kinetics and thermodynamics of arsenate and arsenite on spent grains. *2nd International Conference on Bioinformatics and Biomedical Engineering*, **17**, 3260-3263.

Abstract: The biosorption of arsenate and arsenite from aqueous solutions by spent grains, a by-product of the brewing process, was investigated. The effects of solution pH, contact time and temperature were studied in batch experiments. The initial removal is rapid and equilibrium was established in less than 180 min. Good correlation coefficients were obtained for the pseudo second-order kinetic model. The enthalpy of sorption was exothermic and the increase in As(III) removal was larger than that of As(V) over the same rise in temperature. Spent grains are a potential biosorbent for the removal of As(V) and As(III) from the effluent of metallurgical industry. © 2008 IEEE.

Keywords: Arsenate, Arsenite, Biosorption, Spent Grains

# Title: IChEAP-9: 9th International Conference on Chemical and Process Engineering

Full Journal Title: IChEAP-9: 9th International Conference on Chemical and Process Engineering

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Pragono, R., Vu, L.T.T., Hourigan, J.A., Durham, R.J. and Sleigh, R.W. (2009), Sorption kinetics of riboflavin from lactose solutions in chromatography columns. *IChEAP-9: 9th International Conference on Chemical and Process Engineering, Pts 1-3*, **17**, 933-938.

Abstract: The sorption of riboflavin by Amberlite FPX66 resin was studied using downward flow of riboflavin containing solutions through packed columns at different temperatures and flow rates. In recycled batch mode, the adsorption rate followed the pseudo-first-order kinetic model at a low temperature and the pseudo-second-order model at a higher temperature. During the initial stage of a continuous run the adsorption processes followed the zero-order model. The intra-particle diffusivity D was found to increase linearly with increasing adsorbent/sorbate ratio and flow rates and decreased in lactose solution compared to lactose-free solution. Continuous sorption was superior, removing 1.5 times more riboflavin than the batch mode after two hours.

Keywords: Adsorption, Adsorption Rate, Batch, Batch Mode, Equilibrium, Flow, Kinetic, Kinetic Model, Kinetics, Lactose, Low Temperature, Mode, Model, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Rates, Removal, Resin, Resins, Solution, Solutions, Sorption, Sugar, Temperature

# Title: International Conference on Communication Technology Proceedings

Full Journal Title: [International Conference on Communication Technology Proceedings](http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=19245&isYear=2000)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wu, H.Q. (2000), The progress of communication technology subject of hi-tech research development plan of China. In *International Conference on Communication Technology Proceedings*, **1**, 3-4.

Full Text: [2000\Int Con Com Tec Pro1, 3.pdf](2000/Int%20Con%20Com%20Tec%20Pro1,%203.pdf)

Abstract: Summary form only given. In 1986, China put a high-technology research development plan, named the 863 plan, into operation. The subject of communication technology was formally included into the 863 plan in 1992, and the research projects were put into operation in 1993. It has undergone three research phases: phase I (1993-1995); the key technology of BIP-ISDN (broadband intelligent personalized and integrated services digital network) are its main objectives, and R&D projects are arranged according to the four sub-subjects: communication network and switching technology, optical fiber communication technology, personalized communication technology, and multimedia communication technology; phase II (1996-1998); R&D projects are also arranged according to the above four sub-subjects; phase III (1999-2000); the main directions of attack are broadband IP service node and application system-based IP. After reviewing the research achievements in communication technology and introducing the research projects in progress and their key technologies, this paper presents the research direction of communication technology for the S-863 plan, which will start in 2001 after the 863 plan.

# Title: 2007 International Conference on Convergence Information Technology - ICCIT ‘07

? Jung, J., Chul-Mo, K. and Geun-Sik, J. (2007), A divide-and-conquer approach to detecting latent community of practice from virtual organizations. *2007 International Conference on Convergence Information Technology - ICCIT ‘07*, 129-134.

Abstract: Social network analysis methods have been exploited to support efficient collaborations in virtual organizations. However, a social network within a virtual organization is simply assumed to be homogeneous, i.e., all linkages between actors are contextually identical. For example, in bibliometrics, all linkages on a network are identical to “co- authoring” relationship between the actors. In this paper, we focus on integrating multiple social networks of which relationships between actors are heterogeneous. It makes a new relationship between two actors in different social networks possible to be discovered. In particular, we show how to detect latent community of practice from the multiple networks by measuring semantic centrality of actors. Thereby, we propose a divide-and-conquer approach based on the context matching algorithm, which is capable of separating the multiple social networks, with respect to the contexts of practice. We also take into account the relationships between topological features and the labels by statistical co-occurrence analysis.

Keywords: Algorithm, Analysis, Bibliometrics, Community, Methods, Network, Network Analysis, Practice, Social Networks

# Title: Preprints. 2nd International Conference on the Effective Use of CD-ROM Databases

Full Journal Title: Preprints. 2nd International Conference on the Effective Use of CD-ROM Databases

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Jones, S. (1990), The electronic era of information delivery: Challenges for the information industry. *Preprints. 2nd International Conference on the Effective Use of CD-ROM Databases*, 44-49.

Abstract: In 1988 ISI introduced its first product on compact disc, the Science Citation Index Compact Disc Edition. Since then ISI has released another CD product, the Social Sciences Citation Index Compact Disc Edition, and six separate editions of Current Contents on Diskette. The paper reviews some of the challenging issues which this rapid entrance into the electronic era presented to an information company.

Keywords: CD, Delivery, First, Information, ISI, Reviews, Science Citation Index

# Title: 6th International Conference & Exhibition on Chemistry in Industry (CHEMINDIX 2004)

? Belaadi, S. (2004), Removal of color from wastewaters by bisorption. *6th International Conference & Exhibition on Chemistry in Industry*, Manama, Kingdom of Bahrain, September 27-29, 2004.

Full Text: [2004\Int Con Exh Che Ind.pdf](2004/Int%20Con%20Exh%20Che%20Ind.pdf)

# Title: Ninth International Conference on Grey Literature, GL9 Conference Proceedings - Grey Foundations in Information Landscape

Full Journal Title: Ninth International Conference on Grey Literature, GL9 Conference Proceedings - Grey Foundations in Information Landscape

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1386-2316

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Di Cesare, R., Luzi, D. and Ruggieri, R. (2008), The impact of Grey Literature in the web environment: A citation analysis using Google Scholar. *Ninth International Conference on Grey Literature, GL9 Conference Proceedings - Grey Foundations in Information Landscape*, **9**, 49-63.

Keywords: Analysis, Bibliometrics, Citation, Citation Analysis, Demographers, Environment, Google, Google Scholar, Impact, Indexes, Web

? Schopfel, J. (2008), Grey literature on bilingualism in Belgium. *Ninth International Conference on Grey Literature, GL9 Conference Proceedings - Grey Foundations in Information Landscape*, **9**, 65-73.

Abstract: Because of the town Antwerp host of the GL9 conference and because of our own former scientific experience we selected the field of bilingualism for a study on the importance of grey literature in social sciences and humanities. The study is meant to be an additional contribution to comparable scientometric analyses on the distribution of types of publications in different scientific domains. Bilingualism, the learning and use of two or more languages, is a linguistic, social, educational and psychological reality for many people and most countries. In the heart of Europe, Belgium, a country with two cultural and linguistic populations, with immigration, international business and institutions, is particularly confronted with this reality. Reaction to and part of its multicultural society, Belgium developed since many years a significant interdisciplinary research activity in the field of bilingualism. The particularity of our study is twofold: First, the research on bilingualism is interdisciplinary, at the crossroad of linguistics, sociology, psychology and educational sciences, each domain presenting its own vectors of publication and communication. Second, while most of the previous studies on the importance of grey literature are citation analyses, our study is based on search results from databases, catalogues, open archives and search engines.

Keywords: Activity, Analyses, Belgium, Bilingualism, Business, Citation, Communication, Contribution, Country, Cultural, Databases, Developed, Distribution, Europe, Experience, Field, Grey Literature, Heart, Host, Humanities, Immigration, Institutions, Interdisciplinary, Interdisciplinary Research, International, International Business, Languages, Learning, Linguistics, Literature, Multicultural, Multicultural Society, Open, Populations, Psychological, Psychology, Publication, Publications, Reality, Research, Sciences, Scientometric, Search, Social, Social Sciences, Society, Sociology

? de Blaaij, C. (2008), The use of grey literature in historical journals and historical research: A bibliometric and qualitative approach. *Ninth International Conference on Grey Literature, GL9 Conference Proceedings - Grey Foundations in Information Landscape*, **9**, 74-79.

Abstract: Grey literature is generally accepted as an important part of scholarly communication especially in the “hard” sciences. Since little is known about the use and nature of grey literature in the humanities and specifically in the discipline of history, a systematic analysis was done to characterize the bibliographic references appearing in ten core history journals. Methods: references from all research articles published in ten core history journals in 2005 were analyzed - five printed and five Open Access history journals - to determine the portion of references from grey literature. The Open Access history journals are free available on the internet. The references were analyzed and categorized according to the type of publication. The uses of grey literature in printed versus Open Access versions were compared. It will be shown that grey literature as a primary source will be less important than in STM journals. Surprisingly the role of grey literature is of significance in Open Access history journals. The printed history journals show opposed results. Supplementary to grey literature is the development of the format of grey literature as aggregated historical datasets. These datasets are electronically available and will have an important influence on historical research if historians will get more confident in using these sources.

Keywords: Access, Analysis, Approach, Bibliometric, Communication, Development, Grey Literature, History, Humanities, Influence, Internet, Journals, Literature, Primary, Publication, Qualitative, Qualitative Approach, References, Research, Role, Scholarly Communication, Sciences, Significance, Source, Sources, STM, Systematic

# Title: 2007 IEEE International Conference on Industrial Engineering and Engineering Management

Full Journal Title: 2007 IEEE International Conference on Industrial Engineering and Engineering Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Pilkington, A. (2007), Engineering management or management of technology? A bibliometric study of IEEE TEM. *2007 IEEE International Conference on Industrial Engineering and Engineering Management, Vols 1-4*, 2106-2109.

Abstract: We tend to use the terms engineering management (EM) and management of technology (MOT) interchangeably. This paper tries to examine what these mean through a bibliometric study of IEEE Transactions on Engineering Management. As well as introducing bibliometric ideas, network analysis tools identify and explore central concepts covered by EM/MOT and their inter-relationships. Specific results to be presented will cover different levels of analysis and so show different dimensions which can be extracted form citation data: Co-word terms from article keywords used to identify themes Journal title co-citation network: link MOT to other disciplines Individual publications co-citation networks used to show concentrations of underlying themes and how they relate Citation patterns of publication titles show that MOT appears dominant in IEEE TEM and the discipline has a bridging role in integrating ideas from several distinct areas including innovation, NPD, strategy, organisation science and management science. The analysis further suggests that MOT essentially relates to the firm rather than policy.

Keywords: Analysis, Bibliometric, Bibliometric Study, Citation, Co-Citation, Cocitation, Innovation, Management, Network, Network Analysis, Policy, Publication, Publications, Science, Technology, TEM

# Title: IEEM: 2008 International Conference on Industrial Engineering and Engineering Management

Full Journal Title: IEEM: 2008 International Conference on Industrial Engineering and Engineering Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Jarvenpaa, H. and Makinen, S.J. (2008), Empirically detecting the hype cycle with the life cycle indicators: An exploratory analysis of three technologies. *IEEM: 2008 International Conference on Industrial Engineering and Engineering Management, Vols 1-3*, 12-16.

Abstract: Hype Cycle is a popular graphic representation of the level of maturity, adoption and business application of a technology, originally introduced by Gartner Research’s Jackie Fenn. Despite its popularity, the verification or relation to theoretical frameworks is to a large extent missing in current research literature. This paper presents some possible theoretically based conceptualizations and definitions regarding the Hype Cycle. In addition, a bibliometric study of the existence of the Hype Cycle in terms of technology life cycle indicators, specifically in applied research and application phases, was carried out.

Keywords: Bibliometric Study, Hype Cycle, Indicators, Research, Technological Evolution, Technology Life Cycle

? Pilkington, A. (2008), Modelling the Diffusion of Innovation Management Theory using S-curves. *IEEM: 2008 International Conference on Industrial Engineering and Engineering Management, Vols 1-3*, 920-924.

Abstract: This paper explores the suitability of using diffusion S-curves to describe and compare the diffusion of citations within the innovation management discipline. There is some debate as to how to extend the existing measures of bibliometrics and modelling instead of indexes is just one option being explored. The ISI Citation data on the ten leading journals in the innovation management field are modelled and compared using a wide range of distributions. The resulting grouping of journals appears to be a useful proxy for academic-practitioner involvement and warrants further investigation. The finding that the three-parameter Inverse Gaussian is the best fit to the data extends the understanding of this process.

Keywords: Bibliometrics, Citation, Citations, Diffusion, Impact, Innovation Management, Management, S-Curve, Scientific Journals

# Title: Seventh Conference of the International Society for Scientometrics and Informetrics, Proceedings - 1999

Full Journal Title: Seventh Conference of the International Society for Scientometrics and Informetrics, Proceedings - 1999

ISO Abbreviated Title:

JCR Abbreviated Title:

ISBN:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: JJournal

? Tiew, W.S. and Sen, B.K. (1999), Acknowledgement patterns in research articles: A bibliometric study based on *Journal of Natural Rubber Research* 1986-1997. *Seventh Conference of the International Society for Scientometrics and Informetrics, Proceedings - 1999*, 488-497.

Abstract: Analyses the acknowledgements included in the research articles and short communications published in Journal of Natural Rubber Research (1986-1997) in respect of types: frequency of occurrence, individuals acknowledged, etc. Results indicate that 74% items contain acknowledgements; average acknowledgements per item is 2.2; the most common type of acknowledgments relates to technical support. Peer interactive communication account for 44% of the total acknowledgements. The result of the study substantiates the earlier findings that a small number of individuals an highly acknowledged and the rest are acknowledged infrequently.

Keywords: Bibliometric, Bibliometric Study, Communication, Communications, Research, Respect, Small, Support

# Title: International Conference on Innovations in Information Technology

Full Journal Title: International Conference on Innovations in Information Technology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISBN:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Woon, W.L., Henschel, A. and Madnick, S. (2009), A framework for technology forecasting and visualization. *International Conference on Innovations in Information Technology*, 201-205.

Abstract: This paper presents a novel framework for supporting the development of well-informed research policies and plans. The proposed methodology is based on the use of bibliometrics; i.e., analysis is conducted using information regarding trends and patterns of publication. While using bibliometric techniques in this way is not a new idea, the proposed approach extends previous studies in a number of important ways. Firstly, instead of being purely exploratory; the focus of our research has been on developing techniques for detecting technologies that are in the early growth phase, characterized by a rapid increase in the number of relevant publications. Secondly, to increase the reliability of the forecasting effort, we propose the use of automatically generated keyword taxonomies, allowing the growth potentials of subordinate technologies to be aggregated into the overall potential of larger technology categories. A proof-of-concept implementation of each component of the framework is presented, and is used to study the domain of renewable energy technologies. Results from this analysis are presented and discussed.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Bibliometrics, Emerging Technologies, Forecasting, Growth, Publication, Publications, Renewable Energy, Research, Science, Technology

# Title: ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics

Full Journal Title: ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics

ISO Abbreviated Title:

JCR Abbreviated Title:

IDS Number: BDC93

ISBN: 91-7140-339-6

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wilson, C.S. (2005), General analyses of cancer research publications in Australian states using the science and social science citation indexes. *ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics* (edited by Ingwersen, P. and Larsen, B.), Karolinska University Press, Stockholm, Sweden, **1** (2), 168-176.

Abstract: This research measures the quantity, quality and extent of international collaboration of cancer research publications in Australian states from 1994-1998 through citation analysis. Journal publications (with at least one Australian author) of the cancer literature from Science Citation Index and Social Sciences Citation Index were analyzed. For the five-year period, New South Wales (NSW) produced the most publications (31%), slightly ahead of Victoria (VIC) with 29%; Queensland (QLD) ranked third (14%) and South Australia (SA) fourth with 11%. However, as measured by mean journal impact factor, the publications from NSW were of overall lower quality than those from VIC, SA, QLD, and from Australia as a whole. When standardized for quality against the national average, and adjusted for state size, the publication output of the four larger states are ranked in order: SA >> VIC >> QLD > NSW. Four measures of international collaboration on publications were investigated as measures of quality; the degree of collaboration with the USA and England broadly support the IF rankings. At a minimum, these results suggest that the relevant Australian State authorities, should initiate more extensive analyses of an apparent deficiency in the overall quality of their states’ cancer research, with the view to greater, or more selective, support.

Keywords: Analyses, Analysis, Australia, Australian, Cancer, Citation, Citation Analysis, Citation Indexes, Collaboration, England, Impact, Impact Factor, International, Journal, Journal Impact, Journal Impact Factor, Literature, Minimum, New South Wales, Publication, Publications, Quality, Quality of, Rankings, Research, Science, Science Citation Index, Size, Social, South Australia, State, Support, USA

? Huang, M.H. and Chang, H.W. (2005), Research evaluation of research-oriented Universities in Taiwan. *ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics* (edited by Ingwersen, P. and Larsen, B.), Karolinska University Press, Stockholm, Sweden, **1-2**, 247-250.

Abstract: This paper uses ISI Essential Science Indicators (ESI) database to investigate the academic performance of seven research-oriented universities in Taiwan from both the quantitative and qualitative perspectives. It collects research data for I I years from 1993 to 2003. The performance indicators applied in this study includes the number of papers, the number of citations, the average citations per paper, the number of highly cited papers, the number of hot papers, and the number of core papers. The research performance and strength of those universities are revealed in this study. It finds that National Taiwan University leads among these seven research-oriented universities. However, individual university still shows strengths in various specific fields.

Keywords: Citations, Essential Science Indicators, Evaluation, Highly Cited Papers, Indicators, Research, Research Performance, Universities

? Jin, B. and Rousseau. R. (2005), China’s quantitative expansion phase: Exponential growth but low impact. *ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics* (edited by Ingwersen, P. and Larsen, B.), Karolinska University Press, Stockholm, Sweden, **1-2**, 362-370.

? Moed, H.F. (2005), Citation analysis in research evaluation. *ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics* (edited by Ingwersen, P. and Larsen, B.), Karolinska University Press, Stockholm, Sweden, **1-2**, 437-441.

? Ajiferuke, I. (2005), Inter-University collaboration in Canada. *ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics* (edited by Ingwersen, P. and Larsen, B.), Karolinska University Press, Stockholm, Sweden, **1-2**, 527-533.

Abstract: This study examines the extent of inter-institutional collaboration between scholars in the 48 major Canadian universities, and also determines the factors that influence such collaboration. Documents included in the Science Citation Index Expanded, Social Science Citation Index, and Arts & Humanities Citation Index of the online ISI’s Web of Science database for the period 1990- October 31, 2003 were used as sources of data for the study. Making use of the author’s affiliation field, we were able to determine the number of publications coauthored by scholars in each pair of universities. Multiple regression analysis was used to determine the influence of factors such as geographical distance, province, language, time zone, age, and peer group on collaboration. Only province and peer group were included in the final regression model.

Keywords: Model, Quality, Science, Scientific Collaboration

? Lariviere, V., Gingras, Y. and Archambault, E. (2005), Comparative analysis of networks of collaboration of Canadian researchers in the natural sciences, social sciences and the humanities. *ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics* (edited by Ingwersen, P. and Larsen, B.), Karolinska University Press, Stockholm, Sweden, **1-2**, 565-574.

Abstract: A basic dichotomy is generally made between publication practices in the natural sciences and engineering (NSE) and social sciences and humanities (SSH). However, while researchers in the NSE share lots of common practices with researchers in SSH, the spectrum of practices is broader in the latter. Drawing data from the CDROM versions of the Science Citation Index, Social Science Citation Index and the Arts & Humanities Citation Index from 1980 to 2002, this paper analyses collaboration in the SSH compared to the NSE. We show that, contrary to a widely held belief, researchers in the social sciences and the humanities have distinct collaborative practices. In fact, collaborative activities of researchers in the social sciences are more comparable to those of researchers in the NSE than to scholars in the humanities. Also, we see that language and cultural proximity influences the choice of collaborators in the SSH, but also in the NSE.

Keywords: Behavioral-Sciences, Bibliometric Indicators, International-Cooperation, Producers, Research Performance, SCI, Sociology Citation Index

? Robert, C., Wilson, C.S., Gaudy, J.F. and Arreto, C.D. (2005), Scientornetric analysis of the 2003 sleep research literature in medicine and biology. *ISSI 2005: Proceedings of the 10th International Conference of the International Society for Scientometrics and Informetrics* (edited by Ingwersen, P. and Larsen, B.), Karolinska University Press, Stockholm, Sweden, **1-2**, 604-614.

Abstract: The distribution of journal articles published in 2003 involving sleep research in the fields of medicine and biology from the ISI (Institute for Scientific Information) Current Content databases was analysed. The following parameters were considered: the number of articles per country, the average journal impact factor of each country, the ISI journal subject category, and the top producing countries’ populations and gross domestic products. Among the 2325 articles considered - authored (or co-authored) by researchers from 66 countries the six most prolific were the USA, Germany, Japan, The United Kingdom, France and Canada; other publishing countries, in decreasing order of productivity, include Italy, Australia, and The Netherlands. Comparisons between the USA and the European Union (EU) countries, and the journal distribution of sleep publications among the subdisciplines of the life sciences and clinical medicine are also presented.

Keywords: Analysis, Australia, Bibliometric Analysis, Biology, Canada, Clinical, Country, Databases, Distribution, EU, European Union, European-Union, France, Germany, Impact, Impact Factor, Institute for Scientific Information, ISI, Italy, Japan, Journal, Journal Articles, Journal Impact, Journal Impact Factor, Journals, Life, Life Sciences, Literature, Medicine, Netherlands, Neuroscience, Output, Populations, Productivity, Publications, Publishing, Research, Science, Sciences, Sleep, The Netherlands, United Kingdom, USA

# Title: Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics

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? Archambault, E. and Lariviere, V. (2007), Origins of measures of journal impact: Historical contingencies and their consequences on current use. *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 45-51.

Abstract: This paper examines the genesis of journal impact measures and how their evolution culminated in the journal impact factor (JIF) produced by the Institute for Scientific Information. The paper shows how the form of the JIF, which is the result of historically contingent choices rather than a carefully chosen and tested set of features, affected its subsequent use, misuse, and manipulation by researchers, journal editors, and bibliometricians.

Keywords: Contingencies, Evolution, History, Impact, Impact Factor, Institute for Scientific Information, Journal, Journal Editors, Journal Impact, Journal Impact Factor, Performance, Science, Subject Categories

? Chen, L., Pan, Y.T., Ma, Z., Su, C. and Wu, Y.S. (2007), A comparative study between international and domestic interdisciplinary journals and specialty journals: A trial analysis of medical journals, philosophy journals and journals in philosophy of medicines. *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 201-206.

Abstract: Through the analysis of 17 international and domestic journals, this paper is to find the development trend of philosophy of medicine by using scientometric methods and visualization tool. The 17 journals include medical journals, philosophy journals, as well as journals bridging medicine and philosophy. The analysis involves such indicators as the Citing Half-Life and author affiliation. From the citation network maps derived from citation matrix, one can observe the development trend in philosophy of medicine, and the changing role played by philosophy or medicine in the development of an interdisciplinary field, namely philosophy of medicine.

Keywords: Affiliation, Analysis, Citation, Citation Network, Comparative Study, Development, Field, Indicators, Interdisciplinary, International, Journals, Matrix, Medical, Medical Journals, Medicine, Methods, Network, Philosophy, Philosophy of Medicine, Role, Scientometric, Specialty, Trend, Trial, Visualization

? Romero, A.G., Cortes, J.N., Escudero, C., Lopez, J.A.F. and Moreno, J.A.C. (2007), Measuring the contribution of clinical trials to bibliometric indicators: Citations and Journal Impact Factor (R). *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 300-304.

Abstract: Clinical trials play a relevant role in the development of new drugs. After a clinical trial has been carried out, its results are usually published in scientific journals. These papers receive a significant number of citations that can affect the scores for indicators such as the Journal Impact Factor (R) or the h-index. However, there is a criticism with this practice especially because around 3/4 of the clinical trials are funded by industry that can use this channel to promote their products. In addition, the Frascati Manual (OECD) establishes that clinical trials must be considered as part of product development and not research activities. We have established two main research questions: (i) Are clinical trials cited significantly more than other papers? (ii) To what extent are Journal Impact Factors modified by citations to clinical trials? We use the database from Thomson-ISI Web of Science (R) jointly with Medline to answer these questions. Our preliminary results suggest the following remarks. Firstly, the clinical trials are significantly more cited than other papers. Secondly, the Impact Factors are significantly reduced if we do not take into account the clinical trials. We believe that this information could be useful for the Research Policy decision makers.

Keywords: Affect, Bibliometric, Bibliometric Indicators, Citation, Citations, Clinical, Clinical Trial, Clinical Trials, Contribution, Database, Decision, Development, Drugs, h Index, h-Index, Impact, Impact Factor, Indicators, Industry, Information, Journal Impact Factor, Journals, Medical Journals, Modified, OECD, Papers, Pharmaceutical Companies, Play, Practice, Research, Research Questions, Role, Scientific Journals, Trial, Web of Science

? Liu, Y.X. and Rousseau, R. (2007), Hirsch-type indices and library management: The case of Tongji University Library. *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 514-522.

Abstract: Hirsch-type indices are applied in a library management context. In this article quantitative, statistical approaches as well as a qualitative discussion are used to study the case of Tongji University Library. A comparison is made between the properties of different Hirsch-type indices. It is further shown that Hirsch-type indices can illuminate the reading interests of readers as shown by their use of a library’s collection, hence expanding the field of application of such indicators.

Keywords: Application, Collection, Comparison, Context, Field, g-Index, h-(2)-Index, h-Index, Hirsch Index, Indicators, Indices, Inequality Measurement, Interests, Library Management, Management, Model, Qualitative, Ranking, Reading, Reading Interests, Scientists

? Markusova, V., Jansz, M., Libkind, I. and Varshavsky, A. (2007), Trends in Russian research output in Post-soviet Era. *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 542-551.

Abstract: Recently, the Russian government has ordered evaluation and reform of the basic research system. As a consequence, the number of research staff at the Russian Academy of Sciences will be reduced by 20% by 2007. The basis for research evaluation and institute budgeting will be bibliometric indicators. In view of these changes we look at the Russian publication output and argue that (1) publication output and citedness have to be considered in relation to the level of expenditure on R & D; (2) bibliometric indicators depend strongly on the database used (ISI’s databases are biased) and their interpretation can be confusing; better coverage of Russian publications or a Russian Science Citation Index are needed. Also, research results are communicated in more ways than paper publications. (3) policy makers have misused ISI statistics to demonstrate “a low level” of Russian R & D. Our paper is a part of a project designed to trace R & D development in a transition economy and knowledge transfer from basic research to innovation. Results of our project shed light on science policy and the social issues due to the indiscriminate introduction of quantitative indicators.

Keywords: Bibliometric, Bibliometric Indicators, Changes, Coverage, Database, Databases, Development, Economy, Evaluation, Indicators, Innovation, ISI, Knowledge, Policy, Publication, Publications, Reform, Research, Research Evaluation, Research Results, Science, Science Citation Index, Science Policy, Social, Statistics

? Nabiullin, A.A. (2007), Emergence of a new discipline in the earth sciences: Bibliometric analysis of photogrammetry and remote sensing literature. *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 594-598.

Abstract: Remote sensing science is a rapidly growing field of the Earth sciences. Since its emergence and to the present day an extensive volume of literature has been published which traces wide application of remote sensing in human activities. According to the ISI Web of Science in 1965-2005 more than 19,000 papers were published on remote sensing. A number of papers grew exponentially with a doubling period of about 6 years. Notwithstanding all specialized journals there are a lot more remote sensing papers published in a vast list of source titles (LIP to 350 journals). Only 25% of the retrieved papers are published in 10 journals which ISI is assigned to a subject category of remote sensing. The time line of remote sensing periodicals issued in 19081995 shows an exponential growth with a doubling period of about 15 years. After 1995 there is a prominent deviation from the exponential curve which shows the demand saturation for specialized journals. The revealed features are discussed in terms of dynamics and impact of remote sensing in the current Earth sciences development.

Keywords: Analysis, Application, Bibliometric, Bibliometric Analysis, Demand, Development, Dynamics, Earth Sciences, Emergence, Field, Growth, Human, Human Activities, Impact, ISI, ISI Web of Science, Journals, Literature, Papers, Periodicals, Remote Sensing, Remote Sensing Literature, Remote-Sensing, Saturation, Science, Sciences, Source, Volume, Web of Science

? Pouris, A. and Pouris, A. (2007), The state of science and technology in Africa (2000-2004): A scientometric assessment. *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 619-630.

Abstract: This article reports for first time the state of science and technology in the African Continent on the basis of two scientometric indicators - number of research publications and number of patents awarded. We suggest that the effort covers partially the need for monitoring indicators for the Continent. Our analysis shows that Africa produced 68 945 publications over the 2000-2004 period or 1.8% of the World’s publications. In comparison India produced 2.4% and Latin America 3.5% of the World’s research. More detailed analysis reveals that research in Africa is concentrated in just two countries - South Africa and Egypt. These two counties produce just above 50% of the Continent’s publications and the top 8 countries produce above 80% of the Continent’s research. Disciplinary analysis reveals that few African countries have the minimum number of scientists required for the functioning of a scientific discipline. Examination of the Continent’s inventive profile, as manifested in patents, indicates that Africa produces less than one thousand of the world’s inventions. Furthermore 88% of the Continent’s inventive activity in concentrated in South Africa. On the basis of the recent declarations on the importance of science and technology for development we suggest that the African Governments should pay particular attention in developing their national research systems.

Keywords: Africa, Assessment, Latin America, Patents, Publications, Research, Science, Science and Technology, Scientometric Indicators, South Africa, Technology

? Tijssen, R.J.W. and Van Leeuwen, T.N. (2007), Research cooperation within Europe: Bibliometric views of geographical trends and integration processes. *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 740-744.

Abstract: This paper presents the first results of an on-going research project devoted to the geography of European science, more specifically to identifying and analyzing structural determinants of international scientific cooperation within Europe. The empirical data are extracted from co-authored research publications by scientists and scholars located in different European countries and regions. The preliminary results disclose underlying patterns and developments within international scientific cooperation during the years 2000-2005 at the level of three country blocks (i.e. EU-15 member states, New EU-25 member states, EU acceding countries and candidate countries), individual countries, and the level of NUTS2 regions (provinces). We find that intra-European cooperation has increased very significantly, largely following the general trends towards further internationalization of science. The European Union is also characterized by a complex and highly dynamic system of research cooperation between its various member states and candidate member states. Data at the regional level provide new insights into underlying patterns and trends, such as the pronounced role of the United Kingdom and Paris (France) as drivers of research partnering within the European landscape.

Keywords: Cooperation, Country, Data, Dynamic, EU, Europe, European Union, First, France, General, Integration, International, Internationalization, Landscape, Publications, Regional, Research, Role, Science, Scientific Cooperation, Trends, United Kingdom

? Uzun, A. (2007), Recent trends in renewable energy research: A bibliometric perspective. *Proceedings of ISSI 2007: 11th International Conference of the International Society for Scientometrics and Informetrics*, **1-2**, 944-945.

Keywords: Bibliometric, Energy, Renewable Energy, Research, Trends

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? Astrom, F. and Sandor, A. (2009), Models of scholarly communication and citation analysis. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 10-21.

Abstract: Informetric/bibliometric analyses have to a large extent been relying on an assumption that research is essentially cumulative in its nature, which is not the least visible in the rational for using citation analyses to assess quality of research. However, when reviewing both the theoretical literature on how research is organized and studies analyzing the structures of research fields through informetric mapping methods, it becomes clear that cumulative organization is just one category of several ways of organizing research and scholarly communication, Consequently, the way the role of citations is interpreted in research assessment has to be revised. Based on the review of previous research, this paper suggests a model for categorizing different modes of scholarly communication. We test this model through three different kinds of semantic labelling analyses on abstracts and research papers from the fields of biomedicine, computer science and educational research. The model proposed suggests three main categories of scholarly communication: cumulative, negotiating and distinctive; and when matching the labels identified in the semantic analysis to the three categories, we find evidence of the three different ways of communicating research that supports the model.

Keywords: Author Cocitation, Information, Intellectual Structure, Science

? Gomes, J.A.N.F. and Vieira, E.S. (2009), How to improve the citation impact of a paper: Choice of journal, co-authors and institutional addresses. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 31-39.

Abstract: This paper attempts at correlating the citation impact of Physics and Chemistry documents in the Web of Science with some parameters of the source, namely the impact factor of the journal, the number of co-authors and the number of institutional addresses. After a comparison of the distribution functions of the 5-year citations of the 2004 Physics and Chemistry documents, a detailed study of the correlation between the citation counts and the three parameters above is presented. There is a striking similarity between the properties found for Physics and Chemistry but for the occurrence of a small but meaningful number of Physics documents with an extremely high number of co-authors and institutional addresses. The average number of citations may double as the number of co-authors increases within its more common range.

Keywords: Bibliometrics, Google-Scholar, Science, Scientific Collaboration, Scopus, Web

? Pislyakov, V. and Dyachenko, E. (2009), Citation expectations: Are they realized? Study of the Matthew Index for Russian papers published abroad. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 52-58.

Abstract: We consider the “Matthew effect” in the citation process which leads to reallocation (or misallocation) of the citations received by scientific papers within the same journals. The case when such reallocation correlates with a country where an author works is investigated. Russian papers in chemistry and physics published abroad were examined. We found that in both disciplines in about 60% of journals Russian papers are cited less than an average one. However, if we consider each discipline as a whole, citedness of a Russian paper in physics will be on the average level, while chemistry publications receive about 16% citations less than one may expect from the citedness of the journals where they appear. Moreover, Russian chemistry papers mostly become undercited in the leading journals of the field. Characteristics of a “Matthew index” indicator and its significance for scientometric studies are also discussed.

Keywords: Competition, Core Journals, Countries, Impact, Indicators, Science

? Kajikawa, Y., Fujimoto, S., Takeda, Y., Sakata, I. and Matsushima, K. (2009), Detection of emerging research fronts in solar cell research. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 71-79.

Abstract: Science and technology (S&T) roadmaps are an attractive tool in R&D management, and have been widely used during the past decade. S&T roadmaps are typically constructed by gathering and stimulating expert’s opinion, but roadmapping is time-consuming and subjective, and therefore computer-based approach is expected to supplement expert-based approach. In this paper, we proposed and demonstrated that the computer-based approach using citation network analysis can be used to depict technology trend, and build the first draft of S&T roadmaps. We perform a case study in solar cell research. We analyzed citation network of energy and solar cell research by clustering the network, visualized the overall structures, extracted emerging research domains there, and track emerging research domains in it by citation network analysis. The possibility and limitation of our approach to roadmapping was discussed. We compared our results by citation network analysis with the existing solar cell roadmap, and showed that citation-based approach can complement expert-based approach.

Keywords: Bibliometrics, Database Tomography, Energy Research, Roadmaps, Science, Technology, Tracking

? Archambault, E., Caruso, J., Cote, G. and Lariviere, V. (2009), Bibliometric analysis of leading countries in energy research. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 80-91.

Abstract: Given our growing dependence on energy, it is relevant to examine how to define, measure, and assess energy research and development. This study discusses the use of bibliometric methods for examining the evolution of energy research at the world level and in leading countries. The originality of the proposed method lies in the use of a several-pronged approach to delineating the field: seeding a keyword set with the output of research organisations in the field, augmenting this dataset with specialized journals, papers selected on the grounds of number of references made to a basic dataset and papers selected on the basis of citations received from papers in that basic dataset. This strategy results in both high recall and high precision. Results show that scientific output in energy research has doubled since 1996. Among leading countries, China has demonstrated a stupendous growth rate, specialization in the field, and immense scientific output. In contrast, many English-speaking countries (with the exception of Canada, which performs above the world average) are not performing as strongly, and some of the traditionally well established countries in energy R&D (e. g., the US and Japan) are progressively losing ground.

Keywords: Impact, Investment, Research-and-Development

? Jacobs, D. and Mutula, S.M. (2009), Public health research in selected African countries: A bibliometric analysis of the literature. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 92-96.

Abstract: The purpose of this study was to conduct a quantitative analysis of Public Health research output in selected African countries. The comparative analyses for 13 countries, namely; Algeria, Botswana, Ghana, Kenya, Lesotho, Namibia, Nigeria, South Africa, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe for the period of 1995-2005. The data was collected by using Dialog database on Public Health to identify the literature distribution by country descriptor. Microsoft Excel was used to analyse the data for the production distribution throughout the period of study. A total of 50 874 documents were collected from the respective countries for the period of the study. The study gives both a quantitative and qualitative analysis of development and growth in the countries under study in the field of public health. South Africa produced most publications 14690(29%), much ahead of all other African countries. Nigeria 6835 (13%) is the next country that produced much in the area of public health. Kenya 5890 (11.6%), Tanzania 5266 (10.2%) and Uganda 5167 (10.2%), were following in their research output in this area.

Keywords: Literature

? Aguillo, I.F., Bar-Ilan, J., Levene, M. and Ortega, J.L. (2009), Comparing university rankings. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 97-107.

Abstract: Recently there is increasing interest in university rankings. Annual rankings of world universities are published by QS for the Times Higher Education Supplement, the Shanghai Jiao Tong University, the Higher Education and Accreditation Council of Taiwan and rankings based on Web visibility by the Cybermetrics Lab at CSIC. In this paper we compare the rankings using a set of similarity measures. For the rankings that are being published for a number of years we also examine longitudinal patterns. The rankings limited to European universities are compared to the ranking of the Centre for Science and Technology Studies at Leiden University. The findings show that there are reasonable similarities between the rankings, even though each applies a different methodology. The biggest differences are between the rankings provided by the QS-Times Higher Education Supplement and the Ranking Web of the CSIC Cybermetrics Lab. The highest similarities were observed between the Taiwanese and the Leiden rankings from European universities. Overall the similarities are increased when the comparison is limited to the European universities.

Keywords: Bibliometric Methods, Rankings

? Leydesdorff, L. (2009), How are new citation-based journal indicators adding to the bibliometric toolbox? *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 108-119.

Abstract: The launching of Scopus and Google Scholar, and methodological developments in Social Network Analysis have made many more indicators for evaluating journals available than the traditional Impact Factor, Cited Halflife, and Immediacy Index of the ISI. In this study, these new indicators are compared with one another and with the older ones. Do the various indicators measure new dimensions of the citation networks, or are they highly correlated among them? Are they robust and relatively stable over time? Two main dimensions are distinguished-size and impact-which together shape influence. The H-index combines the two dimensions and can also be considered as an indicator of reach (like Indegree). PageRank is mainly an indicator of size, but has important interactions with centrality measures. The Scimago Journal Ranking (SJR) indicator provides an alternative to the Journal Impact Factor, but the computation is less easy.

Keywords: Betweenness, Centrality, Impact Factor, Index, Individuals, Networks, Science

? Glanzel, W. (2009), The role of the h-index and the characteristic scores and scales in testing the tail properties of scientometric distributions. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 120-130.

Abstract: The tail properties of scientometric distributions are studied in the light of the h-index and the characteristic scores and scales. A statistical test for the h-core is presented and illustrated using the example of four selected authors. Finally, the mathematical relationship between the h-index and characteristic scores and scales is analysed. The results give new insights into important properties of rank-frequency and extreme-value statistics derived from scientometric and informetric processes.

Keywords: Citation Impact, Indicators, Journals

? Su, J.Y. and Zhou, C.L. (2009), Literature-based multidiscipline knowledge discovery: A new application of bibliometrics. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 165-172.

Abstract: We present a new application of bibliometrics, Literature-based Multidiscipline Knowledge Discovery (LMKD), which is quite different from the well known literature-based knowledge discovery method given by Don R. Swanson. The goal of LMKD is to discover new, potentially meaningful academic visions and relations among given disciplines, by mining bibliographic databases (here we take the case of CSSCI). By using LMKD method, we can try to find the similarities and differences between two research regions and the nature of the disciplines’ relationship will be known clearly. As a discovery method, LMKD can be used in a more widely research area than other literature-based discovery methods.

Keywords: Bibliometrics, Connections, Fish-Oil, Generating Hypotheses, Implicit, Lrd, Magnesium, Medical Literatures, Migraine, Potential Treatments, Raynauds

? Zhang, L., Janssens, F., Liang, L.M. and Glanzel, W. (2009), Hybrid clustering analysis for mapping large scientific domains. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 178-188.

Abstract: A hybrid clustering method combining cross-citation and textual analysis is applied to cluster more than 8,000 journals covered in the Web of Science (2002-2006). Unlike in a previous study where we assumed 22 clusters for comparison with the 22 fields according to the classification scheme of Thomson’s Essential Science Indicators, this study uses a 7 clusters solution, which is one of the candidate results obtained from the clustering process. Based on an agglomerative hierarchical clustering algorithm, all the journals under study have been clustered into 7 large scientific domains. The evaluation of the obtained clustering provides consistent results as considered from the cognitive perspective and the most characteristic terms, which are obtained from the textual component of the classification process, giving a clear description of each individual cluster. The cross-citation network visualises the citation relations among clusters and the asymmetric links reflect the direction of information flow among journals and clusters. Several indicators including PageRank, strong links and entropy are used to identify and analyse representative journals of each cluster.

Keywords: Cocitation, Combining Full-Text, Indicators, Information-Science, Journal-Citation-Reports, Maps, Networks

? Tseng, Y.H., Lee, Y.Y. and Chan, T.Y. (2009), Term mining for relation visualization and exploration: The case of agricultural news reports in Taiwan. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 189-205.

Abstract: An efficient term mining method to build a general term network is presented for term relation visualization and exploration. Terms from each document in the corpus are first identified. They are subject to an analysis for their association weights, which are accumulated over all the documents. The resulting term association matrix is used to build a general term network. A set of terms having similar attributes can then be given to extract the desired sub-network from the general term network for visualization. This analysis scenario based on the collective terms of the same type enables evidence-based relation exploration. Our application examples show that term relations, be it causality, coupling, or others, can be effectively revealed and verified by the underlying corpus. This work contributes by presenting an efficient and effective term-relationship mining method and extending the applicability of term networks to a broader range of informetric tasks.

Keywords: Bibliometrics, Emerging Technologies, Tracking

? Sivertsen, G. (2009), A bibliometric funding model based on a national research information system. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 264

? White, H.D. (2009), Some new tests of relevance theory in information science. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 275-285.

Abstract: A central idea in D. Sperber & D. Wilson’s relevance theory is that an individual’s sense of the relevance of an input in a context varies directly with its cognitive effects and inversely with its ease of processing in that context. H. D. White has argued that this idea has an objective analogue in information science-the tf\*idf (term frequency, inverse document frequency) formula used to weight indexing terms in document retrieval. Here, tf\*idf is used to weight terms from five bibliometric distributions in the context of the seed terms that generated them. The distributions include the descriptors co-assigned with a descriptor, the descriptors and identifiers assigned to an author, two examples of cited authors and their co-citees, and the books and journals cited with a famous book, The Structure of Scientific Revolutions. In each case, the highest-ranked terms are contrasted with lowest-ranked terms. Clear qualitative differences between the sets of terms are intuitively well-explained by relevance theory.

Keywords: Combining Bibliometrics, Retrieval

? Sanz-Casado, E., Iribarren-Maestro, I., Garcia-Zorita, C., Efrain-Garcia, P. and Sanchez-Gil, S. (2009), Are productivity, impact and visibility indicators appropriate for measuring the quality of research conducted in universities? *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 286-290.

Abstract: The outcome of scientific activity conducted by universities materializes in a number of ways, including publications, the research projects, the attainment of scientific repute and the PhD theses awarded. This communication contains the preliminary results of a research project designed to evaluate the quality of Spanish public universities’ scientific activity on the grounds of a wide range of indicators that take into consideration most of the aspects involved in this activity. The objective sought here was to determine the relationship between bibliometric indicators for productivity, impact and visibility and indicators of scientific repute, external funding and researcher training capacity in Spanish public universities. The present study was based on a review of Spanish public universities’ scientific activity in 2002-2006. The relationships between indicators were computed in terms of the determination coefficient (R-2), which measures the percentage of data variability that can be explained by such associations. The results revealed that bibliometric indicators are only scantly related to other measures of scientific activity relevant to university research.

Keywords: Bibliometric Methods

? Ruiz, C.F., Bonilla, R., Chavarro, D.A., Orozco, L.A., Zarama, R. and Polanco, X. (2009), Efficiency measurement of research groups using data envelopment analysis and bayesian networks. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 296-300.

Abstract: Applications of non-parametric frontier production methods such as Data Envelopment Analysis (DEA) have gained popularity and recognition in scientometrics. DEA seems to be a useful method to assess efficiency of research units in different fields of knowledge or disciplines. However, the relations between DEA results and the underlying structure of scientific production of each discipline have not been fully explored. Although there are works that mention the importance to perform studies by scientific disciplines, they do not show how to take into account these differences in the analysis. These studies tend to homogenize the behavior of different communities of practice. In this paper we propose a framework to perform inferences about DEA efficiencies, recognizing the underlying structure of each discipline by means of Bayesian Network (BN) analysis. Two different DEA extensions are applied to calculate the efficiency of research groups, one called CCRO and the other Cross Efficiency (CE). A BN model is proposed as a method to analyze the results obtained from DEA. BNs allow us to recognize peculiarities of each discipline in terms of scientific production and the efficiency frontier. Moreover, BNs bring insight about the relationships between production variables and their impact in each discipline.

Keywords: Impact, Indicators, Performance, Research-And-Development

? Campbell, D., Picard-Aitken, M., Cote, G., Macaluso, B., Robitaille, J.P., Bastien, N., Laframboise, M.C., Lebeau, L.M., Mirabel, P., Lariviere, V. and Archambault, E. (2009), Bibliometrics as a performance measurement tool for research evaluation: The case of research funded by the National Cancer Institute of Canada. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 301-312.

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 as well as in the management of research, including supporting the selection of projects eligible to receive financial support. This paper presents the results of a project where bibliometrics was used as a performance measurement tool to supplement the evaluation of the National Cancer Institute of Canada (NCIC) funding program. The following questions were addressed: (1) Has the NCIC peer-review process been successful in selecting outstanding Canadian researchers in cancer research? (2) Has NCIC funding contributed to increasing the scientific performance of the papers authored by the researchers it supported? (3) How do NCIC-supported researchers compare to their US counterparts that received support from the US National Cancer Institute (NCI)? Citation analysis data provide evidence that the NCIC supported scientists who stand out among Canadian cancer researchers and that NCIC funding had a positive effect on the scientific impact of papers authored by the researchers it supported. Results also show that, although NCIC researchers have less scientific impact than NCI researchers, they are more cited than the US and Canadian average.

Keywords: Bibliometrics, Citation, Indicators, Journals

? Manganote, E. and Schulz, P. (2009), English versus native languages in humanities and social sciences publications: Time evolution, choices and geopolitical issues. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 325-329.

Abstract: In this paper we discuss the language option used in indexed publication in non anglophilic countries, according to the knowledge field. Initially, as expected from various preceding studies, we see the overwhelming use of English in most fields. The scenario becomes more involved in social sciences and humanities, particularly when other publications items than articles are considered. Here we focus on book reviews published in journals indexed in the Web of Science from ISI Thomson-Reuters. Furthermore, within this scenario different countries show different time evolution of language choice in the elected publication class (book reviews). These time evolutions, sometimes favoring English against native languages, seem to be influenced by a variety of factors.

? Vasconcelos, S., Sorenson, M., Batista, P., Ana, M.S. and Leta, J. (2009), The effect of the linguistic landscape of today’s science on the performance indicators of researchers from a Latin American country: A trend for the region? *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 330-337.

Abstract: The scientific databases that are most used nowadays confirm the prevalence of English as the language of today’s science. The effect of this linguistic landscape, however, has only recently been the focus of scientometric studies. Here we correlate language competence and research performance, focusing on the writing skills of Brazilian researchers and their publication output in English-, Portuguese-, Spanish-, French-, and German-language journals. We also compare performance indicators such as number of papers (Nps) and citations (Ncs) for English and French writing skills. A significant correlation was found between English proficiency and publication output for English-language journals, but not Portuguese-, Spanish-, French-or German-language journals. Additionally, there was a correlation of writing skills in English (but not in French) with Nps and Ncs for publications in the Web of Science; higher Nps and Ncs were found for researchers with “good writing skills” in English. Our results suggest that a linguistic factor underlies the research performance of Brazilian researchers. Accordingly, other Latin American countries should assess the effect of this linguistic issue on their research communities. We propose to create a network of scientometricians, linguists and educators in Latin America to evaluate whether a similar trend prevails in other countries of the region.

Keywords: Authors, English, Language, Publications

? Markusova, V., Jansz, M., Libkind, A., Libkind, I. and Terekhov, A. (2009), A bibliometric study of Russian R&D on nanotechnology. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 354-358.

Abstract: Russia has a tradition of high-quality basic research on nanotechnology. A bilbiometric study confirmed that Russian R&D in this field is still strong, but the trend is that its positon is weakening. A patent search, concentrating on two major nanomaterials topics, fullerenes and nanotubes, revealed that there is a substantial basis for innovative applications, but also cause for concern.

Keywords: Nanotechnology, Science

? Shelton, R.D. and Foland, P. (2009), The race for world leadership of science and technology: Status and forecasts. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 369-380.

Abstract: The US and EU have been vying for leadership of science and technology; now they are being overtaken by the People’s Republic of China. The US is now leading in most input indicators, but the EU has taken the lead in important outputs. While the PRC remains behind in most indicators, its incredible progress from being underdeveloped during the Cultural Revolution to being a contender in this race is almost unprecedented. Qualitative assessment of fields of research and development, based on recent expert review studies, confirm that many Chinese labs have made rapid progress. Extrapolations from the current status and recent rates of change suggest that China will soon rival the others as a scientific superpower in many indicators. Further, a formal forecast of national publication shares can now be made, perhaps for the first time. The input to the model is a country’s share of world R&D investment. If current trends in investment continue, the US and EU are forecast to continue to decline, while the PRC is expected to near parity with them within ten years in the Science Citation Index. Some confirmation comes from other databases-China has already passed the US in Inspec and Compendex.

Keywords: China, EU, Indicators, System

? Aksnes, D.W. and Sivertsen, G. (2009), A macro-study of scientific productivity and publication patterns across all scientific and scholarly disciplines. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 394-398.

Abstract: The study includes all disciplines in the humanities, social sciences, health sciences, natural sciences and engineering at Norway’s four major universities (Oslo, Bergen, Trondheim, and Tromso). The study is based on a database containing complete data at the level of individuals for scientific/scholarly publishing at the higher education institutions in Norway in the three year period 2005-2007. The purpose of the study is to gain knowledge about differences between disciplines with regard to three parameters that are all known to be important when assessing and comparing publication output at universities: 1. The relative importance of publication types (articles in journals/series, articles in books, and books) 2. The degree of coverage of the publications output on ISI Web of Science 3. Average productivity and productivity differences among faculty staff.

? Bar-Ilan, J. (2009), Web of Science with the Conference Proceedings Citation Indexes - The case of computer science. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 399-409.

Abstract: In September 2008 Thomson Reuters added to the ISI Web of Science (WOS) the Conference Proceedings Citation Indexes in Science and in the Social Sciences and Humanities. This paper examines how this change affects the publication and citation counts of highly cited computer scientists. Computer science is a field where proceedings are a major publication venue. The results show that most of the highly cited publications of the sampled researchers are journal publications, but these highly cited items receive more than 40% of their citations from proceedings papers. The paper also discusses issues related to double-counting, i.e., when a given work is published both in a proceedings and later on as a journal paper.

Keywords: h-Index

? van Leeuwen, T.N. and Medina, C.C. (2009), Redefining the field of economics: Improving field normalization for the application of bibliometric techniques in the field of economics. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 410-420.

Abstract: Field normalization, and its effect of bibliometric indicators is a widely discussed topic among bibliometricians. It is not the necessity of field normalization around which the debate evolves, but the way how to field normalize bibliometric indicators. In this paper the authors present the results of a study in which publication data of a large disciplinary database in economics (EconLit) is combined with the multidisciplinary citation indexes produced by Thomson Scientific. Main purpose of the study is to investigate whether it would be possible to combine the classification scheme of the economics database with the advantages of the citation indexes (both multiple addresses and citation data), in order to improve the possible applicability of the citation indexes in research performance studies in the field of economics and its periphery. The authors show the starting points of both database, the outcome of the matching and combining of both sets of publications, the effects of EconLit field classification in terms of differences in impact levels. The study clearly shows that research performance exercises conducted in the field of economics would benefit from the labeling of publications in the citation indexes with a more detailed classification scheme as found in EconLit.

Keywords: Core Journals, Departments, Indicators, Performance, Publications, Rankings

? Zuccala, A. (2009), Poverty research in a science for development policy context. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 421-425.

Abstract: This study examines the state of poverty/hunger research 1975-2008 (ISI Web of Science) and relates this to the Netherlands Organisation for Scientific Research (NWO)-WOTRO Science for Global Development Strategy Plan 2007-2010. International studies concerning poverty/hunger (1975-2008) have grown steadily in the fields of Health & Medicine and Development & Planning since 1975, but the most impressive growth is in the field of Environmental Studies. We evaluate the Dutch scientific community’s contribution and propose a strategy for agenda setting and monitoring future problem-areas for new research.

Keywords: International

? Zhao, D. (2009), Does funded research have higher impact? *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 426-430.

Abstract: This paper reports a bibliometric study of the impact and characteristics of funded research in the library and information science (LIS) field as compared with non-funded research. It is found that the impact of funded research as indicated by citation counts was significantly higher than that of non-funded research. Funding of LIS research reported in core LIS journals was biased towards the information retrieval (IR) area, especially research on IR systems. Scholars from outside LIS contributed heavily to funded research.

Keywords: Information-Science, Journals, Scientific Collaboration

? Schneider, J.W. (2009), Mapping of cross-reference activity between journals by use of multidimensional unfolding: Implications for mapping studies. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 443-454.

Abstract: The present paper explores simultaneous modelling of cross-reference activity between journals by use of asymmetric proximities and multidimensional unfolding. We thereby model and map both citing and cited relations between journals in a common space. This enables a more comprehensive comparison of the journal’s dual roles of citing and being cited in a reference network. We examine the set of journals most often used to delimit information science in mapping studies, in order to demonstrate the need for exploratory data analyses. The general findings of the study include the ability of unfolding analysis to identify specialized journals and the influence of publication activity in mapping studies.

Keywords: Author Cocitation Analysis, Information-Science, Scientometric Transaction Matrices

? Schlogl, C. and Gorraiz, J. (2009), Global usage vs. global citation metrics using science direct pharmacology journals. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 455-459.

Abstract: In our study we investigate similarities and differences of usage and citation metrics for pharmacology journals using data from Science Direct, Web of Science and Journal Citation Reports. Our preliminary results show that the number of downloads have increased more than fivefold between 2001 and 2006. In our analyses at journal level we found a high correlation between citation and download frequencies but differences in obsolescence characteristics. Also the download patterns on a paper-by-paper basis for five journals reveal that articles published in recent years have the highest download requests immediately after they are available electronically. However, the age distribution is different for articles of older volumes which might be due to the strong increase in e-journal use during the investigation period. A more detailed analysis comparing monthly distributions of downloads and citations suggests that citations have an effect on downloads for highly cited papers even a few years after their publication.

Keywords: Information

? Rafols, I. and Leydesdorff, L. (2009), Content-based and algorithmic classifications of journals: Perspectives on the dynamics of scientific communication and indexer effects. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 460-471.

Abstract: The aggregated journal-journal citation matrix-based on the Journal Citation Reports (JCR) of the Science Citation Index-can be decomposed by indexers and/or algorithmically. In this study, we test the results of two recently available algorithms for the decomposition of large matrices against two content-based classifications of journals: the ISI Subject Categories and the field/subfield classification of Glanzel & Schubert (2003). The content-based schemes allow for the attribution of more than a single category to a journal, whereas the algorithms maximize the ratio of within-category citations over between-category citations. By adding categories, indexers generate between-category citations, which may enrich the database, for example, in the case of inter-disciplinary developments. Algorithmic decompositions, on the other hand, are more heavily skewed towards a relatively small number of categories, while this is deliberately counter-acted upon in the case of content-based classifications. Because of the indexer effects, science policy studies and the sociology of science should be careful when using content-based classifications, which are made for bibliographic disclosure, and not for the purpose of analyzing latent structures in scientific communications. Despite the large differences among them, the four classification schemes enable us to generate surprisingly similar maps of science at the global level.

Keywords: Interdisciplinarity, Map, Science

? Tsay, M.Y. (2009), The Relationship between journal self-citation and other scientometric data for some subjects of the social sciences. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 472-481.

Abstract: The present study analyzes and compares the journal self-citation (both self-citing rate and self-cited rate) and other scientometric data for journals of economics, psychology and political science from SSCI Journal Citation Reports on the Web 2005. The correlation between each of the nine pairs of two self-citation data and four kinds of scientometric data, i.e. source item, citation count, impact factor and cited half-life is examined based on the Pearson correlation tests. The Fisher’s Z-transform is employed to test the significant difference between the Pearson correlation coefficient for each pair of scientometric data from the three subject areas. The significance of mean difference of each scientometric data was examined by the Tukey tests within the ANOVA. The similarities and differences in scientometric data among the three disciplines are identified.

Keywords: Impact

? Mugnaini, R., Leta, J., Goldbaum, M., Castro, R.C.F., Tardelli, A.O. and Packer, A.L. (2009), The weight of local journals in Latin America and Caribbean research on epidemiology. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 482-486.

Abstract: The present study aims to measure the weight of Latin American and Caribbean (LA&C) journals in the regional research on epidemiology throughout the 1992-2006 period. The analysis was carried out upon the 304,875 articles retrieved from MEDLINE,. Bradford’s zones of dispersion were used to determine epidemiology core journals as well as to compare affiliation country and country of publication. Results were analyzed considering the total number of articles on epidemiology from the whole MEDLINE database and that authored by LA&C researchers. The analysis showed that regional research is been published in a larger number of journals in recent times. In the process of disseminating regional research on epidemiology, most of LA&C researchers seek domestic journals rather than international ones, probably due to regional similarities on cultural and social aspects as well as on health conditions. Such scenario suggests that LA&C researchers are exchanging more among themselves, thus, getting more knowledge (or at least, diffusing more) about shared conditions and problems.

Keywords: Bibliometric Analysis, Health

? Chen, Y.W., Yang, Z.P. and Fang, S. (2009), A comparative study on the biotechnology patents of CAS, China. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 528-537.

Abstract: The purpose of this article is to compare the biotechnology patent filing statistics of CAS to CNRS, MIT and MPI in DII covering a time period of 1985-2005 by scientometrics methods. The analysis was classified based on applications numbers, technical fields, times cited, countries, group intensity and associative intensity. This paper also introduced the Relative Intensity (RI) indicator to visualize the relative intensity of times cited, family members, inventors and associative intensity between assignees among the four institutions. As a result of this paper, although CAS had the largest number of patents applications among the four institutions, the strength of intellectual property protection of CAS was weaker than that of the other three institutions. Firstly, compared to CNRS, MIT and MPI, CAS had mainly paid its attention to its native land protection for its intellectual property but less in overseas. Although CAS had also applied the biotechnology patents in 24 countries, CAS’s average numbers per family was only 1.12, which was much lower than other three institutions. Secondly, the RI (ANA/N) indicated that the associative activity of CAS was worse than the other three institutions. These characters also had been found in the indicators of group intensity and times cited. We hope this paper could be effective for the CAS to make powerful measures to prompt its biotechnology innovations capabilities and broaden its global protection strength.

Keywords: Examiner Citations, Knowledge Flows

? Yuan, J.P., Yue, W.P., Su, C., Wu, Z., Pan, Y.T., Ma, N., Hu, Z.Y., Shi, F., Yu, Z.L. and Wu, Y.S. (2009), Patent activity on water pollution and treatment in China - A scientometric perspective. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **1**, 538-542.

Abstract: This research intends to study the patent activity on water pollution and treatment in China. Data were collected from Derwent World Patents Index between 1985 and May 2008. Total volume of patents, technology focus, assignee sector, and the comparison with triadic patents are analyzed. It is found that patents on water pollution and treatment applied in China has grown by 200-fold. However, the number of high quality triadic patents with priority country of China remains small. Nevertheless, China’s technology focuses on water pollution and treatment seem to parallel global and triadic patent trends. Furthermore, except for individual patent assignees, both Chinese universities and enterprises play an important role in patent activity of water pollution and treatment. This research provides a comprehensive picture of China’s innovation capability in the area of water pollution and treatment. It will help China’s local governments to increase their regional S&T capability and will provide support to strengthen strategic planning and science decision-making in China.

? Lin, D.M., Chen, C.M. and Liu, Z.Y. (2009), Statistical characteristics of an evolving co-citation network: The distribution of betweenness centrality. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 552-560.

Abstract: We investigate statistical characteristics of an evolving co-citation network, primarily in term of the dynamics of betweenness centrality measures, we generate co-citation network of papers published in journal of Scientometrics. Our study shows that the overall co-citation network is a small-world and scale-free network. The co-citation network has a relatively small number of nodes with high betweenness centrality, most nodes have low betweeness centrality scores. Furthermore, the betweenness centrality distribution of the co-citation network follows segmented Zipf-Pareto distribution. We found a tendency that high betweenness centrality measures tend to reduce over time.

Keywords: Algorithm, Science, Scientific Literature, Word Analysis

? Lariviere, V., Macaluso, B., Archambault, E. and Gingras, Y. (2009), Which scientific elite? On the concentration of funding, productivity and citations. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 576-586.

Abstract: Using a very large population of university professors and researchers (N= 13,479), this paper analyses the concentration of funding, papers and citations at the level of individual researchers. It shows that each of these distributions is different: citations being the most concentrated, followed by funding, papers published and finally number of funded projects. Concentration measures also vary between fields, social sciences and humanities being generally the most concentrated. The paper also shows that the correspondence between the elites defined by each of these measures is limited. In fact, only 3.2% of the researchers are in the top 10% on all indicators, while about 20% are in the top 10% in at least one of the indicators. The paper concludes with a discussion on the causes of these observed differences and formulates a few hypotheses.

Keywords: Bibliometric Indicators, Humanities, Ortega Hypothesis, Publication, Social-Sciences

? Larsen, P.O. and von Ins, M. (2009), The steady growth of scientific publication and the declining coverage provided by Science Citation Index. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 597-606.

Abstract: The growth rate of scientific publication has been studied from 1907 to 2007 using available data from a number of databases, including the expanded version of the Science Citation Index (SCIE). Traditional scientific publishing, that is publication in peer-reviewed journals, is still increasing although there are big differences between fields. There are no indications that the growth rate has decreased in the last fifty years. At the same time publication using new channels, for example conference proceedings, open archives and home pages, is growing fast. The growth rate for SCIE is smaller than for comparable databases. This means that SCIE is covering a decreasing part of the traditional scientific literature. There are also clear indications that the coverage of SCIE is especially low in some of the scientific areas with the highest growth rate, including computer science and engineering sciences. The role of conference proceedings, open access archives and publications published on the net is increasing, especially in scientific fields with high growth rates, but this is only partially reflected in the databases. It is therefore problematic that SCIE has been used and is used as the dominant source for science indicators based on publication and citation numbers.

Keywords: Google Scholar

? Borner, K., Huang, B.N., Linnemeier, M., Duhon, R.J., Phillips, P., Ma, N.N.L., Zoss, A., Guo, H.N. and Price, M.A. (2009), Rete-Netzwerk-Red: Analyzing and visualizing scholarly networks using the network workbench tool. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 619-630.

Abstract: The enormous increase in digital scholarly data and computing power combined with recent advances in text mining, linguistics, network science, and scientometrics make it possible to scientifically study the structure and evolution of science on a large scale. This paper discusses the challenges of this `BIG science of science’ - also called `computational scientometrics’ research - in terms of data access, algorithm scalability, repeatability, as well as result communication and interpretation. It then introduces two infrastructures: (1) the Scholarly Database (SDB) (http://sdb.slis.indiana.edu), which provides free online access to 20 million scholarly records papers, patents, and funding awards which can be cross-searched and downloaded as dumps, and (2) Scientometrics-relevant plug-ins of the open-source Network Workbench (NWB) Tool (http://nwb.slis.indiana.edu). The utility of these infrastructures is then exemplarily demonstrated in three studies: a comparison of the funding portfolios and co-investigator networks of different universities, an examination of paper-citation and co-author networks of major network science researchers, and an analysis of topic bursts in streams of text. The paper concludes with a discussion of related work that aims to provide practically useful and theoretically grounded cyberinfrastructure in support of computational scientometrics research, practice, and education.

? Strotmann, A., Zhao, D.Z. and Bubela, T. (2009), A multi-database approach to field delineation. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 631-635.

Abstract: Bibliometric studies have long relied on single citation databases as data sources for their field delineation phase, although a few have gone so far as to compare results obtained through the use of several databases separately. In this paper we report on an effort to systematically combine a number of databases to collect metadata records for the literature that defines a research field. In three case studies, we have combined information retrieved from PubMed with metadata from Scopus, and employed the NCBI Entrez Genes database to delineate research areas. At the core of the multi-database field delineation approach that we describe are: first, a method for matching full records back and forth between the Scopus and PubMed databases (95% or higher match rate) augmented by a method for matching Scopus cited references to PubMed records (90% success rate); and second, the wealth of information and services available from NCBI that is connected to individual PubMed records through its various Entrez database connections. Our approach allows us to combine strengths and overcome weaknesses of multiple databases, for an excellent coverage of the target area - interdisciplinary biomedical research.

? Russell, J.M., Ainsworth, S. and az-Aguilar, J. (2009), Visibility in internet of the scientific production and activities of the National Autonomous University of Mexico (UNAM) Research Institutes. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 675-686.

Abstract: In the present study we determine to what extent the scientific production and research activities of a group of National Autonomous University of Mexico (UNAM) research institutes in the sciences, social sciences and humanities are visible on the Internet. We do this by analysing the relevant information content and dynamics on their websites and by comparing institutional listings of scientific production between 2005 and 2006, with papers reported in the international, multidisciplinary online services of the Web of Science and Scopus, as well as in Clase and Periodica which cover production in Latin American journals. Findings indicate general poor visibility of research activities and production in the institutional websites with only limited access to full text articles. Websites of the institutes in the sciences score better than those in the humanities and social sciences where book publication is an important research output. Official publication lists in the form of annual reports were found not to accurately represent production with additional papers attributed to the different institutions appearing in commercial databases. It is suggested that more effort should be directed towards improving the information content and access to research data on these institutional websites, possibly through linkage to an UNAM repository.

? Arencibia-Jorge, R. and de Moya-Anegon, F. (2009), Cuban scientific production in SCOPUS 1996-2007: A scientometric approach using the Scimago journal & country rank. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 687-691.

Abstract: The current paper presents a scientometric study of the Cuban scientific production in SCOPUS during the period 1996-2007, using socio-economic indicators combined with the bibliometric indicators supported by the SCImago Journal & Country Rank. The results presented in this paper confirmed the possibility to use SCOPUS to obtain an objective picture of the Cuban Science behaviour during the last twelve years. The SCImago Journal & Country Rank, in this case, offered an important set of indicators. The combination of these indicators with those related to socio-economic aspects of activities in Science and Technology, allow the authors to present the state and evolution of the Cuban Science system during the period 1996-2007. Although is too early to draw any definitive conclusion about the behaviour of the indicators, the research observed an increasing growth of the Cuban scientific production during the whole period analyzed, which is in correspondence to the country efforts and expenditures in Research and Development activities.

Keywords: Science, Scopus

? Ingwersen, P. (2009), Brazil research in selected scientific areas: Trends 1981-2005. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 692-696.

Abstract: The paper analyses the general development of research in Brazil, 1981-2005 and compares to Mexico, Republic of South Africa (RSA) and the world. Publications from 15 research areas and their citations are analyzed for the three countries covering two five-year periods 1996-2005. The paper applies publication growth as well as Citedness and Field Crown Indicators (FCI). Results show that across all research fields, including the Social Sciences, from 1996 the absolute citation impact of Brazil and Mexico are alike, steadily increasing, and just below that of RSA. Publication growth patterns for Brazil and Mexico are identical, with a vast increase since 1991. In contrast, RSA follows the global growth rate. From 1996 to 2005 both Latin American countries almost doubles their research publications in English, probably influencing the growth in relative citation impact, as measured by FCI analyses across the 15 selected areas (Brazil FCI 1996-00: .44; 2001-05:.63; Mexico FCI 1996-00: .58; 2001-05:.64). Simultaneously the publication profile of Brazil becomes more global, whilst Mexico’s and RSA’s profiles become isolated. Citedness analyses show a significant correspondence to the FCI developments of Brazil, Mexico and RSA.

Keywords: Bibliometric Analysis, Science

? Basu, A. (2009), A bibliometric overview of current publications by overseas Indians using searches based on some common Indian names. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 697-701.

Abstract: Highly educated Indians in science, medicine and engineering have migrated to other countries over several years. Many, currently engaged in research in their adopted countries, could constitute a potential knowledge resource for India that has not been adequately mapped. The country of origin of diaspora authors can be correctly identified through characteristic ethnic names, unique to the country of origin. The large number of ethnic names poses a challenge for complete retrieval, and omissions are inevitable. Using 50 commonly occurring Indian names, we have retrieved a large sample of 23723 Indian diaspora documents indexed in SCI-E for 2007. Names not unique to India were dropped. These 50 names successfully retrieved 53.6% of the SCI-E output from India in 2007. Analyzing by document type, research area, and country/institution of location/collaboration we get a bibliometric overview of current publications by overseas Indians, and compare with broad characteristics of Indian publications. We infer that current publication output of overseas Indians (of which 65% is from the US) could be of the same order as that from India, but with significant differences in the emphasis on research areas. Many authors are either located in, or collaborating with prestigious foreign institutions, primarily in the US.

Keywords: Science

? Mahbuba, D. and Rousseau, R. (2009), Scientific research in the Indian subcontinent: Comparing Bangladesh, Pakistan and Sri Lanka with India. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 702-713.

Abstract: As part of a research program to analyse research in Bangladesh we provide a comparison between research indicators related to India, Bangladesh, Pakistan and Sri Lanka. In this investigation we make use of Web of Science (WoS) data as well as Scopus data (using the SCImago website). It is shown that the number of publications of these countries is sometimes best described by an exponential curve, sometimes a power law and sometimes a linear relation. Special attention is given to the evolution of country h-indices. It is shown that in relative terms Sri Lanka is the strongest country of the four.

Keywords: Asia, Collaboration, Science

? Hayashi, C.R.M., Rothberg, D. and Hayashi, M.C.P.I. (2009), E-Democracy and certified scientific knowledge in Brazil: Applied scientometrics to assess health policy debate. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 714-718.

Abstract: Innovations such as online public consultations denote a promising advance, but with results which have not been properly studied up to this moment in Brazil. One of the goals of this research in progress is to assess the usage of certified scientific knowledge to sustain perspectives both from the Brazilian government, in the documents on health policies subjected to consultation from 2003 to 2008, and from the comments posted by contributors, with a Bibliometrics / Scientometrics study to verify ranking, frequency and distribution of sources and show areas of greater interest to government branches, individuals, institutions and social groups. The analysis has counted so far 278 citations of scientific works published from 1948 to 2008; 60% (167) of them referred to works published in the last 9 years (2000-2008). The citation of fresh scientific achievements seemed to be preferred as a way of giving credibility to an argument in online debates created by tools of digital democracy. Books, book chapters and journal articles represent 67% (186) of the sample, which indicates that the usual means of academic scientific communication were preferred, rather than official sources. English was the language of the majority of the cited journal articles.

Keywords: Bibliometrics

? Sandstrom, U. (2009), Cognitive bias in peer review: a new approach. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 742-746.

Abstract: The concept of cognitive similarity, developed by Travis and Collins (1991), is the starting point for this paper. We suggest that cognitive similarity is detectable through bibliometric analysis using bibliographic coupling (Kessler, 1963) or, as an alternative, noun phrases in title and abstract. Connected to this hypothesis is the possibility of cognitive bias in peer review. If academics tend to give higher scores to research with which the reviewer has a cognitive similarity there is a situation of cognitive bias. The design of the research project is described and the data sources available are discussed. With data on applicants and reviewers, and complemented with bibliometric identification of each individuals publications, this project will potentially give an essential contribution to our understanding of the peer review process.

Keywords: Assessments, Bibliometric Analysis, Decisions, Nepotism, Review, Science

? Levitt, J.M., Thelwall, M. and Oppenheim, C. (2009), Is the higher citation of collaborative research the same in every country: A case study of economics. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 759-763.

Abstract: Many studies have found a positive association between high citation and collaboration, in that collaborative research is in general more highly cited than non-collaborative research. This paper describes an investigation into the extent to which the association between high citation and collaboration for Economics articles published in 2000 varies from country to country and depends on the choice of indicator of citation level. Using data from the Social Science Citation index (SSCI), it compares for 18 countries and 4 indicators of citation level the citation levels of the collaborative articles with the citation levels of the non-collaborative articles. The main findings are that: (a) for every country and every indicator the citation level of the collaborative articles is at least as high as that for the non-collaborative articles, (b) for each indicator there is considerable variation in the extent to which collaborative articles are more highly cited than the non-collaborative articles, and (c) for some countries the extent to which the collaborative articles are more highly cited varies very substantially from indicator to indicator.

Keywords: Articles, Citation Index, Indicators, Networks, Science

? Penteado, R.D. and Avila, A.F.D. (2009), A scientometric analysis of Embrapa’s Brazil Web of Science articles from 1977 to 2006. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 786-797.

Abstract: This article studies, using the technique of bibliometrical analysis, Brazilian Agricultural Research Corporation - Embrapa’s research centers participation in the journals that were indexed in the Web of Science (WOS) database, from 1977 to 2006. First we analyze the performance of the research centers, followed by the journals which published these articles and finally the partnerships with the institutions that had carried out this scientific work with Embrapa. The results indicated that Embrapa is among the top ten Brazilian institutions to lead in the volume of scientific articles published in indexed WOS journals. They also indicate the relevance of the adoption of a goals and results system by an institution of Sc,T&I and the need to select strategies to establish partnerships, select journals in accordance with the institutional stated mission and standardize theirs authors affiliations, in order to facilitate the identification and improve their scores.

? Ajiferuke, I. and Wolfram, D. (2009), Citer analysis as a measure of research impact: Library and information science as a case study. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 798-808.

Abstract: The investigators studied author research impact using the number of citers an author’s research is able to attract, as opposed to the more traditional measure of citations. A focus on citers provides a complementary measure of an author’s reach or influence in a field, whereas citations, although possibly numerous, may not reflect this reach, particularly if many citations are received from a small number of citers. In this exploratory study, Web of Science was used to tally citer and citation-based counts for 25 highly cited researchers in information studies in the United States and 26 highly cited researchers from the United Kingdom. Outcomes of the tallies using several different measures, including an introduced ch-index, were used to determine whether differences arise in author rankings when using citer-based versus citation-based counts. The findings indicate a strong correlation between some citation and citer-based measures, but not with others. The findings of the study have implications for the way authors’ research impact may be assessed.

Keywords: Citation Analysis, h-Index, Ideas

? Meneghini, R. and Packer, A. (2009), The extent of multidisciplinary authorship of articles on scientometrics and bibliometrics in Brazil. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 809-816.

Abstract: The publications in scientometrics with Brazilian authorship expanded exponentially in the 1990-2006 period, reaching 13 times in the Web of Science database and 19.5 times in the Google Scholar database. This increase is rather superior to that of the total Brazilian scientific production in the same time period. Some characteristics to be noticed in this rise are: (1) the total number of articles during this period was 197; in that, 78% were published in 57 Brazilian journals and 22% in 13 international journals; (2) the national and international articles averaged 4.3 and 5.9 citations/article, respectively. Two journals stood out among these - the national Ciencia da Informacao and the international Scientometrics; (3) the articles encompass an impressive participation of authors from areas other than information science. The occurrence of adventitious authors at this level of multidisciplinarity is uncommon in science. However, the possible benefits of such pattern are not clear in view of a fragmented intercommunication among the authors, as noticed by the citations. The advantages of improving the intercommunicability among authors and of using other scientometric and bibliometric databases, such as SciELO, to avoid an almost exclusive use of the Web of Science database, are discussed.

Keywords: Bibliometrics, Publication, Science

? Costas, R., van Leeuwen, T.N. and Bordons, M. (2009), A bibliometric methodology for supporting research assessment at individual level: A classification approach. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 817-828.

Abstract: This paper describes a general methodology for conducting bibliometric analyses at the micro-level. It combines several indicators grouped into three factors or dimensions which describe different aspects of scientific performance. Different profiles of scientists are described according to their research performance in each dimension. Some results based on the outcomes of the methodology applied to the study of CSIC scientists in three thematic areas in Spain are presented. The main advantages and possibilities of the methodology for supporting research assessment and management are pointed out. The classification approach proposed can be a useful tool for exploring potential determinants of research success.

Keywords: Databases, h-Index, Impact, Indicators, Micro Level, Output, Productivity, Program, Scientific Performance, System

? Schiebel, E. and Gorraiz, J. (2009), How to organize a conference using bibliometrics? *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 829-840.

Abstract: The success of the organization of an international conference depends in a big extent on a considerable number of controversial decisions. Many of them are taken considering expert opinions, but some others are still based on more or less subjective criteria. In this study, we suggest and document that the inclusion of bibliometric and scientometric methods does not only facilitate the organization of a conference but also contribute to support and legitimate the decisions taken by its organizers. Bibliometric indicators and methods improve the quality of the selection process and introduce a broader view for the application of consolidated criteria. Additionally, mapping techniques appear as very adequate instruments for the assignment of contributions to the reviewers and for the compilation of the sessions resulting in the final programme. Finally, we recommend their use in the organization of conferences independent of their subject.

Keywords: Bibliometrics

? Glaser, J. and Laudel, G. (2009), Identifying individual research trails. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 841-845.

Abstract: This paper reports the development of bibliometric methods for the analysis of individual research trails. The demand for such methods arose in projects that used qualitative interviews for obtaining data on the content of the interviewee’s research. The part of the interview that explores the evolution of the interviewee’s “research trail” - the sequence of topics addressed and methods used as it unfolds over time-can be based on bibliometric analyses of the oeuvre of the interviewee. For fields with sufficient ISI coverage, all publications by an interviewee were downloaded and their reference lists automatically searched for shared references and self-citations. In fields with insufficient ISI coverage, title and abstract keywords were identified and compared. On the basis of this information, networks were drawn manually by adding links according to decreasing strength until most publications were linked but clusters could still be distinguished. The resulting networks fulfilled their role as stimuli for discussions about interviewees’ research biographies. Although the networks did not need to be correct in order to stimulate responses, many of them were. Together with the interview process, the networks enabled the identification of actual and latent research trails. Currently, the analysis of oeuvres with latent semantic analysis is tested. The resulting networks will be compared to the results of bibliographic coupling and to the information obtained from interviews.

? Sandstrom, U. and Sandstrom, E. (2009), Meeting the micro-level challenges: Bibliometrics at the individual level. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 846-856.

Abstract: The aim of this paper is to demonstrate a method for bibliometric evaluation of individuals, i.e. research staff currently employed within a university department or other knowledge organisations with research purposes. Based on methods for citation analysis and methods for clustering of papers into research lines (using bibliographic coupling) we present an analysis of one researcher in three dimensions: 1) publication and citation indicators; 2) publication profile, and 3) research lines. One of the features of the method is the benchmark against other researchers within the same research line, i.e. researchers that use the same references and, accordingly, are active in the same field of research. The paper suggests this method as a means to avoid the fallacies of evaluation solely dependent on sub-field categories in the Web of Science in advanced citation analysis. The method was used in a Research Assessment Exercise accomplished in the autumn of 2008 at Royal Institute of Technology.

Keywords: Bibliometrics, Citation, Indicators, Research-Front

? Ahlgren, P. and Colliander, C. (2009), Textual content, cited references, similarity order, and clustering: An experimental study in the context of science mapping. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 862-873.

Abstract: This paper deals with document-document similarity approaches, the issue of similarity order, and clustering methods, in the context of science mapping. Using two data sets of bibliographic records, associated with the fields of information retrieval and scientometrics, we investigate how well two document-document similarity approaches, a text-based approach and bibliographic coupling, agree with ground truth classifications (obtained by subject experts), under first-order and second-order similarities, and under four different clustering methods. The clustering methods are average linkage, complete linkage, Ward’s method and consensus clustering. The performance of first-order and second-order similarities is compared within the two document-document similarity approaches, and under each clustering method. We also compare the performance of the clustering methods. The results show that the text-based approach consistently outperformed bibliographic coupling with regard to the information retrieval data set, but performed consistently worse than the latter approach regarding the scientometrics data set. For the similarity order issue, second-order similarities performed better than first-order in 12 out of 16 cases. Average linkage had the best overall performance among the clustering methods, followed by consensus clustering. The main conclusion of the study is that second-order similarities seem to be a better choice than first-order in the science mapping context.

Keywords: Classification, Information-Science

? van Eck, N.J. and Waltman, L. (2009), VOSviewer: A computer program for bibliometric mapping. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 886-897.

Abstract: We present VOSviewer, a computer program that we have developed for constructing and viewing bibliometric maps. VOSviewer combines the VOS mapping technique and an advanced viewer into a single easy-to-use computer program that is freely available to the bibliometric research community. Our aim in this paper is to provide an overview of the functionality of VOSviewer and to elaborate on the technical implementation of specific parts of the program.

Keywords: Computational Intelligence Field, Graphs, Maps, Pathfinder Networks, Science

? Aleixandre-Benavent, R., onso-Arroyo, A., Bolanos-Pizarro, M., Gonzalez-Alcaide, G. and Valderrama-Zurian, J.C. (2009), Eponymy in bibliometric language. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 898-899.

? Carlsson, H. and Noyons, E.C.M. (2009), Field delineation using medical subject headings (MeSH) - An alternative way to aggregate data in the Web of Science. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 914-915.

Abstract: Field delineation is important in bibliometrics. Particularly when measuring scientific performance, the demarcation of the area, to which a science actor belongs, is of the greatest importance. This paper present a method based on searches on Boolean combinations of medical subject headings (MeSH-terms) in a combined Web of Science (WoS)-Medline database. The construction of the MeSH area definitions is described and recall is discussed and compared to other methods.

Keywords: Bibliometrics

? Fachin, G.R.B. and dos Santos, R.N.M. (2009), Scientific communication and ontology: A bibliometric analysis of the library and Information Science Abstracts (LISA). *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 926-927.

? Laurens, P., Cadiou, Y. and Larrue, P. (2009), ISSI2009 Bibliometric profiling of participants of the sixth framework programme for research and technological development (FP6) of the European Union. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 956-957.

? Laville, F., Topin, J.C., Roth, C. and Sechet, P. (2009), Combining bibliometric issues and descriptive information to produce a database of national ST&I systems: The curie plus approach. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 960-961.

? Lewison, G. (2009), Financial acknowledgements on the Web of Science: A new resource for bibliometric analysis. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 968-969.

? Rummler, G. (2009), Characterizing the dissemination of “bibliometrics” in Brazilian biomedical journals from 1992 to 2007. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 988-989.

Keywords: Diffusion

? Strehl, L. and Stumpf, I.R.C. (2009), The impact of Brazilian scientific articles published in domestic and foreign journals indexed in Web of Science. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 994-995.

? Tunger, D. and Haustein, S. (2009), Bibliometric analysis of the Asia-Pacific research area: Issues and results. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 996-997.

? Waltman, L. and van Eck, N.J. (2009), A taxonomy of bibliometric performance indicators based on the property of consistency. *Proceedings of ISSI 2009: 12th International Conference of the International Society for Scientometrics and Informetrics*, **2**, 1002-1003.

Keywords: Index

# Title: 2008 IEEE International Conference on Management of Innovation and Technology

Full Journal Title: 2008 IEEE International Conference on Management of Innovation and Technology

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Subject Categories:

: Impact Factor

? Gerdsri, N. and Daim, T.U. (2008), Generating intelligence on the research and development progress of emerging technologies using patent and publication information. *2008 IEEE International Conference on Management of Innovation and Technology*, **1-3**, 1-6.

Abstract: It is critical for technology-driven organizations to have access to intelligence on the progress of research and development (R&D) in public or private laboratories. Technology forecasting methods can be useful in these cases if there is a history of performance. However the traditional forecasting methods can not be used effectively for predicting the prospects of emerging technologies as historical information for any particular emerging technology is limited due to the short time of its appearance. The bibliometric and patent analysis approach presented in this paper allows researchers to generate intelligence on emerging technologies supported by the wealth of today’s public electronic information database. Furthermore, this paper also emphasizes the needs for technology managers to be aware of a time lag among different scientific indicators.

Keywords: Access, Analysis, Approach, Bibliometric, Bibliometric Analysis, Bibliometrics, Cases, Database, Database Tomography, Development, Emerging, Emerging Technologies, Forecasting, History, Impact, Indicators, Industry, Information, Innovation, Intelligence, Managers, Methods, Needs, Opportunities, Organizations, Patent, Patent Analysis, Performance, Progress, Public, R&D, R&D Management, Research, Research and Development, Science, Technological Intelligence, Technologies, Technology, Technology Forecasting, Time, US, Wealth

# Title: 8th International Conference on Scientometrics and Informetrics

Full Journal Title: 8th International Conference on Scientometrics and Informetrics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Journal Country/Territory:

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Subject Categories:

: Impact Factor

? Glanzel, W. and Moed, H.F. (2001), Journal impact measures in bibliometric research: A state-of-the-art report. *8th International Conference on Scientometrics and Informetrics, Vols 1 and 2 - Issi-2001, Proceedings*, 3-5.

Keywords: Bibliometric, Bibliometric Research, Impact, Research

# Title: 2007 International Conference on Wireless Communications, Networking and Mobile Computing

Full Journal Title: 2007 International Conference on Wireless Communications, Networking and Mobile Computing

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ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wang, X.G., Ma, F.C., Wang, J.C. and Hu, C. (2007), The “small-world” characteristic of author co-words network. *2007 International Conference on Wireless Communications, Networking and Mobile Computing*, **1-15**, 3717-3720.

Abstract: The co-words network of the author key words is a knowledge network mapped according to the co-occurrence phenomenon of key words in a number of papers. It reflects the relation among multiple vocabulary conceptions and also represents the structure of scientific research, With the social network analysis technology, the structural analysis of co-words network showy that the average distance is 2.814 and the clustering coefficient is 0.735, demonstrating the obvious existence of small-world characteristic.

Keywords: Author Keywords, Clustering, Co-Occurrence, Co-Words Network, Knowledge, Knowledge Network, Network Analysis, Research, Scientific Research, Small-World, Social Network Analysis, Technology, Vocabulary

# Title: 2008 4th International Conference on Wireless Communications, Networking and Mobile Computing

Full Journal Title: 2008 4th International Conference on Wireless Communications, Networking and Mobile Computing

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ISBN:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhong, Q.Y. and Song, J. (2008), The developing trend research of knowledge management overseas based on word frequency analysis. *2008 4th International Conference on Wireless Communications, Networking and Mobile Computing*, **1-31**, 11529-11532.

Abstract: This paper draws on word frequency analysis, a bibliometric methodology to examine KM research overseas from 1990 to 2006 and to study the developing trend of knowledge management. The results reveal that the intellectual structure has five aspects including management strategy, organizational change, process, technology and application; currently, researchers are focusing on sustained competitive advantage and organizational performance; but the future topics would be more focus on dynamic capabilities, competitive advantage, absorptive capacity and strategic alliances.

Keywords: Alliances, Analysis, Application, Bibliometric, Capabilities, Capacity, Change, Competitive, Competitive Advantage, Developing, Developing Trend, Dynamic, Intellectual Structure, KM, Knowledge, Knowledge Management, Management, Methodology, Organizational, Organizational Change, Organizational Performance, Overseas, Performance, Process, Research, Research Focus, Strategic, Strategy, Structure, Technology, Trend

# Title: IEEE Transactions on Engineering Management

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JCR Abbreviated Title:

ISSN:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kostoff, R.N. and Scaller, R.R. (2001), Science and technology roadmaps. *IEEE Transactions on Engineering Management*, **48** (2), 132-143.

Full Text: [2001\IEEE Tra Eng Man48, 132.pdf](2001/IEEE%20Tra%20Eng%20Man48,%20132.pdf)

Abstract: Science and technology (S&T) roadmaps are used in industry, government, and academia to portray the structural relationships among science, technology and applications. Roadmaps are employed as decision aids to improve coordination of activities and resources in increasingly complex and uncertain environments. Specific uses of roadmaps include: S&T management including strategy, planning, executing, reviewing, and transitioning; S&T marketing; enhancing communications among researchers, technologists, product managers, suppliers, users, and other stakeholders; identifying gaps and opportunities in S&T programs; and identifying obstacles to rapid and low-cost product development. S&T managers also use roadmaps to help identify those S&T areas that have high potential promise, and to accelerate the transfer of the S&T to eventual products, However, there has been little attention paid to the practice of roadmapping in the published literature. This paper is a first attempt to bring some common definition to roadmapping practices and display the underlying unity of seemingly fragmented roadmap approaches. The paper begins with generic roadmap definitions, including a taxonomy of roadmaps that attempts to better classify and unify the broad spectrum of roadmap objectives and uses. Characteristics of retrospective and prospective roadmaps are then identified and analyzed, as well as summary characteristics of bibliometric-based S&T mapping techniques. The roadmap construction process, including fundamental principles for constructing high-quality roadmaps, is presented in detail.

Keywords: AIDS, Characteristics, Communications, Construction, Decision, Development, First, Literature, Management, Mapping, Marketing, Planning, Potential, Practice, Practices, Principles, Prospective, Roadmaps, Science, Stakeholders, Taxonomy, Techniques, Technology

# Title: Information Visualization

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Journal Country/Territory:

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Publisher Address:

Subject Categories:

: Impact Factor

? Chinchilla-Rodriguez, Z., Vargas-Quesada, B., Hassan-Montero, Y., Gonzalez-Molina, A. and Moya-Anegon, F. (2010), New approach to the visualization of international scientific collaboration. *Information Visualization*, **9** (4), 277-287.

Abstract: In this study, visual representations are created in order to analyze different aspects of scientific collaboration at the international level. The main objective is to identify the international facet of research by following the flow of knowledge as expressed by the number of scientific publications, and then establishes the main geographical axes of output, showing the interrelationships of the domain, the intensity of these relations, and how the different types of collaboration are reflected in terms of visibility. Thus, the methodology has a twofold application, allowing us to detect significant differences that help characterize patterns of behaviour of a geographical system of output, along with the generation of representations that serve as interfaces for domain analysis and information retrieval. Information Visualization (2010) 9, 277-287. doi:10.1057/ivs.2009.31; published online 3 December 2009.

Keywords: Analysis, Bibliometric Indicators, Citations, Co-Authorship, Cooperation, Growth, Impact Factor, Index, Indicators, Information Retrieval, Information Visualization, International Collaboration Networks, Output, Patterns, Publications, References, Research, Research Performance, Science, Scientific Collaboration, Scientific Publications, System, Universities

# Title: 2007 11th International Conference on Information Visualization

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JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

: Impact Factor

? Saka, A. and Igami, M. (2007), Mapping modern science using co-citation analysis. *2007 11th International Conference on Information Visualization*, 427-432.

Abstract: Bibliometric analysis is used as a measuring activity technique for basic research. There are many country level analyses of trends in scientific publications. These analyses give us an understanding of the macro-scale character of scientific activities. However, it is difficult to capture the qualitative evolution of scientific activities through them. In this regard, a meso-scale analysis of science activities, i.e., analysis of “research areas”, is suitable for grasping qualitative changes in scientific activities. In this study, we develop a new method for mapping science at the research area level. Our method consists of two parts: constructing research areas from scientific publications and content analysis by experts. Research areas are explored through a co-citation analysis, and a map of science was generated to analyze how research areas relate to each other. This method contributes to endeavours to understand and track the changing nature of science.

Keywords: Analysis, Bibliometric Analysis, Changes, Co-Citation, Co-Citation Analysis, Cocitation, Evolution, Publications, Qualitative, Research, Science, Scientific Publications, Trends, Understanding

? LaRowe, G., Ichise, R. and Borner, K. (2007), Analysis of Japanese information systems co-authorship data. *2007 11th International Conference on Information Visualization*, 433-438.

Abstract: This paper reports a bibliometric analysis of evolving co-author networks. Using 5,009 articles covering the years 1993 to 2005 from Transactions D. (Information Systems) of the Institute of Electronics Information and Communication Engineers (IEICE), we attempt to compare the network characteristics for each year, the co-author network characteristics for the entire time span, and the four major components of the entire data set. Finally, we analyze each of these in contrast to extant co-authorship network data and find that the pattern of co-authorship within Information Systems does not change significantly over this time period.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Co-Authorship, Coauthorship, Information, Information Systems, Network

# Title: 2007 International Conference on Management Science and Engineering

? Luan, C., Hou, H., Wang, X. and Liu, Z. (2007), Study on the structure of inventors’ collaboration networks in the field of international digital information transmission in 2006. *2007 International Conference on Management Science and Engineering*, 71-78.

Abstract: Scientometric study on international inventors’ collaboration networks in the technological field of digital information transmission is investigated at the level of individuals by using bibliographic data of all patent documents published in Derwent Innovation Index (DII) retrieved from Web of Knowledge (WOK) in 2006. Combined analysis of social network analysis (SNA), co-occurrence analysis and cluster analysis is explored to reveal: (1) The higher the NrmNetwork Centralization of a network is, the lower the average output of the inventors is in the inventors’ collaboration network in the technological field of digital information transmission (DIT); (2) Generally, the less components there are in a network, the higher average output of the inventors in the network is; (3) Generally, the bigger scale of a connecting network is, the higher average output of the inventors is in DIT; (4) The shorter the average distance of a network is, the higher the average output of the inventors in the network is; (5) It is concluded that the suitable density of the networks is good for the inventors to improve their output.

Keywords: Analysis, Cluster Analysis, Collaboration, Collaboration Networks, Information, International, Network, Network Analysis, Patent, Social Network Analysis, Structure

? Wang, J., Huang, L., Li, J. and Lu, W. (2007), An integrated method for commercialization potential evaluation of emerging technology based on TFA. *2007 International Conference on Management Science and Engineering*, 2140-2145.

Abstract: Emerging technologies pose considerable challenges for classical technology assessment. Decision-making more and more requires the information on the potential consequences of the advent of new technologies before they are widely industrialized. So technology forecasting experts have already achieved the mutual recognition of the commercialization potential evaluation of emerging technologies should be operated at the early stages. This paper proposes an integrated method for commercialization potential evaluation of emerging technologies by using technology future analysis. The proposed integrated method combined the subjective judgment and objective perspectives, which is to make the primary selection of large amount of emerging technology options using the tools for the subjective judgment, such as, nominal group analysis; ANP, and the stakeholder analysis; then, to provide reasoning via objective facts for emerging technologies selected at the primary stage using the tools for the objective judgment, such as, bibliometrics analysis and patent analysis. The overall framework and detailed procedures are illustrated at last.

Keywords: Analysis, Assessment, Bibliometrics, Emerging Technologies, Evaluation, Forecasting, Framework, Information, Patent, Patent Analysis, Potential, Primary, Procedures, Reasoning, Technologies, Technology, Technology Assessment

# Title: 7th International Conference on Wetland Systems for Water Pollution Control

Dierks, S. (2000), Investigation of copper adsorption to peat using the simple metal sorption model. *7th International Conference on Wetland Systems for Water Pollution Control*, Lake Buena Vista, Florida, USA, November 11-16, 2000.

Full Text: [I\Int Con Wet Sys Wat Pol Con, 1.pdf](I/Int%20Con%20Wet%20Sys%20Wat%20Pol%20Con,%201.pdf)

# Title: International Congress on Advances in Nonimpact Printing Technologies ISandT’S Eleventh International Congress on Advances in Non-Impact Printing Technologies ISandT Final Program and Proceedings

? Burberry, M.S., Tutt, L.W. and Henzel, R.P. (1995), Laser dye ablation vs laser dye removal. IS and T’S Eleventh International Congress on Advances in Non-Impact Printing Technologies IS and T Final Program and Proceedings, **11**, 312-315.

# Title: International Dairy Journal

Full Journal Title: International Dairy Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Jelen, P., Dejmek, P., Everett, D., Kelly, A., Roupas, P., Smith, D. and Coolbear, T. (2011), The next decade of *International Dairy Journal* in the electronic age of scientific publishing. *International Dairy Journal*, **21** (1), 1-2.

Keywords: Plagiarism, Publishing

# Title: International Dental Journal

Full Journal Title: [International Dental Journal](http://www.idjonline.org/)

ISO Abbreviated Title: Int. Dent. J.

JCR Abbreviated Title: Int Dent J

ISSN: 0020-6539

Issues/Year: 6

Journal Country/Territory: England

Language: English

Publisher: F D I World Dental Press Ltd

Publisher Address: 7 Carlisle St, London W1V 5RG, England

Subject Categories:

Dentistry, Oral Surgery & Medicine: Impact Factor 0.713, / (2001)

Dentistry, Oral Surgery & Medicine: Impact Factor 0.713, / (2001)

? Pankhurst, C.L., Johnson, N.W. and Woods, R.G. (1998), Microbial contamination of dental unit waterlines: The scientific argument. *International Dental Journal*, **48** (4), 359-368.

Full Text: [1998\Int Den J48, 359.pdf](1998/Int%20Den%20J48,%20359.pdf)

Abstract: The quality of dental unit water is of considerable importance since patients and dental staff are regularly exposed to water and aerosols generated from the dental unit. The unique feature of dental chair water lines is the capacity for rapid development of a biofilm on the dental water supply lines combined with the generation of potentially contaminated aerosols. The biofilm, which is derived from bacteria in the incoming water and is intrinsically resistant to most biocides, then becomes the primary reservoir for continued contamination of the system. Dental water may become heavily contaminated with opportunistic respiratory pathogens such as *Legionella* and Mycobacterium s The significance of such exposure to patients and the dental team is discussed. There is at the present time, no evidence of a widespread public health problem from exposure to dental unit water. Nevertheless, the goal of infection control is to minimise the risk from exposure to potential pathogens and to create a safe working environment in which to treat patients. This paper evaluates the range of currently available infection control methods and prevention strategies which are designed to reduce the impact of the biofilm on dental water contamination, and are suitable for use in general practice. Bacterial load in dental unit water can be kept at or below recommended guidelines for drinking water (less than 200 colony forming units/ml) using a combination of readily available measures and strict adherence to maintenance protocols. Sterile water should be employed for all surgical treatments.

? Assari, S. and Ahmadyar, M. (2009), Dental research in Iran: A bibliometric analysis of electronically available literature. *International Dental Journal*, **59** (4), 210-214.

Full Text: [2009\Int Den J59, 210.pdf](2009/Int%20Den%20J59,%20210.pdf)

Abstract: Purpose: To carry out a bibliometric analysis of all electronically available dental literature in Iran from 1983 to 2006, in order to study availability and examine trends. Materials and Methods: Accessing all electronically available Iranian dental articles published in domestic journals, and comparing the results with Iranian dental articles published in Pubmed. The following data were collected from each article: name of journal, year of publication, number of authors, gender of corresponding author, academic levels of authors, main language of article, language of abstract, study environment, population studied, field of dentistry, type of article, design strategy, design of study, and analysis design. Results: In terms of publications in domestic journals, a total of 1,994 dental articles were electronically available, published in six different dental journals in Iran. Majority of articles, 84.5%, were original studies. In terms of design strategy, 49.7% of studies were cross-sectional, 35.5% were prospective, and 14.8% were retrospective studies. The main language of 99.3% of articles was Farsi, and 0.7% was English. Majority of articles, 38.7%, were written by two authors. Gender of corresponding author in 66.7% of articles was male, and in 33.3% of articles was female. There was an increasing trend in percentage of original studies, clinical trials and female corresponding authors. In terms of publications in Pubmed, a total of 75 dental articles from Iran were electronically available. Significant differences were revealed in terms of number of authors, study types and design strategies when compared to publications in domestic journals. Conclusion: A number of encouraging trends were identified, which is a reflection of improvements in quality of domestic electronic dental literature. However, as the majority of articles are written in Farsi, availability of research evidence to the international community is limited. Overall, results of this study indicate the need for future bibliometric analyses which can be used to construct a comprehensive database that will assist in evidence-based clinical decision making.

Keywords: Academic, Bibliometric, Bibliometric Analysis, Database, Dental Literature, Iran, Medline, Paper, Publications, Quality, Read, Research, Research Papers, Trends

? Long, H., Liao, Z.Y., Wang, Y., Liao, L.N. and Lai, W.L. (2012), Efficacy of botulinum toxins on bruxism: An evidence-based review. *International Dental Journal*, **62** (1), 1-5.

Full Text: 2012\Int Den J62, 1.pdf

Abstract: The objective of this study was to assess the efficacy of botulinum toxins on bruxism. Electronic databases (PubMed, Embase and Science Citation Index), websites (Cochrane Central Register of Controlled Trials and ClinicalTrials.gov) and the literature database of SIGLE (System for Information on Grey Literature in Europe) were searched from January 1990 to April 2011 for randomised controlled trials or nonrandomised studies assessing the efficacy of botulinum toxins on bruxism. There was no language restriction. Through a predefined search strategy, we retrieved 28 studies from PubMed, 94 from Embase, 60 from the Science Citation Index, two ongoing clinical trials and two from the Cochrane Central Register of Controlled Trials. Of these, only four studies met our inclusion criteria and were finally included. Of the four included studies, two were randomised controlled trials and two were controlled before-and-after studies. These studies showed that botulinum toxin injections can reduce the frequency of bruxism events, decrease bruxism-induced pain levels and satisfy patients self-assessment with regard to the effectiveness of botulinum toxins on bruxism. In comparison with oral splint, botulinum toxins are equally effective on bruxism. Furthermore, botulinum toxin injections at a dosage of <100 U are safe for otherwise healthy patients. Botulinum toxin injections are effective on bruxism and are safe to use. Therefore, they can be used clinically for otherwise healthy patients with bruxism.

Keywords: Author, Botulinum Toxins, Bruxism, China, Citation, Clinical Trials, Cochrane, Databases, Effectiveness, Efficacy, Europe, Frequency, Literature, Nocturnal Bruxism, Oral, Pain, Patients, Pubmed, Review, Science, Science Citation Index, Sleep Bruxism, Strategy, Systematic Review, Tooth Clenching, Tooth Grinding, Websites

# Title: International Endodontic Journal

Full Journal Title: International Endodontic Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rechenberg, D.K., De-Deus, G. and Zehnder, M. (2011), Potential systematic error in laboratory experiments on microbial leakage through filled root canals: Review of published articles. *International Endodontic Journal*, **44** (3), 183-194.

Abstract: P>Aim To systematically evaluate whether published studies on microbial leakage through filled root canals in human teeth embedded in a two-chamber system were properly controlled. Specifically, the control for the assumption that leakage should occur through the root canal rather than other routes was investigated. Methodology A systematic search was conducted using MEDLINE, Biosis, Cochrane, EMBASE, and Web of Science databases. In addition, the reference lists of review articles pertaining to the topic were searched. No language restriction was applied. Two independent reviewers screened titles and abstracts. All articles deemed appropriate by either reviewer were included in the full-text evaluation. In case of disagreement, a referee arbitrated between the reviewers. Results With 93.8% agreement prior to discussion and arbitration, 67 articles were included. On average, the size of the negative control group was 30% (mean) of the n in the experimental groups (minimum = 0.0%, maximum = 100%, SD = 27%). The majority of studies (57 of 67) used inadequate negative controls. The whole root was covered with the sealing material in these specimens, whilst the root tip was left uncovered in the experimental groups. Consequently, leakage between outer root surface and sealing material was not controlled for. The authors of the remaining 10 communications did not state clearly how negative control assessments were performed. Conclusions Experimental investigations should be performed to assess the routes of microbial leakage in two-chamber models.

Keywords: Authors, Bacteria, Cochrane, Control, Coronal Bacterial Leakage, Databases, Endodontically Treated Teeth, Evaluation, Filling Material, Gutta-Percha, Human, Human Saliva Penetration, In-Vitro Evaluation, Leakage, Long-Term Storage, Methodology, Oval-Shaped Canals, Post-Space Preparation, Review, Root Canal, Science, Sealing Ability, Systematic, Web of Science

# Title: International Food Research Journal

Full Journal Title: International Food Research Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 19854668

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

# Title: International Forestry Review

Full Journal Title: [International Forestry Review](http://www.atypon-link.com/CFA/loi/ifor)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1465-5489

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Perez, M.R., Fu, M.Y., Xie, J.Z., Yang, X.S. and Belcher, B. (2004), The relationship between forest research and forest management in China: An analysis of four leading Chinese forestry journals. *International Forestry Review*, **6** (3-4), 341-345.

Full Text: Int For Rev6, 341.pdf

Abstract: We analyse the collaboration between forestry research institutions and forestry departments in China based on a bibliometric study of four leading Chinese forestry journals. Multiple-authored papers are frequent, and there is a significant collaboration between research and implementing agencies. This collaboration centres on applied research, being less common on fundamental research and almost non-existent on policy research. Universities, National research institutes and National and Provincial level forest departments act as the key organisers of research, with specialised domains and types of collaboration. This helps explain the success of Chinese forestry experiences in recent years.

Keywords: Bibliometric, Bibliometric Study, China, Collaboration, Collaborative Research, Forestry Research, Journals, Reform, Research

# Title: International Forum on Information and Documentation

Full Journal Title: International Forum on Information and Documentation

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0304-9701

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: MModel, 1st paper

? Price, D. and Gursey, S. (1976), Studies in scientometrics. Part I. Transience and continuance in scientific authorship. *International Forum on Information and Documentation*, **1** (2), 17-24.

Full Text: [1960-80\Int For Inf Doc1, 17.pdf](1960-80/Int%20For%20Inf%20Doc1,%2017.pdf)

Notes: MModel, 1st paper

? Price, D. and Gursey, S. (1976), Studies in scientometrics. Part II. Relation between source author and cited author populations. *International Forum on Information and Documentation*, **1** (3), 19-22.

Full Text: [1960-80\Int For Inf Doc1, 19.pdf](1960-80/Int%20For%20Inf%20Doc1,%2019.pdf)

? Lancaster, F.W., Mehrotra, R. and Otsu, K. (1984), Some publication patterns in Indian and Japanese science - A bibliometric comparison. *International Forum on Information and Documentation*, **9** (4), 11-16.

Keywords: Bibliometric, Publication, Science

? Khurshid, A. and Sahai, H. (1991), Bibliometric, Scientometric and Informetric Distributions and Laws - A Selected Bibliography. *International Forum on Information and Documentation*, **16** (2), 18-29

Keywords: Bibliometric

? Rozhkov, S., Mateev, P., Melamed, S., Angelov, G., Mateev, N., Kazansky, N., Slavcheva, V. and Prodanova, E. (1992), The Place of the Academy-Of-Sciences in the Research Potential of Bulgaria - A Bibliometric Analysis. *International Forum on Information and Documentation*, **17** (4), 21-27

Keywords: Bibliometric, Bibliometric Analysis, Research

? Dearenas, J.L. (1993), Online Databases and Their Impact on Bibliometric Analysis - the Mexican Health-Sciences Research Case. *International Forum on Information and Documentation*, **18** (1), 18-20.

Abstract: In a comparison of bibliographic and citation databases, it was found when we measured bibliometrically Mexican health sciences research, 1982-1986, that results varied, since bibliographic databases gave an approximation of the total Mexican output in the area, while citation databases gave an approximation of the role of Mexico as a ‘mainstream’ research producer.

Keywords: Bibliographic Databases, Bibliometric, Bibliometric Analysis, Citation, Databases, Health Sciences, Mexico, Research, Sciences

? Marshakovashaikevich, I.V. (1993), Bibliometrics As A Research Technique in Epistemology and Philosophy of Science. *International Forum on Information and Documentation*, **18** (3-4), 3-9

Keywords: Bibliometrics, Research, Science

? Duplenko, Y.K. and Burchinsky, S.G. (1993), Computerized Cluster-Analysis of Citation Networks - Methodology and Use in Research Policy Formulation. *International Forum on Information and Documentation*, **18** (3-4), 10-13.

Abstract: Deals with the main principles of cluster analysis and specifics of its use in scientometrics. The ways for developing citation networks and mapping research fronts that are possible with the help of this method are also presented. The described methodology of computer-aided cluster analysis of citations provides for mapping the structure of a research front and for identifying main lines in its development.

Keywords: Analysis, Citation, Citations, Cluster Analysis, Development, Research, Research Front, Scientometrics

? Dearenas, J.L., Valles, J. and Williams, D. (1994), Bibliometrics and Agriculture - the Cuba Case. *International Forum on Information and Documentation*, **19** (1), 13-15.

Abstract: Data on research productivity in Cuban agriculture are gathered by searching CAB ABSTRACTS online database. Bibliometrically, the degree of fit between the national research effort and the social aim of agriculture, i.e., to prevent hunger and poverty, is highlighted taking into account that science and technology are tools for the independence and the development of Cuba.

Keywords: Bibliometrics, Database, Development, Place, Productivity, Publication, Research, Research Productivity, Science, Science and Technology, Scientists, Technology

? Markusova, V.A., Giljarevskij, R.S. and Cherny, A.I. (1994), Communication Among Russian Scientists and Between Them and World Science. *International Forum on Information and Documentation*, **19** (3-4), 17-27.

Abstract: This study that was done in 1993-1995 presents a sociological and bibliometrical approach to the assessment of information use and output on research activity. This approach involved the use of questionnaire addressed to large numbers of scientists in a wide range. of fields and in many geographic locations. it focuses on the past performance during the time period 1982-1993 of scientists and engineers participating in the working communities of the former Soviet Union (FSU). The study addresses the following questions: 1. To describe the types of scientific research in the FSU, to describe how information is acquired and used, and to describe the value of this information to the research process; 2. To identify significant differences among the fields of science with regard to,the source of information required by scientists; the satisfaction with information and library services; the sources of information critical for research projects; the kinds of information that are most difficult to get; the dissemination of research results (by oral presentation, submission to peer-reviewed journals, number of publications during last 10 years) and the impact of such activity ore future work; 3. To study significant differences in access to the published information among scientists working in different regions of Russia; 4. To describe the relationships between: the location of institutes and their access to information; scientists’ attendance at conferences and their access to informal sources of information; the level of financial support and the productivity of research groups.

Keywords: Access, Assessment, Financial Support, Impact, Journals, Productivity, Publications, Research, Research Results, Russia, Science, Scientific Research

? Abdullah, S. (1995), Scientific and technical-information - impetus for development in Southeast-Asia. *International Forum on Information and Documentation*, **20** (2), 3-13.

Abstract: Several authors have predicted that the twenty-first century will be the era of the ‘knowledge society’. The real challenge for Southeast Asian nations is to build their society with foundations on scientific and technological knowledge. Currently, governments of Southeast Asian nations are competing for foreign investments in order to accelerate industrialization. This process brings in only a small share of technology temporarily. It is prudent for developing countries to accelerate their own knowledge production and distribution as these activities are an essential basis for industrialization. The knowledge industry has at its core: scholarship, research, publication, and the dissemination of knowledge. This study demonstrates data from bibliometric analysis of scientific publications in ASEAN countries, which indicate a high degree of knowledge dependence on English publications from the U.S. and U.K. Technology information through patents registered in Malaysia also indicates only a small number of Malaysian patents, with a high citation rate to US patents. The provision 4 bibliographic access to current, local, scholarly information needs to be upgraded as well. The urgent agenda for SEA nations entering the twenty-first century is to focus on the production of scientific and technical knowledge to be on par with other industrialized nations.

? lePair, C. (1995), Formal evaluation methods: Their utility and limitations. *International Forum on Information and Documentation*, **20** (4), 16-24.

Abstract: After some comments on evaluation as an integral part of science, the emphasis in this paper is on evaluation for policy purposes. Early attempts to validate the use of bibliometric indicators are outlined. Three lessons emerge: 1. Best results with a variety of methods 2. Reliable results if publication is the major means of communication 3. Useless in technology (applicable science) Next the measurement of a Citation Gap in applicable science is described. Examples are given of the use of bibliometrics in actual policy decisions about the selection of advisors, personnel and budgets. Bibliometrics for policy purposes should never be used on its own. In a final chapter a description is given of the evaluation method to select research projects for financial support, as applied by STW, the technology branch of the Netherlands’ research council, NWO.

Keywords: Bibliometric, Bibliometric Indicators, Bibliometrics, Citation, Evaluation, Financial Support, Indicators, Measurement, Publication, Research, Science, Technology

? Siddiqui, M.A. (1997), A bibliometric study of authorship characteristics in four international information science journals. *International Forum on Information and Documentation*, **22** (3), 3-23.

Abstract: Authorship characteristics in four major information science journals were examined to determine the details of their authors, such as sex occupation, affiliation, geographic distribution, and institutional affiliation. A total of 163 articles written by 294 authors were analyzed. Findings indicate that males (206 or 70.0%) publish 3.0 times more compared to females (69 or 23.5%), and the school of library and information science contributed the most male (39 or 78%), and female (11 or 22%) authors. Maximum number of authors (148 or 50.3%) were located in the U.S.A. with the Midwest (37 or 25.0%) region claiming the largest share. Academic libraries (110 or 37.4%) account for the major share of publication. Thirteen library and information science schools from the U.S.A. contributed 32 authors (50.0%). Assistant professors (25 or 39.1%) publish the most in library schools. Male library and information science school authors publish 1.6 times more in comparison to their female counterpart.

Keywords: Academic Librarians, Articles, Authors, Authorship, Bibliometric, Bibliometric Study, Citation Analysis, College, Faculty, Gender, Information Science, Institutional Affiliation, Journals, Libraries, Library and Information Science, Patterns, Publication, Schools, Science, Science Journals

? Zhang, H.Q., He, D.G., He, L. and Li, J. (1997), The literature of Qigong: Publication patterns and subject headings. *International Forum on Information and Documentation*, **22** (3), 38-44.

Abstract: A study was undertaken to analyze the literature on Qigong by using bibliometric techniques. All journal papers indexed by the CD-ROM MEDLINE between 1965 and 1995 were included. Papers were identified by using the ‘breathing exercises’ Medical Subject Headings (MeSH) term. The study is not only identify a set of core journals, but also illustrate the changing frequency with MeSH terms, as well as evaluate the research areas by measuring the information from these respective subject headings. The findings have implications for database searching and MeSH terms accessing

Keywords: Bibliometric, Documentation, Information, Journal, Journals, Literature, MEDLINE, Research

? Ding, Y. (1998), Scholarly communication and bibliometrics: Part II. The scholarly communication process - Literature review. *International Forum on Information and Documentation*, **23** (3), 3-19.

Abstract: This article is part II of a literature review on scholarly communication and bibliometrics. The first part was published in (FID no. 2 and dealt with the scholarly communication model. The second part will deal with the scholarly communication process. In recent years there has been a resurgence of interest both in scholarly communication as a research area and in the application of bibliometrics as a research method This article discusses the scholarly communication process from the following three points of view: (I) scholarly communication participants the human element in scholarly communication; (2) scholarly communication media - the carrier element in scholarly communication; (3) information diffusion in scholarly communication - the message element in scholarly communication. Scientific research is all information consuming as well as producing human activity of which output outperforms its input. The study of characteristics of information processes represents a central topic in the discipline of science and also in Bibliometrics. The channels of information either in the classical printed or in electronic form are the scientific journals, which contain about 70 % of the new information, produced in natural sciences. Conditions and intensity of the information flow between persons, teams, institutions, countries, etc. have been widely studied. Information emitters, being absorbers as well, may form a social network, which is frequently and thoroughly studied by many authors.

Keywords: Authors, Behavior, Bibliometrics, Citation Analysis, Cocitation Analysis, Countries, Information-Transfer, Intellectual Structure, International Scientific Collaboration, Journal Impact Factors, Journals, Literature, Literature Review, Multiple Authorship, Network, Research, Scholarly Communication, Science, Sciences, Scientific Journals, Social-Sciences

# Title: International Geology Review

Full Journal Title: International Geology Review

ISO Abbreviated Title: Internat. Geol. Rev.

JCR Abbreviated Title: Internat Geol Rev

ISSN: 0020-6814

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: V H Winston & Son Inc

Publisher Address: 360 South Ocean Blvd, PH-B, Palm Beach, FL 33480

Subject Categories:

Geology: Impact Factor 0.767, / (2001)

Kashirtseva, M.F. (1960), Experimental data on sorption of copper by various minerals and organic sorbing agents. *International Geology Review*, **2**, 52-59.

# Title: International Information, Communication and Education

Full Journal Title: International Information, Communication and Education

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Kalyane, V.L. (1994), Establishing scientometric database for harnessing expertise and information sources. *International Information, Communication and Education*, **13** (2), 208-212.

Full Text: [I\Int Inf Com Edu13, 208.pdf](I/Int%20Inf%20Com%20Edu13,%20208.pdf)

Keywords: Bibliometrics, Scientometrics, Databases, Publication Productivity, Citation Analysis

# Title: International Information & Library Review

Formerly known as [International Library Review](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=23223&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=d1c1fa1e9a483b354fcf3598a7391c81)

Full Journal Title: [International Information & Library Review](http://www.sciencedirect.com/science?_ob=PublicationURL&_cdi=6828&_pubType=J&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=fef3dcd36aaafda7923f051b208be064)

ISO Abbreviated Title:

JCR Abbreviated Title: Int Inf Libr Rev

ISSN: 1057-2317

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Ashoor, M.S. and Chaudhry, A.S. (1993), Publication patterns of scientists working in Saudi Arabia. *International Information & Library Review*, **25** (1), 61-71.

Full Text: [I\Int Inf Lib Rev25, 61.pdf](I/Int%20Inf%20Lib%20Rev25,%2061.pdf)

Abstract: A literature review of the publishing behaviours of scientists in developing countries indicated that they preferred to publish in English in foreign journals. In Saudi Arabia, also, English is used as the main language of scientific communication. Not much scientific research is reported in the Arabic language. A study based on a computerized database of journal articles derived from the *Science Citation Index* (1980-1984) was conducted to investigate the publishing patterns of scientists working in Saudi Arabia. Publication productivity of the Saudi scientists was found quite strong with teaching institutions contributing most of the publications. While biological and medical sciences dominate the research activities, chemists seem to be the single most productive group. Publication outlets in the USA and the UK are preferred by scientists working in Saudi Arabia. The ranking of journals by declining frequency of contribution show wide scattering of journals where Saudi scientists publish their research. It was found that most of these journals, which may be considered core titles, are available in academic and specialist libraries. Ranking by productivity was also in line with the impact factor and in-house use data confirming the selection and deselection criteria for journal subscriptions.

Bliss, N.J. (1993), International librarianship: A bibliometric analysis of the field. *International Information & Library Review*, **25** (2), 93-107.

Full Text: [I\Int Inf Lib Rev25, 93.pdf](I/Int%20Inf%20Lib%20Rev25,%2093.pdf)

Abstract: This bibliometric analysis of the literature in the field of international librarianship is based on the reference patterns in the materials indexed by *Library Literature* for the years 1958 to 1990. The study is designed to answer four research questions: (1) Based on the existing literature, what disciplines have contributed to international librarianship? (2) How have the contributions of publications in international librarianship fluctuated over the years? (3) What countries have contributed publications in international librarianship? (4) Who are the key/principal individuals who have authored contributions to the international librarianship literature?

Citation analysis was used to collect the data for this study. Descriptive statistics were used to analyse the data and present the results and findings.

The major findings of the study are: (1) examination of the interdisciplinarity of the field of international librarianship revealed that the contribution by other disciplines was only 13.02%, suggesting the field is self-sufficient; (2) examination of the fluctuations in the number of publications revealed the contributions fluctuate somewhat erratically; (3) investigation of the geographic distribution of the contributions to the field revealed a dominance by the more industrialized countries, who published the majority of the documents; and (4) indentification of key contributors to the literature determined that the field is extremely insular.

Hamade, S.N. (1994), Characteristics of the literature used by arab authors in library and information science: A Bibliometric Study. *International Information & Library Review*, **26** (3), 139-150.

Full Text: [I\Int Inf Lib Rev26, 139.pdf](I/Int%20Inf%20Lib%20Rev26,%20139.pdf)

Abstract: This paper attempts to shed some light on the scientific communication behavior of Arab authors in library and information science by studying the characteristics of the literature used by these authors. A bibliometric study by way of citation analysis was conducted on the articles published from 1978 to 1988 in *Maktabat Al-Idarah*, an elite Arab scholarly journal in the field. It was concluded from this study that English literature is the main source of information for Arab authors in library and information science. They rely on English literature that is between 5 and 15 years of age more than on their own literature and use books more than any other form of publication. They cover almost all areas of the field with special emphasis on technical services as represented by cataloging, classification and aquisition, library administration and library education. Local materials published in their own country were also important.

Zhang, H.Q. (1995), Analysing the research articles published in three periodicals of medical librarianship. *International Information & Library Review*, **27** (3), 237-248.

Full Text: [I\Int Inf Lib Rev27, 237.pdf](I/Int%20Inf%20Lib%20Rev27,%20237.pdf)

Abstract: The present article reports some findings from a bibliometric survey of research articles published in theBulletin of the Medical Library Association, theJournal of the Japan Medical Library Associationand the Medical Information Servicesduring the period from 1990 to 1992. The findings provide valuable information of the articles concerning the methods and subjects, as well as references of the three periodicals.

Mahmood, K. (1996), Library and information services in Pakistan: A review of articles published in foreign journals. *International Information & Library Review*, **28** (4), 383-405.

Full Text: [I\Int Inf Lib Rev28, 383.pdf](I/Int%20Inf%20Lib%20Rev28,%20383.pdf)

Abstract: The paper presents a statistical and subjective review of the journal articles on various aspects of library and information services in Pakistan. Only the articles published in the journals outside Pakistan are included. Articles are selected from four abstracting services, i.e. LISA, ISA, LSA, and ERIC. Authorship characteristics of 97 articles are analysed and compared with the previous studies of LIS periodicals. Authorship details include collaboration, occupation, affiliation, and the author’s country. Other publication details of the articles include year, language, journal, and the country of publication. The findings show that library science teachers write more than the other professionals and the most popular subject is the library and information science education. Library science faculty at Karachi University contributes more articles in international journals. The articles are mostly published in English language journals and in English speaking countries, i.e. UK and USA. *International Information and Library Review* published more articles on this topic. Problems in library research in Pakistan are discussed and recommendations are made. A brief review of the articles is given according to 16 major subjects. A bibliography of the articles reviewed is also compiled.

Uzun, A. (1998), A scientometric profile of social sciences research in Turkey. *International Information & Library Review*, **30** (3), 169-184.

Full Text: [I\Int Inf Lib Rev30, 169.pdf](I/Int%20Inf%20Lib%20Rev30,%20169.pdf)

Abstract: I surveyed the social sciences journal literature for the decade period 1987-1996 looking for papers with authors, or at least one co-author giving an address from an institution in Turkey. The number of such papers had nearly tripled from 1987 to 1996. I found that the papers are scattered into 341 journals and almost one third of all papers went to nine journals, each of which contained an average of a least one Turkish paper per year. Only two of these journals, on archaeology and anthropology, happened to be of high citation impact. Psychology and psychiatry, combined with business and economics are found to be the most productive subjects accounting for about half of the publication output. A vast majority of the papers were articles in English, and in an average article contained about 24 bibliographic references. The number of Turkish papers in nine major journals are somewhat correlated with their availability in local libraries. The number of co-authors per paper had nearly doubled over the period surveyed, reflecting increased interaction among scientists. About half of the authors were affiliated with three universities in Ankara and Istanbul, indicating a heavier concentration of social sciences research in the main metropoles of the country.

Ding, Y., Foo, S. and Chowdhury, G. (1998), A bibliometric analysis of collaboration in the field of information retrieval. *International Information & Library Review*, **30** (4), 367-376.

Full Text: [I\Int Inf Lib Rev30, 367.pdf](I/Int%20Inf%20Lib%20Rev30,%20367.pdf)

Abstract: Collaboration practices vary greatly per scientific area and discipline and influence the scientific performance and its scholarly communication. In this study, the collaborative pattern of;he Information Retrieval (IR) research field is analyzed using co-authored articles retrieved from Social Science Citation Index for a period of 11 years from 1987 to 1997. The level of collaboration, journal collaborative distribution, disciplinary collaborative distribution and country collaboration are probed according to IR collaborative research. Findings are discussed from the above perspectives in detail. In particular, this study reveals a perceptible upward trend of collaborative IR research with the results of these research efforts being reported in all major core IR journals. The inter-disciplinary and intra-disciplinary scholarly communications in collaborative researches are very much in evidence and cover broad areas like psychology, and computer and medical sciences, respectively. (C) 1998 Academic Press.

Keywords: International Collaboration, Scientific Collaboration, Authorship, Science

Uzun, A. (2002), Library and information science research in developing countries and Eastern European countries: A brief bibliometric perspective. *International Information & Library Review*, **34** (1), 21-33.

Full Text: [I\Int Inf Lib Rev34, 21.pdf](I/Int%20Inf%20Lib%20Rev34,%2021.pdf)

Abstract: We examined a set of 21 core journals in the field of library and information science (LIS) from 1980–1999 for articles with either principal or co-authors from developing countries (DCs) and the formerly socialist Eastern European countries (EECs). We found that only 826 (7·9%) of a total of 10,400 articles published in 21 journals are from DCs or EECs. The numbers of articles with authors from China, Saudi Arabia, Turkey, Botswana, Ghana, Kuwait, and Taiwan considerably increased and those of India, Nigeria, Pakistan, Brazil, and Poland decreased. Using a bibliometric indicator we found that among the countries with declining trends in the numbers of articles, LIS research is receiving high priority in Nigeria and Pakistan whereas among the countries with increasing trends in articles, it is receiving low priority in China, Turkey and Taiwan. A ‘co-word’ analysis based on the key words and thematic noun- phrases in the titles and abstracts of a sample of 102 articles published in 1996 to 1999 indicated that bibliometrics is the most frequent topic in LIS research in major DCs and EECs. Information retrieval, information need and information use is among the topics of relatively high interest for the researchers working in DCs in Asia and Africa.

Keywords: Astronomers, Bibliometrics, China, Collaboration, Information Science, Latin-America, Physics Publications, Research, Social-Sciences, Topic

Chang, N.C. and Perng, J.H. (2002), Information search habits of graduate students at Tatung University. *International Information & Library Review*, **34** (1), 341-346.

Full Text: [I\Int Inf Lib Rev34, 341.pdf](I/Int%20Inf%20Lib%20Rev34,%20341.pdf)

Abstract: The author investigated the information requirements and search habits of graduate students at Tatung University, a private university in Taipei City, Taiwan. Data were collected by means of questionnaires (416) and follow-up interviews with graduate students from nine departments. Results show that 90% of the subjects conducted information searches using outside sources in addition to the university library. More than half of the respondents said that they depend on the university library and fellow students when conducting information searches. Finally, the amount of required effort and speed of access were more important than cost when choosing an Information source.

Chandra, S. (2002), Information in a networked world: The Indian perspective. *International Information & Library Review*, **34** (3), 235-246.

Full Text: [I\Int Inf Lib Rev34, 235.pdf](I/Int%20Inf%20Lib%20Rev34,%20235.pdf)

Orji, O.I. (2002), Information in a networked world: The Nigerian perspective. *International Information & Library Review*, **34** (3), 271-277.

Full Text: [I\Int Inf Lib Rev34, 271.pdf](I/Int%20Inf%20Lib%20Rev34,%20271.pdf)

Abstract: This paper identifies and recognizes information not only as a protean asset, but also as the ultimate powerhouse for any country. If information is power, then it follows that for Nigeria to go forward, it must be information-based and information-driven. In order to achieve this, however, the paper advocates that government should establish the basic, essential national information infrastructure. The paper also argues for Nigeria to be Internet-ready, as well as being Intranet- and Extranet-enabled, as a sine qua non for Nigeria’s successful participation in the global economy. Details on Nigeria’s information infrastructure and its weaknesses are described as well as plans for improving it. The paper also discusses the different types of information networks in Nigeria and the sectors of the economy that are already involved.

Al-Qallaf, C.L. and Al-Azmi, H.M. (2002), Information technology in public libraries in Kuwait: A first study. *International Information & Library Review*, **34** (4), 289-308.

Full Text: [I\Int Inf Lib Rev34, 289.pdf](I/Int%20Inf%20Lib%20Rev34,%20289.pdf)

Abstract: This study examines the availability and use of information technology in public libraries in Kuwait. Specific areas addressed are (1) hardware/software, (2) patterns of connectivity such as LANs, Internet, etc., (3) training and development activities in support of information technology, and (4) future projections regarding the use of information technology. The study provides policy-makers and information professionals with previously unavailable baseline data concerning the use of computers and access to telecommunications networks in public libraries in Kuwait. A questionnaire sent to all public libraries (N = 25) yielded a 92% response. Interviews with libraries’ administrators and authorities were also undertaken to gather additional data. The results of the study reveal that many information technology inequalities exist among the libraries. Only eight libraries make use of computers and 15 are without any type of IT-related technology. The study shows that few libraries have connectivity, limited use of applications, and the implementation of an automated library system are slow moving. Factors impeding the development of information technology are planning, funding, human resources, and building structure. Recommendations are made with the intention to encourage the public library sector and information professionals in Kuwait to take a proactive position in overcoming the forces that hinder the development of IT. (C) 2003 Elsevier Science Ltd. All rights reserved.

Keywords: Saudi-Arabia

Ikoja-Odongo, J.R. (2002), Mapping information systems and services in Uganda: An overview. *International Information & Library Review*, **34** (4), 309-334.

Full Text: [I\Int Inf Lib Rev34, 309.pdf](I/Int%20Inf%20Lib%20Rev34,%20309.pdf)

Abstract: This paper aims at defining and mapping the information sector in Uganda with regard to general awareness and comparative studies. It is written from the sociological perspective and is based on a review of literature, a survey of advertisements, guidelines for mapping the information sector of other countries and on the author’s experience. Restrictions that hamper this sector’s growth are outlined together with the government’s aspirations for improvement. The article represents a rare attempt at mapping the information sector in Uganda for the purpose of wide information dissemination. (C) 2003 Elsevier Science Ltd. All rights reserved.

Omotayo, B.O. (2004), A content analysis of *Ife psychologia*, 1993–2002. *International Information & Library Review*, **36** (2), 95-103.

Full Text: [I\Int Inf Lib Rev36, 95.pdf](I/Int%20Inf%20Lib%20Rev36,%2095.pdf)

Abstract: Bibliometric attributes, including formats and recency of citation, have been used to obtain a content analysis of *Ife Psychologia* from its inception in 1993 to 2002. The data on geographical spread of authorship and subject matter coverage from the 20 issues published were subjected to the Bradford Statistical Model. The results indicate that *Ife Psychologia* is a multi-disciplinary international journal that has been able to continue publishing in spite of the problems afflicting journal publishing in Africa. A total of 382 authors from 26 countries contributed to the journal, with foreign authorship rising from an initial average of 21.7% in the first 6 years to around 52% in the last 4 years. Subject matter coverage spanned over 14 fields, including psychology, education, sociology and mental health. Journals (47.7%) and books (45.2%) constituted the most cited works by authors. Though cited works were not all that current (only 20% under 5 years of publication), the incidence of authors’ self-citation was minimal, being 5.3% overall and just 1.2% for the journal’s self-citation. The study provides a good testimonial for the inclusion of the journal in the suite of *African Journals On-Line* and should assist in strengthening its editorial management.

? Ngulube, P. (2005), Research procedures used by Master of Information Studies students at the University of Natal in the period 1982-2002 with special reference to their sampling techniques and survey response rates: A methodological discourse. *International Information & Library Review*, **37** (2), 127-143.

Full Text: Int Inf Lib Rev37, 127

Abstract: The study investigated the research procedures used by Master of Information Studies students at the University of Natal between 1982 and 2002 with special reference to their sampling techniques and survey response rates. Methods employed by researchers are key to the quality of their research outputs. The results indicated that sample surveys dominated the research arena during the period under review. Many theses rarely defined the population of the studies. Some quantitative theses used ad hoc sampling procedures. The instruments of data collection were pretested before being used in the field. Questions of reliability and validity of the survey protocols were not adequately addressed. Response rates of the surveys were above average. Most of the theses ignored the evaluation of the research procedures. The argument put forward is quite simple. For research in library and information science to contribute to theory and improve planning, practice and decision-making, it should rely on objective methods and procedures. Readers would make use of the findings and recommendations of LIS research if they have some degree of confidence in the quality of work described and the accuracy of conclusions drawn. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Bibliometrics, Evaluation, Information Science, Library, LIS, Mail Surveys, Research, Science, Theory

# Title: International Journal of the Addictions

Full Journal Title: International Journal of the Addictions

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Reno, R.R. and Aiken, L.S. (1993), Life activities and life quality of heroin-addicts in and out of methadone treatment. *International Journal of the Addictions*, **28** (3), 211-232.

Abstract: The focus of the present study was the daily life activities and self-perceived health and life quality of heroin addicts both in and out of methadone treatment, based on 219 addicts followed for 8 months after treatment entry. The majority of outcome evaluations of methadone treatment have focused on the “hard” outcome criteria of drug use levels, criminal activities, and employment. The present study, in contrast, addressed how heroin addicts live on a daily basis, and whether being chemically supported on methadone was associated with changes in daily life activities and perceived quality of life. A six-dimensional measurement model of daily life activities, perceived health, and life quality was established. Substantial changes on the dimensions in a positive direction were found in the 2 months just following treatment entry. Changes in daily life activities (e.g., spending more time with the family, attending to the home) may be early indicators of the impact of methadone treatment that precede changes on the usual “hard” criteria (e.g., obtaining legal employment).

Keywords: Drug-Abuse Treatment, Causal-Models, Follow-Up, Maintenance, Clients, Program

# Title: International Journal of Advanced Manufacturing Technology

Full Journal Title: [International Journal of Advanced Manufacturing Technology](http://www.springerlink.com/(pnqyh155dzsn3i45qywmpyna)/app/home/journal.asp?referrer=backto&backto=linkingpublicationresults,1:102823,1;&absoluteposition=3#A3)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0268-3768

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Sarkar, B.R., Doloi, B. and Bhattacharyya, B. (2006), Parametric analysis on electrochemical discharge machining of silicon nitride ceramics. *International Journal of Advanced Manufacturing Technology*, **28** (9), 873-881.

Full Text: [2006\Int J Adv Man Tec28, 873.pdf](2006/Int%20J%20Adv%20Man%20Tec28,%20873.pdf)

Abstract: The electrochemical discharge machining (ECDM) process has a potential in the machining of silicon nitride ceramics. This paper describes the development of a second order, non-linear mathematical model for establishing the relationship among machining parameters, such as applied voltage, electrolyte concentration and inter-electrode gap, with the dominant machining process criteria, namely material removal rate (MRR), radial overcut (ROC) and thickness of heat affected zone (HAZ), during an ECDM operation on silicon nitride. The model is developed based on response surface methodology (RSM) using the relevant experimental data, which are obtained during an ECDM micro-drilling operation on silicon nitride ceramics. We also offer an analysis of variance (ANOVA) and a confirmation test to verify the fit and adequacy of the developed mathematical models. From the parametric analyses based on mathematical modelling, it can be recommended that applied voltage has more significant effects on MRR, ROC and HAZ thickness during ECDM micro-drilling operation as compared to other machining parameters such as electrolyte concentration and inter-electrode gap.

Keywords: Anova, Micro-Electrochemical Discharge Machining (ECDM), Response Surface Methodology (RSM), Silicon Nitride, Experimental-Verification, Theoretical-Model, Material Removal, Mechanism

# Title: International Journal of Agricultural Sustainability

Full Journal Title: International Journal of Agricultural Sustainability

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Wezel, A. and Soldat, V. (2009), A quantitative and qualitative historical analysis of the scientific discipline of agroecology. *International Journal of Agricultural Sustainability*, **7** (1), 3-18.

Abstract: At present, agroecology can be interpreted as a scientific discipline, as a movement or as a practice. In this paper we analyse the historical evolution of the scientific discipline of agroecology with a quantitative bibliometric analysis of 711 publications using the term agroecology and the derived term agroecological, as well as a qualitative analysis of definitions, topics and scales, where we also include further important works on agroecology. Agroecology emerged in the 1930s and the period up until the 1960s was the initial phase of agroecology. During the 1970s and 1980s, agroecology as a science expanded, and in the 1990s became institutionalized and consolidated. Since the 2000s, broader definitions have provided the basis for new dimensions in agroecology. During the last two decades the range of topics treated within agroecology grew enormously; also the publication rate has exploded within the last 10 years. The scale and dimension of scientific research in agroecology has changed over the past 80 years from the plot or field scale to the farm or agroecosystem scale and finally to the food system. Currently, three approaches persist: (1) the plot/field scale; (2) the agroecosystem/farm scale; and (3) the food system approach. In spite of a vague utilization of the term agroecology through its different meanings and definitions, the new views and dimensions brought to agroecology as a scientific discipline will probably facilitate efforts to respond to actual important questions on sustainable agriculture, global land use and climate change, or food security, due to increasingly applied systems thinking and interdisciplinary research approaches.

Keywords: Agricultural Sustainability, Agriculture, Agroecology, Agroecosystem, Agroecosystems, Agronomy, Analysis, Approach, Bibliometric, Bibliometric Analysis, Biodiversity, Biodiversity, Change, Climate, Climate Change, Conservation, Curriculum, Evolution, Field, Food, Food Security, Historical Analysis, Interdisciplinary, Interdisciplinary Research, Land Use, Land-Use, Management, Mexico, Movement, Organic Farming, Practice, Principles, Publication, Publication Rate, Publications, Qualitative, Qualitative Analysis, Research, Rural Development, Scale, Scales, Science, Scientific Research, Security, Sustainability, Sustainable, Sustainable Agriculture, Systems, Systems Thinking, Term, Utilization

# Title: International Journal of Approximate Reasoning

Full Journal Title: International Journal of Approximate Reasoning

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Gagolewski, M. and Grzegorzewski, P. (2011), Possibilistic analysis of arity-monotonic aggregation operators and its relation to bibliometric impact assessment of individuals. *International Journal of Approximate Reasoning*, **52** (9), 1312-1324.

Full Text: [2011\Int J App Rea52, 1312.pdf](2011/Int%20J%20App%20Rea52,%201312.pdf)

Abstract: A class of arity-monotonic aggregation operators, called impact functions, is proposed. This family of operators forms a theoretical framework for the so-called Producer Assessment Problem, which includes the scientometric task of fair and objective assessment of scientists using the number of citations received by their publications. The impact function output values are analyzed under right-censored and dynamically changing input data. The qualitative possibilistic approach is used to describe this kind of uncertainty. It leads to intuitive graphical interpretations and may be easily applied for practical purposes. The discourse is illustrated by a family of aggregation operators generalizing the well-known Ordered Weighted Maximum (OWMax) and the Hirsch h-index. (C) 2011 Elsevier Inc. All rights reserved.

Keywords: Aggregation Operators, Analysis, Assessment, Bibliometric, Citations, Construction, Family, h Index, h-Index, Impact, Index, Owmax, Possibility Theory, Publications, Qualitative, S-Statistics

# Title: International Journal of Artificial Organs

Full Journal Title: [International Journal of Artificial Organs](http://www.artificial-organs.com/public/IJAO/Issue/Issue_List.aspx?Status=Archive)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Marx, U., Bushnaq, H. and Yalcin, E. (1998), European research and commercialisation activities in the field of tissue engineering and liver support in world wide competition. *International Journal of Artificial Organs*, **21** (2), 119-126.

Abstract: Tissue engineering is seen as an interesting field of technology which could improve medical therapy and could also be considered as a commercial opportunity for the European biotechnological industry. Research in the state of the art of science using the MedLine(C) and the Science Citation Index(C) databases, in the patent situation and of the industry dealing with tissue engineering was done. A special method based on the Science Citation Index(C) Journal Citation Report 1993, for evaluating scientific work was defined. The main countries working in the field of tissue engineering were evaluated in regard to their scientific performance and their patents. The R&D of German industry was investigated as an exemplary European country. Out of all activities, different tissues were rated with respect to the attention received from research and industry and with regard to the frequency in which patents were applied for. USA, Germany and Japan rank first in most tissues, especially liver. After comparing German patents with the German scientific and industrial work, it seems that the potential in German patents and research is underestimated by German industry and inefficiently exploited.

Keywords: Cells, Citation, Commercialisation, Databases, Industrial, Japan, Literature Evaluation, Literature Survey, Liver, Patent Analysis, Patents, R&D, Research, Science, Technology, Therapy, Tissue Engineering, Transplantation, USA

? Yavuz, H., Andac, M., Uzun, L., Say, R. and Denizli, A. (2006), Molecular recognition based iron removal from human plasma with imprinted membranes. *International Journal of Artificial Organs*, **29** (9), 900-911.

Abstract: The aim of this study is to prepare ion-imprinted poly(2-hydroxyethyl methacrylate) (HEMA) based membranes which can be used for the selective removal of Fe3+ ions from Fe3+overdosed human plasma. N-methacryloyl-(L)-glutamic acid (MAGA) was chosen as the ion-complexing monomer. In the first step, Fe3+ was complexed with MAGA and then, the Fe3+-imprinted poly(HEMA-MAGA) membranes were prepared by UV-initiated photo-polymerization of HEMA and MAGA-Fe3+ complex in the presence of an initiator (benzoyl peroxide). After that, the template (i.e., Fe3+ ions) was removed by using 0.1 M EDTA solution at room temperature. The specific surface area of the Fe3+-imprinted poly(HEMA-MAGA) membranes was found to be 49.2 m2/g and the swelling ratio was 92%. According to the elemental analysis results, the polymeric membranes contained 145.7 μmol MAGA/g polymer. The maximum adsorption capacity was 164.2 μmol Fe3+/g membrane. The relative selectivity coefficients of ion-imprinted membranes for Fe3+/Zn2+ and Fe3+/Cr3+ were 12.6 and 62.5 times greater than the non-imprinted matrix, respectively. The Fe3+-imprinted poly(HEMA- MAGA) membranes could be used many times without decreasing their Fe3+ adsorption capacities significantly.

Keywords: Molecular Imprinting, Molecular Recognition, Iron Removal, Metal Detoxification, Affinity Binding, Therapeutic Affinity Adsorption, Solid-Phase Extraction, Chelation-Therapy, Antibody Removal, Cadmium Removal, Beads, Preconcentration, Microspheres, Deferoxamine, Microbeads

# Title: International Journal of Behavioral Development

Full Journal Title: International Journal of Behavioral Development

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schui, G. and Krampen, G. (2010), Thirty years of *International Journal of Behavioral Development*: Scope, internationality, and impact since its inception. *International Journal of Behavioral Development*, **34** (4), 289-291.

Abstract: The article presents 30-year bibliometrical results on trends in the scope, internationality, and impact of the International Journal of Behavioral Development (IJBD) from its inception in 1978 to 2007. Bibliometric data were collected using the databases PsycINFO and Social Science Citation Index (SSCI), and the IJBD itself. In comparison to other journals on developmental psychology, the special features of IJBD include its frequent publications of research on mother-child relations, childhood development, cross-cultural studies, and longitudinal studies, an increasing multinationality of authorships (from 52 countries) and citations as well as increasing international citation rates (impact) since 1990. Uncitedness of articles published in IJBD is comparably low. The h-index for all articles published in IJBD between 1978 and 2007 ranges between 8 and 27.

Keywords: Bibliometrics, Developmental Psychology, History of Psychology, International Research Cooperation, Psychology, Scientometrics

# Title: International Journal of Behavioral Medicine

Full Journal Title: [International Journal of Behavioral Medicine](http://www.springerlink.com/content/g1534555k303/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schui, G., Fell, C. and Krampen, G. (2010), The impact of positive psychology on behavioral medicine and health psychology. A bibliometric overview. *International Journal of Behavioral Medicine*, **17**, 46.

Full Text: [2010\Int J Beh Med17, 46.pdf](2010/Int%20J%20Beh%20Med17,%2046.pdf)

Keywords: Medicine

# Title: International Journal of Behavioral Nutrition and Physical Activity

Full Journal Title: International Journal of Behavioral Nutrition and Physical Activity

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Robroek, S.J.W., van Lenthe, F.J., van Empelen, P. and Burdorf, A. (2009), Determinants of participation in worksite health promotion programmes: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, **6**, Article Number: 26.

Full Text: [2009\Int J Beh Nut Phy Act6, 26.pdf](2009/Int%20J%20Beh%20Nut%20Phy%20Act6,%2026.pdf)

Abstract: Background: The workplace has been identified as a promising setting for health promotion, and many worksite health promotion programmes have been implemented in the past years. Research has mainly focused on the effectiveness of these interventions. For implementation of interventions at a large scale however, information about (determinants of) participation in these programmes is essential. This systematic review investigates initial participation in worksite health promotion programmes, the underlying determinants of participation, and programme characteristics influencing participation levels. Methods: Studies on characteristics of participants and non-participants in worksite health promotion programmes aimed at physical activity and/or nutrition published from 1988 to 2007 were identified through a structured search in PUBMED and Web of Science. Studies were included if a primary preventive worksite health promotion programme on PA and/or nutrition was described, and if quantitative information was present on determinants of participation. Results: In total, 23 studies were included with 10 studies on educational or counselling programmes, 6 fitness centre interventions, and 7 studies examining determinants of participation in multi-component programmes. Participation levels varied from 10% to 64%, with a median of 33% (95% CI 25-42%). In general, female workers had a higher participation than men (OR = 1.67; 95% CI 1.25-2.27]), but this difference was not observed for interventions consisting of access to fitness centre programmes. For the other demographic, health- and work-related characteristics no consistent effect on participation was found. Pooling of studies showed a higher participation level when an incentive was offered, when the programme consisted of multiple components, or when the programme was aimed at multiple behaviours. Conclusion: In this systematic review, participation levels in health promotion interventions at the workplace were typically below 50%. Few studies evaluated the influence of health, lifestyle and work-related factors on participation, which hampers the insight in the underlying determinants of initial participation in worksite health promotion. Nevertheless, the present review does provide some strategies that can be adopted in order to increase participation levels. In addition, the review highlights that further insight is essential to develop intervention programmes with the ability to reach many employees, including those who need it most and to increase the generalizability across all workers.

Keywords: Absenteeism, Determinants, Effectiveness, Fitness Program, Health Promotion, Impact, Information, Intervention, Interventions, Methods, Nonparticipants, Nutrition, Physical Activity, Physical-Activity Programs, Primary, Promotion, Pubmed, Quantitative, Research, Review, Science, Site, Systematic, Systematic Review, Web of Science

? Verhaeghe, N., De Maeseneer, J., Maes, L., Van Heeringen, C. and Annemans, L. (2011), Effectiveness and cost-effectiveness of lifestyle interventions on physical activity and eating habits in persons with severe mental disorders: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, **8**, Article Number: 28.

Full Text: [2009\Int J Beh Nut Phy Act6, 28.pdf](2009/Int%20J%20Beh%20Nut%20Phy%20Act6,%2028.pdf)

Abstract: Background: There is a high prevalence of overweight and obesity in persons with severe mental disorders and this has serious implications on the short and long term health outcomes of these patients. The aim of this review was to evaluate the effectiveness of lifestyle interventions targeting physical activity and eating habits in persons with severe mental disorders. Special attention was given if any of the included studies in the review also examined the cost-effectiveness of these health promotion interventions. Methods: A systematic search through the electronic databases MEDLINE, Web of Science, CINAHL and Cohrane Library was conducted, and by hand-searching the reference lists of the retrieved articles from the electronic databases. Studies were included if they examined effectiveness and/or cost-effectiveness of lifestyle interventions targeting physical activity and eating habits in persons with severe mental disorders, with primary outcome changes in Body Mass Index and body weight. Results: Fourteen studies met the inclusion criteria. Weight loss and Body Mass Index decrease were observed in intervention groups in 11 studies. The difference in weight change between intervention and control groups was statistically significant in nine studies. Differences in mean Body Mass Index between intervention and control groups were statistically significant in eight studies. Five studies reported improvements in quality of life and general health. In none of the studies cost-effectiveness of lifestyle interventions was examined. Conclusion: Further research on both effectiveness and cost-effectiveness of lifestyle interventions targeting physical activity and eating habits in persons with severe mental disorders is required to assist in the development of new health promotion interventions in this population.

Keywords: Attention, Atypical Antipsychotics, Body Weight, Body-Mass Index, Control, Control Groups, Cost-Effectiveness, Databases, Development, Effectiveness, Excess Mortality, Health Outcomes, Health Promotion, Health-Promotion, Induced Weight-Gain, Intervention, Interventions, Mental Disorders, Methods, Nutritional Intervention, Obesity, Outcome, Outcomes, Overweight, Physical Activity, Prevalence, Primary, Promotion, Psychiatric-Patients, Quality of Life, Randomized Controlled-Trial, Research, Review, Schizoaffective Disorder, Science, Systematic, Systematic Review, Waist Circumference, Web of Science

? Spittaels, H., Foster, C., Oppert, J.M., Rutter, H., Oja, P., Sjostrom, M. and De Bourdeaudhuij, I. (2009), Assessment of environmental correlates of physical activity: Development of a European questionnaire. *International Journal of Behavioral Nutrition and Physical Activity*, **6**, Article Number: 39.

Full Text: [2009\Int J Beh Nut Phy Act6, 39.pdf](2009/Int%20J%20Beh%20Nut%20Phy%20Act6,%2039.pdf)

Abstract: Background: Research on the influence of the physical environment on physical activity is rapidly expanding and different measures of environmental perceptions have been developed, mostly in the US and Australia. The purpose of this paper is to (i) provide a literature review of measures of environmental perceptions recently used in European studies and (ii) develop a questionnaire for population monitoring purposes in the European countries. Methods: This study was done within the framework of the EU-funded project ‘Instruments for Assessing Levels of Physical Activity and Fitness (ALPHA)’, which aims to propose standardised instruments for physical activity and fitness monitoring across Europe. Quantitative studies published from 1990 up to November 2007 were systematically searched in PUBMED, Web of Science, TRIS and Geobase. In addition a survey was conducted among members of the European network for the promotion of Health-Enhancing Physical Activity (HEPA Europe) and European members of the International Physical Activity and Environment Network (IPEN) to identify published or ongoing studies. Studies were included if they were conducted among European general adult population (18+y) and used a questionnaire to assess perceptions of the physical environment. A consensus meeting with an international expert group was organised to discuss the development of a European environmental questionnaire. Results: The literature search resulted in 23 European studies, 15 published and 8 unpublished. In these studies, 13 different environmental questionnaires were used. Most of these studies used adapted versions of questionnaires that were developed outside Europe and that focused only on the walkability construct: The Neighborhood Environment Walkability Scale (NEWS), the abbreviated version of the NEWS (ANEWS) and the Neighborhood Quality of Life Study (NQLS) questionnaire have been most commonly used. Based on the results of the literature review and the output of the meeting with international experts, a European environmental questionnaire with 49 items was developed. Conclusion: There is need for a greater degree of standardization in instruments/methods used to assess environmental correlates of physical activity, taking into account the European-specific situation. A first step in this process is taken by the development of a European environmental questionnaire.

Keywords: Adult, Alpha, Assessment, Belgian Adults, Correlates, Determinants, Development, Environment, Environmental, Europe, Literature, Literature Review, Methods, Monitoring, Neighborhood Environment, Participation, Perceived Barriers, Perceptions, Physical Activity, Promotion, Public-Health, Quality, Quality of Life, Questionnaire, Questionnaires, Reliability, Research, Review, Scale, Science, Survey, US, Validity, Walking, Web of Science

? Krolner, R., Rasmussen, M., Brug, J., Klepp, K.I., Wind, M. and Due, P. (2011), Determinants of fruit and vegetable consumption among children and adolescents: A review of the literature. Part II: qualitative studies. *International Journal of Behavioral Nutrition and Physical Activity*, **8**, Article Number: 112.

Full Text: 2009\Int J Beh Nut Phy Act8, 112.pdf

Abstract: Background: Large proportions of children do not fulfil the World Health Organization recommendation of eating at least 400 grams of fruit and vegetables (FV) per day. To promote an increased FV intake among children it is important to identify factors which influence their consumption. Both qualitative and quantitative studies are needed. Earlier reviews have analysed evidence from quantitative studies. The aim of this paper is to present a systematic review of qualitative studies of determinants of children’s FV intake. Methods: Relevant studies were identified by searching Anthropology Plus, Cinahl, CSA illumine, Embase, International Bibliography of the Social Sciences, Medline, PsycINFO, and Web of Science using combinations of synonyms for FV intake, children/adolescents and qualitative methods as search terms. The literature search was completed by December 1st 2010. Papers were included if they applied qualitative methods to investigate 6-18-year-olds’ perceptions of factors influencing their FV consumption. Quantitative studies, review studies, studies reported in other languages than English, and non-peer reviewed or unpublished manuscripts were excluded. The papers were reviewed systematically using standardised templates for summary of papers, quality assessment, and synthesis of findings across papers. Results: The review included 31 studies, mostly based on US populations and focus group discussions. The synthesis identified the following potential determinants for FV intake which supplement the quantitative knowledge base: Time costs; lack of taste guarantee; satiety value; appropriate time/occasions/settings for eating FV; sensory and physical aspects; variety, visibility, methods of preparation; access to unhealthy food; the symbolic value of food for image, gender identity and social interaction with peers; short term outcome expectancies. Conclusions: The review highlights numerous potential determinants which have not been investigated thoroughly in quantitative studies. Future large scale quantitative studies should attempt to quantify the importance of these factors. Further, mechanisms behind gender, age and socioeconomic differences in FV consumption are proposed which should be tested quantitatively in order to better tailor interventions to vulnerable groups. Finally, the review provides input to the conceptualisation and measurements of concepts (i.e. peer influence, availability in schools) which may refine survey instruments and theoretical frameworks concerning eating behaviours.

Keywords: Adolescent, Adolescents, Aged Children, Assessment, Availability, Bibliography, Child, Children, Children, Adolescents, Costs, Determinants, Dietary Behaviors, Differences, Eating Behaviour, English, European Countries, Family, Focus Groups, Food, Fruit, Fruit and Vegetable Consumption, Gender, Health, Heart-Disease, Identity, International, Interventions, Knowledge, Literature, Manuscripts, Mechanisms, Medline, Methods, Middle Schools, Outcome, Papers, Perceptions, Physical-Activity, Preparation, Public-Health, Qualitative, Qualitative Methods, Quality, Quantitative, Review, School, School Food Environment, Schools, Science, Sciences, Social, Social Sciences, Survey, Synthesis, Systematic, Systematic Review, Systematic Reviews, Time, US, Vegetables, Visibility, Web of Science, Web-of-Science

# Title: International Journal of Bifurcation and Chaos

Full Journal Title: [International Journal of Bifurcation and Chaos](http://www.worldscinet.com/ijbc/19/1911/S02181274091911.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kostoff, R.N., Shlesinger, M.F. and Tshiteya, R. (2004), Nonlinear dynamics text mining using bibliometrics and Database Tomography. *International Journal of Bifurcation and Chaos*, **14** (1), 61-92.

Full Text: [2004\Int J Bif Cha14, 61.pdf](2004/Int%20J%20Bif%20Cha14,%2061.pdf)

Abstract: Database Tomography (DT) is a textual database analysis system consisting of two major components: (1) algorithms for extracting multiword phrase frequencies and phrase proximities (physical closeness of the multiword technical phrases) from any type of large textual database, to augment (2) interpretative capabilities of the expert human analyst. DT was used to derive technical intelligence from a Nonlinear Dynamics database derived from the Science Citation Index/Social Science Citation Index (SCI). Phrase frequency analysis by the technical domain experts provided the pervasive technical themes of the Nonlinear Dynamics database, and the phrase proximity analysis provided the relationships among the pervasive technical themes. Bibliometric analysis of the Nonlinear Dynamics literature supplemented the DT results with author/journal/institution publication and citation data.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Bibliometrics, Bifurcation, Chaos, Chaotic Attractors, Citation, Citation Index, Database, Dynamical Systems, Henon Map, Information Retrieval, Intelligence, Limit Cycle, Literature, Nonlinear Dynamics, Period-Doubling, Periodic Orbits, Poincare Map, Publication, Roadmaps, SCI, Science, Science Citation Index, Strange Attractors, System, Technical Intelligence, Text Mining, Text-Mining

# Title: International Journal of Biological Macromolecules

Full Journal Title: [International Journal of Biological Macromolecules](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5060&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=052ca7885601863654e36c4fff191588)

ISO Abbreviated Title: Int. J. Biol. Macromol.

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Biochemistry & Molecular Biology: Impact Factor 1.492, 185/310 (2000); Impact Factor 1.978, 148/308 (2001); Impact Factor 1.177, 193/266 (2002); Impact Factor 1.427, 189/261 (2003); Impact Factor 1.328, 193/261 (2004); Impact Factor 1.684, 180/261 (2005); Impact Factor 1.578, 198/263 (2007); Impact Factor 2.366, 164/283 (2009)

? Ishii, H., Minegishi, M., Lavitpichayawong, B. and Mitani, T. (1995), Synthesis of chitosan-amino acid conjugates and their use in heavy metal uptake. *International Journal of Biological Macromolecules*, **17** (1), 21-23.

Full Text: [1995\Int J Bio Mac17, 21.pdf](1995/Int%20J%20Bio%20Mac17,%2021.pdf)

Abstract: Chitosan-amino acid conjugates were prepared by coupling amino acid esters to the carboxyl group of glyoxylic acid-substituted chitosan. The removal of heavy metals (Cu, Ni, Co and Mn) was increased by introduction of amino acids to chitosan, especially for Mn. Heavy metals were almost completely removed by chitosan-amino acid conjugates from solutions at an initial concentration of 100 parts per million.

Keywords: Chitosan, Amino Acid, Heavy Metal Uptake, Eads, Adsorption, Ions

Scamparini, A., Mariuzzo, D., Fujihara, H., Jacobusi, R. and Vendruscolo, C. (1997), Structural studies of CV-70 polysaccharide. *International Journal of Biological Macromolecules*, **21** (1-2), 115-121.

Full Text: [I\Int J Bio Mac21, 115.pdf](I/Int%20J%20Bio%20Mac21,%20115.pdf)

Abstract: The goal of this paper is the characterization of the chemical structure of the water-soluble polysaccharide, CV-70, produced by bacteria Beijerinckia sp. Beijerinckia sp. is a genus of gram-negative, aerobic bacteria, usually found in sugar cane root. The CV-70 polysaccharide was produced in a fermentation medium containing 5% sucrose as the carbon source, tryptose and salts, at 25 degrees C [1]. The polysaccharide was hydrolyzed with 2 N trifluoroacetic acid at 100 degrees C for 16 h, purified, and analyzed by HPLC. Index of refraction was used for the detection of sugars. For GC-MS analysis, the CV-70 polysaccharide was derivatized through methylation and acetylation. Together with the GC-MS data, periodate oxidation studies were used to determine the possible glucosidic linkages. Carbon-13 NMR studies were carried out with hydrolyzed and silylated samples. Glucose, galactose and fucose were identified as the components in the CV-70 polysaccharide, in a 3:1:3 ratio. (C) 1997 Elsevier Science B.V.

Keywords: CV-70 Polysaccharide, Water Soluble, Beijerinckia sp., Liquid-Chromatography, Mass-Spectrometry

Guibal, E., Milot, C., Eterradossi, O., Gauffier, C. and Domard, A. (1999), Study of molybdate ion sorption on chitosan gel beads by different spectrometric analyses. *International Journal of Biological Macromolecules*, **24** (1), 49-59.

Full Text: [I\Int J Bio Mac24, 49.pdf](I/Int%20J%20Bio%20Mac24,%2049.pdf)

Abstract: Molybdate ion uptake both by raw chitosan and by glutaraldehyde cross-linked chitosan beads was investigated. This study focused on the identification of sorption mechanisms by means of several analytical procedures such as infra-red and reflectance spectrophotometries and CP-MAS C-13 NMR analyses. Although the amine functions of glucosamine residues remain the major sites of interaction with the metal species, other functional groups can also be involved. It is certainly the case with carbonyl functions provided by the glutaraldehyde structure in cross-linked sorbents, Due to the large size of the polynuclear hydrolysed molybdate species, the sorption may involve several monomer units, resulting in additional linkages between the polymer chains. This behaviour can be confirmed by the chemical shifts of the carbon atoms observed by CP-MAS C-13 NMR on raw chitosan beads, showing that the carbon atoms supporting the amino sites are not the only atoms affected by molybdate ion sorption. Moreover, cross-linking promotes a partial reduction of molybdenum species in the presence of some unreacted aldehyde groups. (C) 1999 Elsevier Science B.V. All rights reserved.

Keywords: Adsorption, Biosorption, C-13 NMR Spectrometry, Chitosan, Chitosan Gel Beads, Complexes, Gel Beads, Infra-Red Spectrometry, IR, Metal-Ions, Molybdate, Molybdate Ions, Multinuclear NMR-Spectroscopy, N-Acetylation, Polymorphs, Reflectance Spectrometry, *Rhizopus-arrhizus*, Solid-State NMR, Sorption

Zhang, M., Haga, A., Sekiguchi, H. and Hirano, S. (2000), Structure of insect chitin isolated from beetle larva cuticle and silkworm (*Bombyx Mori*) pupa exuvia. *International Journal of Biological Macromolecules*, **27** (1), 99-105.

Full Text: [I\Int J Bio Mac27, 99.pdf](I/Int%20J%20Bio%20Mac27,%2099.pdf)

Abstract: Chitin samples in a cl-form structure were isolated from beetle larva cuticle and silkworm (Bombyx mori) pupa exuvia by treatment with 1 N HCl and 1 N NaOH. Chitosan was prepared by treating them in 40% NaOH containing NaBH4. Chitin and chitosan were analyzed by X-ray, [C-13]CP/MAS NMR, [C-13]FT-NMR, and scanning electron microscopy (SEM) methods. Insect chitin degraded more readily than shrimp chitin when treated with 6 N HCl and the enzyme-chitinase. After treatment with 2 N HCl at 100 degrees C, the insect chitin crystallinity increased. N-deacetylation of insect chitin was easier than that of crustaceous chitin, and about 94% of the N-acetyl groups were removed in one treatment with 40% NaOH for 4 h at 110 degrees C. After treatment with 2 N HCl, 55% of the N-acetyl groups of silkworm chitin were removed under the same conditions. Beetle chitin showed a higher affinity for chitinase than shrimp chitin. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Beetle Larva Cuticle, Silkworm Exuvia, Chitin, Chitosan, Alpha-Form Structure, Degree of Crystallinity, N-Acetylchitosan, Beta-Chitin, Solid-State, Chitosan, C-13, NMR, Spectroscopy, Derivatives

Guibal, E., Sweeney, N.V., Zikan, M.C., Vincent, T. and Tobin, J.M. (2001), Competitive sorption of platinum and palladium on chitosan derivatives. *International Journal of Biological Macromolecules*, **28** (5), 401-408.

Full Text: [I\Int J Bio Mac28, 401.pdf](I/Int%20J%20Bio%20Mac28,%20401.pdf)

Abstract: Glutaraldehyde-cross-linked chitosan (GCC), thiourea derivative of chitosan (TGC) and rubeanic acid derivative of chitosan (RADC) have previously been shown to be very efficient at removing platinum and palladium from single component dilute acidic solutions. This study examines the competitive sorption of these metal anions in bi-component mixtures for GCC, TGC and RADC. Palladium sorption is less sensitive to the presence of platinum than the reverse: the maximum sorption capacity decreases less for palladium than for platinum in the presence of the competitor anion (the metals being in their chloro-metal forms). Moreover, the Langmuir-shape of the sorption isotherm for palladium is unaffected (with the usual plateau reached at low residual palladium), while in the case of platinum sorption, the isotherms exhibit a significant decrease of the sorption capacity at high residual platinum concentration which increases with increasing concentrations of palladium. RADC is more selective for palladium over platinum than the other chitosan derivatives. A preliminary study of the competitive sorption kinetics in both batch and fixed bed systems is presented for RADC and confirms the higher affinity of the sorbent for palladium than for platinum. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Adsorption, Beads, Biosorption, Breakthrough Curves, Chitosan, Chitosan Derivatives, Equilibrium, Extraction, Fully Deacetylated Chitosan, Glutaraldehyde Cross-Linking, Isotherms, Kinetics, Kinetics, Metal- Ions, N-Carboxymethyl Chitosan, Palladium, Platinum, Removal, Rubeanic Acid, Rubeanic Acid Grafting, Sorption, Sorption Isotherm, Sorption Kinetics, Thiourea, Thiourea Grafting

Miyamoto, K., Uchiyama, R., Tokita, M., Yonekawa, M., Kawamura, A., Miyashita, K., Sakashita, E. and Komai, T. (2001), Development of a novel polycationic adsorbent for cryogel removal. *International Journal of Biological Macromolecules*, **29** (1), 19-24.

Full Text: [I\Int J Bio Mac29, 19.pdf](I/Int%20J%20Bio%20Mac29,%2019.pdf)

Abstract: Cryogel, prevalent in the plasma of rheumatism patients, is a plasma fibronectin (pFN)-extra domain A containing FN (EDA(+)FN)–fibrinogen (Fbg) complex formed by adding heparin (HP) at a low temperature (4°C). Although EDA(+)FN does not usually exist in normal plasma, its prevalence in rheumatic patients causes cryogelation in plasma. Removal of cryogel is thus a promising and novel approach to treating rheumatism. As HP-EDA(+)FN aggregate, which is induced by the main component of cryogel, is considered to be an anion, cationic materials capable of eliminating this anionic conjugate were innovated in this study. We found that an amino group density of 100–130 μmol/g (dry weight) of adsorbents prompted selective adsorption of the EDA(+)FN–HP complex. Elimination of EDA(+)FN as high as 80% accompanied by removal of the components of total FN (pFN) (10%) and Fbg (10%) in the model patient plasma was established.

Keywords: Cryogel, EDA(+)Fibronectin, Heparin, Adsorbent

Guzman, J., Saucedo, I., Revilla, J., Navarro, R. and Guibal, E. (2003), Copper sorption by chitosan in the presence of citrate ions: Influence of metal speciation on sorption mechanism and uptake capacities. *International Journal of Biological Macromolecules*, **33** (1-3), 57-65.

Full Text: [I\Int J Bio Mac33, 57.pdf](I/Int%20J%20Bio%20Mac33,%2057.pdf)

Abstract: The presence of organic ligands in a solution containing metal ions modifies metal speciation, which in turn changes the sorption mechanism, optimum pH range and maximum sorption capacity. The present work investigates the sorption of copper by chitosan in the presence of citrate at different metal/ligand ratios. Copper uptake in acidic solution takes place through electrostatic attraction between the protonated amine groups of chitosan and anionic copper-citrate complexes (mainly Cu(OH)L2- but also a small fraction of CuL-). Sorption was negligible below pH 3 due to competition from dissociated anionic ligand and counter ions brought about by dissociation of the acid used for pH control. Actually, copper sorption begins to be significant when the fraction of anionic copper-complexes exceeds that of anionic copper-free ligand. So sorption capacity strongly increases up to pH 4.5-5.5. Above pH 5.5, the progressive decrease of amine protonation leads to a linear decrease in sorption capacity. An excess of ligand leads to an increase in the fraction of free dissociated (anionic) ligand that may compete for electrostatic attraction on protonated amine groups and therefore leads to a decrease in sorption capacities. (C) 2003 Elsevier B.V. All rights reserved.

Keywords: Chitosan, Copper, Citrate, Metal Speciation, pH Effect, Sorption Isotherms, Electrostatic Attraction, Chelation, Polymer Protonation, Cross-Linked Chitosan, Molybdate Sorption, Uranyl Ions, Physicochemical Parameters, Polymer Properties, Platinum Sorption, Aqueous-Solutions, Adsorption, Beads, Equilibrium

Wan Ngah, W.S., Kamari, A. and Koay, Y.J. (2004), Equilibrium and kinetics studies of adsorption of copper(II) on chitosan and chitosan/PVA beads. *International Journal of Biological Macromolecules*, **34** (3), 155-161.

Full Text: [I\Int J Bio Mac34, 155.pdf](I/Int%20J%20Bio%20Mac34,%20155.pdf)

Abstract: The adsorption of Cu(II) ions from aqueous solution by chitosan and chitosan/PVA beads was studied in a batch adsorption system. Chitosan solution was blended with poly(vinyl alcohol) (PVA) in order to obtain sorbents that are insoluble in aqueous acidic and basic solution. The adsorption capacities and rates of Cu(II) ions onto chitosan and chitosan/PVA beads were evaluated. The Langmuir, Freundlich and BET adsorption models were applied to describe the isotherms and isotherm constants. Adsorption isothermal data could be well interpreted by the Langmuir model. The kinetic experimental data properly correlated with the second-order kinetic model, which indicates that the chemical sorption is the rate-limiting step. The Cu(II) ions can be removed from the chitosan and chitosan/PVA beads rapidly by treatment with an aqueous EDTA solution. Results also showed that chitosan and chitosan/PVA beads are favourable adsorbers. (C) 2004 Elsevier B.V. All rights reserved.

Keywords: Chitosan Beads, Chitosan/PVA Beads, Adsorption Capacities, Adsorption Rates, Adsorption Isotherm, Desorption, Cross-Linked Chitosan, Aqueous-Solutions, Reactive Dye, Humic-Acid, Sorption, Ions, Behavior, Metal, Lead(II), Removal

? Wan Ngah, W.S. (2006), Reply to comment of “Prof. Y.S. Ho” on [Int. J. Biol. Macromol. 34 (2004) 155–161]. *International Journal of Biological Macromolecules*, **38** (1), 77.

Full Text: [2006\Int J Bio Mac38, 77.pdf](2006/Int%20J%20Bio%20Mac38,%2077.pdf)

? Altıntaş, E.B. and Denizli, A. (2006), Monosize poly(glycidyl methacrylate) beads for dye-affinity purification of lysozyme. *International Journal of Biological Macromolecules*, **38** (2), 99-106.

Full Text: [2006\Int J Bio Mac38, 99.pdf](2006/Int%20J%20Bio%20Mac38,%2099.pdf)

Abstract: Cibacron Blue F3GA was covalently attached onto monosize poly(glycidyl methacrylate) [poly(GMA)] beads for purification of lysozyme from chicken egg white. Monosize poly(GMA) beads, 1.6 μm in diameter, were produced by a dispersion polymerization technique. The content of epoxy groups on the surface of the poly(GMA) sample determined by the HCl–pyridine method (3.8 mmol/g). Cibacron Blue F3GA loading was 1.73 mmol/g. The monosize beads were characterized by elemental analysis, FTIR and SEM. Adsorption studies were performed under different conditions in a batch system (i.e., medium pH, protein concentration, temperature and ionic strength). Maximum lysozyme adsorption amount of poly(GMA) and poly(GMA)-Cibacron Blue F3GA beads were 1.6 and 591.7 mg/g, respectively. The applicability of two kinetic models including pseudo-first order and pseudo-second order model was estimated on the basis of comparative analysis of the corresponding rate parameters, equilibrium adsorption capacity and correlation coefficients. Results suggest that chemisorption processes could be the rate-limiting step in the adsorption process. It was observed that after 10 adsorption–elution cycle, poly(GMA)-Cibacron Blue F3GA beads can be used without significant loss in lysozyme dsorption capacity. Purification of lysozyme from egg-white was also investigated. Purification of lysozyme was monitored by determining the lysozyme activity using Micrococcus lysodeikticus as substrate. The purity of the eluted lysozyme was analyzed by SDS-PAGE and found to be 88% with recovery about 79%. The specific activity of the eluted lysozyme was high as 43,600 U/mg.

Keywords: Cibacron Blue F3GA, Protein Purification, Lysozyme, Monosize Beads, Dye Affinity

? Türkmen, D., Yavuz, H. and Denizli, A. (2006), Synthesis of tentacle type magnetic beads as immobilized metal chelate affinity support for cytochrome *c* adsorption. *International Journal of Biological Macromolecules*, **38** (2), 126-133.

Full Text: [2006\Int J Bio Mac38, 126.pdf](2006/Int%20J%20Bio%20Mac38,%20126.pdf)

Abstract: Magnetic poly(2-hydroxyethylmethacrylate) (mPHEMA) beads with an average diameter of 100–140 μm were produced by suspension polymerization in the presence of magnetite particles (i.e. Fe3O4). Specific surface area and average pore size of the magnetic beads was found to be 50 m2/g and 819 nm, respectively. Ester groups in the mPHEMA structure were converted to imine groups by reacting with poly(ethyleneimine) (PEI) in the presence of NaH. Amino (–NH2) content of PEI-attached mPHEMA beads was determined as 102 mg PEI/g. Then, Cu2+ ions were chelated on the magnetic beads in the range of 20–793 μmol Cu2+/g. Cytochrome c (cyt c) adsorption was performed on the metal chelating beads from aqueous solutions containing different amounts of cyt c at different pHs, Cu2+ loadings and temperatures. Cyt c adsorption on the mPHEMA/PEI beads was 4.6 mg/g. Cu2+ chelation increased the cyt c adsorption significantly (40.1 mg/g). Adsorption capacity increased with Cu2+ loading and then reached a saturation value. Cyt c adsorption decreased with increasing temperature. Cyt c molecules could be reversibly adsorbed and eluted ten times with the magnetic adsorbents without noticeable loss in their cyt c adsorption capacity. The applicability of two kinetic models including pseudo-first order and pseudo-second order model was estimated on the basis of comparative analysis of the corresponding rate parameters, equilibrium capacity and correlation coefficients. Results suggest that chemisorption processes could be the rate-limiting step in the adsorption process. In the last part of this article, cyt c adsorption experiments were performed in a magnetically stabilized fluidized bed (MSFB) system at optimum conditions determined from the batch experiments. The adsorption capacity decreased significantly from 46.8 to 15.4 mg/g polymer with the increase of the flow-rate from 0.5 to 4.0 ml/min. The resulting magnetic chelator beads possessed excellent long-term storage stability.

Keywords: Affinity Chromatography, Metal-Chelate Affinity Beads, Polyethyleneimine; Cytochrome C, Magnetic Beads

? Ho, Y.S. (2006), Comment on Equilibrium and kinetics studies of adsorption of copper(II) on chitosan and chitosan/PVA beads. *International Journal of Biological Macromolecules*, **38** (2), 148-149.

Full Text: [2006\Int J Bio Mac38, 148.pdf](2006/Int%20J%20Bio%20Mac38,%20148.pdf); [2006\Int J Bio Mac-Ho1.pdf](2006/Int%20J%20Bio%20Mac-Ho1.pdf); [2006\Int J Bio Mac-Ho.pdf](2006/Int%20J%20Bio%20Mac-Ho.pdf)

Keywords: Adsorption, Aqueous-Solution, Beads, Chitosan, Chitosan, PVA, Citation, Citation Error, Comment on, Copper(II), Equilibrium, Kinetics, MAR, Pseudo-First-Order, Pseudo-Second-Order, Quotation Error, Reactive Dye, Sorption

? Wu, J.M., Luan, M.M. and Zhao, J.Y. (2006), Trypsin immobilization by direct adsorption on metal ion chelated macroporous chitosan-silica gel beads. *International Journal of Biological Macromolecules*, **39** (4-5), 185-191.

Full Text: [2006\Int J Bio Mac39, 185.pdf](2006/Int%20J%20Bio%20Mac39,%20185.pdf)

Abstract: Silica gel bead coated with macroporous chitosan layer (CTS-SiO2) was prepared, and the metal immobilized affinity chromatographic (IMAC) adsorbents could be obtained by chelating Cu2+, Zn2+, Ni2+ ions respectively on CTS-SiO2, and trypsin could be adsorbed on the IMAC adsorbent through metal-protein interaction forces. Batch adsorption experiments show that adsorption capacity for trypsin on these IMAC adsorbent variated with change of pH. The maximal adsorption reached when the solution was in near neutral pH in all three IMAC adsorbents. Adsorption isothermal curve indicated that maximal adsorption capacity could be found in the Cu2+-CTS-SiO2 with the value of 4980±125 IU per gram of the adsorbent, while the maximal adsorption capacity for trypsin on Zn2+ and Ni2+ loaded adsorbent was 3762±68 IU.g-1 and 2636±53 IU. g-1 respectively. Trypsin immobilized on the IMAC beads could not be desorbed by water, buffer and salt solution if the pH was kept in the range of 5~10, and could be easily desorbed from the IMAC beads by acidic solution and metal chelating species such as EDTA and imidazole. The effect of chelated metal ions species on CTS-SiO2 beads on the activity and stability of immobilized trypsin was also evaluated and discussed. Trypsin adsorbed on Zn-IMAC beads retained highest amount of activity, about 78% of total activity could be retained. Although the Cu-IMAC showed highest affinity for trypsin, only 25.4% of the calculated activity was found on the beads, while the activity recovery found on Ni-IMAC beads was about 37.1%. A remarkable difference on stability of trypsin immobilized on three kinds of metal ion chelated beads during storage period was also found. Activity of trypsin on Cu-IMAC decreased to 24% of its initial activity after one-week storage at 4°C, while about 80% activity was retained on both Ni-IMAC and Zn-IMAC beads. Trypsin immobilized on Zn-CTS-SiO2 could effectively digest BSA revealed by HPLC peptide mapping.

Keywords: IMAC Adsorbent, Chitosan, Trypsin, Immobilization, Activity

? Ding, P., Huang, K.L., Li, G.Y., Liu, Y.F. and Zeng, W.W. (2006), Kinetics of adsorption of Zn(II) ion on chitosan derivatives. *International Journal of Biological Macromolecules*, **39** (4-5), 222-227.

Full Text: [2006\Int J Bio Mac39, 222.pdf](2006/Int%20J%20Bio%20Mac39,%20222.pdf)

Abstrct: The adsorption of Zn(II) ions from aqueous solution by chitosan derivatives (KCTS and HKCTS) was studied in a batch adsorption system. The adsorption capacities and rates of Zn(II) ions onto chitosan derivatives were evaluated. The adsorption isothermal data could be well interpreted by the Langmuir and Freundlich models. The kinetic experimental data properly correlated with the second-order kinetic model, which indicates that the chemical adsorption is the rate-limiting step. The apparent adsorption activation energy were 25.47 kJ/mol and 5.473 kJ/mol, respectively, and the second-order adsorption constant for KCTS and HKCTS were 0.00311g.mg-1.min-1 and 0.005 g.mg-1.min-1, respectively.

Keywords: Chitosan Derivatives, Zn(II) Ion, Adsorption Kinetics

? Vitalia, L., Laranjeira, M.C.M., Gonçalves, N.S. and Fávere, V.T. (2008), Spray-dried chitosan microspheres containing 8-hydroxyquinoline-5 sulphonic acid as a new adsorbent for Cd(II) and Zn(II) ions. *International Journal of Biological Macromolecules*, **42** (2), 152-157.

Full Text: [2008\Int J Bio Mac42, 152.pdf](2008/Int%20J%20Bio%20Mac42,%20152.pdf)

Abstract: In the present study, a new chelating adsorbent was prepared from chitosan microspheres cross-linked with glutaraldehyde by spray drying using 8-hydroxyquinoline-5 sulphonic acid as chelant agent (CTS-SX-CL). Microspheres of the new adsorbent were characterized by Raman spectroscopy, scanning electron microscopy (SEM) and energy-dispersive X-ray microanalysis (EDX). The effect of pH, contact time and concentration of metallic ions in solution were evaluated on the adsorption behavior of Cd(II) and Zn(II) by CTS-SX-CL. Adsorption was maximum for both Cd(II) and Zn(II) at pH 8.0. Adsorption kinetic curves were obtained and could be fit by the pseudo second-order adsorption model. An analysis of equilibrium adsorption data using the Langmuir isotherm model indicated that the maximum adsorption capacity of CTS-SX-CL was higher than that of CTS-CL for both ions investigated. The adsorption capacity increased 74% for Cd(II). (C) 2007 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Adsorption Behavior, Analysis, Behavior, Capacity, Cd(II), Chitosan, Equilibrium, Glutaraldehyde, Isotherm, Kinetic, Langmuir, Langmuir Isotherm, Model, pH, Pseudo Second-Order, Rights, Scanning Electron Microscopy, SEM, Solution, Spectroscopy

? Wang, L., Xing, R.E., Liu, S., Cai, S.B., Yu, H.H., Feng, J.H., Li, R.F. and Li, P.C. (2010), Synthesis and evaluation of a thiourea-modified chitosan derivative applied for adsorption of Hg(II) from synthetic wastewater. *International Journal of Biological Macromolecules*, **46** (5), 524-528.

Full Text: [2010\Int J Bio Mac46, 524.pdf](2010/Int%20J%20Bio%20Mac46,%20524.pdf)

Abstract: In this work, a thiourea-modified chitosan derivative (TMCD) was synthesized through two steps, O-carboxymethylated first and then modified by a polymeric Schiff’s base of thiourea/glutaraldehyde. The adsorption behavior of mercury (II) ions onto TMCD was investigated through batch method. The maximum adsorption capacity for Hg(II) was found to be 6.29 mmol/g at pH 5.0 and both kinetic and thermodynamic parameters of the adsorption process were obtained. The results indicated that adsorption process was spontaneous exothermic reaction and kinetically followed pseudo-second-order model. The adsorption experiments also demonstrated TMCD had high adsorption selectivity towards Hg(II) ions when coexisted with Cu(II), Zn(II), Cd(II) and Ca(II) in solution and it could be easily regenerated and efficiently reused. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Aqueous-Solutions, Chelating Resin, Chitosan, Desorption, Equilibrium, Extraction, Glutaraldehyde, Hg(II), Hg(II) Ions, Kinetic, Maximum Adsorption Capacity, Mercury, Mercury(II), Palladium(II), Removal, Sorption, Synthesis, Thiourea

? Gandhi, M.R., Viswanathan, N. and Meenakshi, S. (2010), Preparation and application of alumina/chitosan biocomposite. *International Journal of Biological Macromolecules*, **47** (2), 146-154.

Full Text: [2010\Int J Bio Mac47, 146.pdf](2010/Int%20J%20Bio%20Mac47,%20146.pdf)

Abstract: A new chitosan based biocomposite was prepared using alumina and used for the removal of chromium from the aqueous solution. The synthesized alumina/chitosan (AlCs) composite possesses an enhanced chromium sorption capacity (SC) of 8.62 mg/g than the original alumina and chitosan flakes that possess the SCs of 3.7 and 0.67 mg/g respectively, with a minimum contact period of 30 min. The sorption experiments were carried out in batch mode to optimize various parameters viz., contact time, initial chromium concentration, pH, co-ions and temperature that influence the sorption. The sorbents were characterized by FTIR, AFM, BET and SEM with EDAX analysis. The composite removes chromium by means of electrostatic adsorption coupled reduction and complexation. The adsorption data were fitted with Freundlich, Langmuir and Dubinin-Radushkevich (D-R) isotherms. The calculated values of thermodynamic parameters indicate the nature of chromium sorption. The dynamic studies demonstrate that the sorption process follows pseudo-second-order and intraparticle diffusion models. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, AFM, Alumina, Analysis, Application, Aqueous Solution, Aqueous-Solution, Batch, Batch Mode, BET, Capacity, Chitosan, Chitosan, Chromium, Complexation, Composite, Composite, Concentration, Data, Diffusion, Dynamic, Dynamic Studies, Edax, Equilibrium, Experiments, Fluoride, Freundlich, FTIR, Heavy-Metal Ions, Hexavalent Chromium, Intraparticle Diffusion, Isotherms, Langmuir, Minimum, Mode, Models, pH, Preparation, Pseudo Second Order, Pseudo-Second-Order, Reduction, Removal, Rights, SEM, Solution, Sorbents, Sorption, Sorption, Sorption Capacity, Sorption Process, Temperature, Thermodynamic, Thermodynamic Parameters

? Singh, V. and Maurya, S. (2010), Microwave synthesis, characterization, and zinc uptake studies of starch-graft-poly(ethylacrylate). *International Journal of Biological Macromolecules*, **47** (3), 348-355.

Full Text: [2010\Int J Bio Mac47, 348.pdf](2010/Int%20J%20Bio%20Mac47,%20348.pdf)

Abstract: Microwave synthesis of starch-graft-poly(ethylacrylate) was optimized to obtain efficient Zn(II) adsorbent that has been characterized using IR, XRD and SEM analyses. Using the sample, adsorption of Zn(II) was studied as a function of pH, sorbent dose, initial Zn(II) concentration, % grafting, temperature and ionic strength. Equilibrium isotherm data were analyzed using the Langmuir and Freundlich isotherms at optimum pH (pH 8) where the data fitted satisfactorily well to both the isotherms indicating sorption of Zn(II) on the copolymer was complex and involved more than one mechanism. Isotherms have also been used to obtain the thermodynamic parameters such as free energy, enthalpy, and entropy of sorption. At 30ºC, the maximum sorption capacity of the microwave synthesized copolymer was 172 mg g-1 as compared to 116 mg g-1 for the conventionally synthesized starch-graft-poly(ethylacrylate) indicating the advantage of using microwaves in the copolymer synthesis. In order to investigate the mechanism of sorption,kinetic data were modeled using the first order Lagergren, pseudo-second-order and intra-particle diffusion models where chemisorption seem significant in the rate controlling step. The regeneration experiments revealed that the starch-graft-poly(ethylacrylate) can be successfully reused for five cycles without any significant loss in the sorption capacity. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Analyses, Aqueous-Solutions, Cadmium(II), Capacity, Characterization, Chemisorption, Concentration, Copolymer, Data, Diffusion, Energy, Enthalpy, Entropy, Equilibrium, Equilibrium Isotherm, Ethylacrylate, Experiments, First, First Order, Fly-Ash, Freundlich, Function, Graft-Copolymerization, Grafting, Intra-Particle Diffusion, Intraparticle Diffusion, Ionic Strength, Ions, IR, Isotherm, Isotherms, Kaolin, Langmuir, Langmuir and Freundlich Isotherms, Mechanism, Microwave, Microwave Irradiation, Microwaves, Models, pH, Pseudo Second Order, Pseudo-Second-Order, Regeneration, Removal, Rights, SEM, Soluble Potato Starch, Sorbent, Sorbent Dose, Sorption, Sorption Capacity, Strength, Synthesis, Temperature, Thermodynamic, Thermodynamic Parameters, Uptake, XRD, Zinc, Zn(II), Zn(II) Removal

? Sharma, A.K. and Mishra, A.K. (2010), Microwave induced beta-cyclodextrin modification of chitosan for lead sorption. *International Journal of Biological Macromolecules*, **47** (3), 410-419.

Full Text: [2010\Int J Bio Mac47, 410.pdf](2010/Int%20J%20Bio%20Mac47,%20410.pdf)

Abstract: Microwave induced copolymerization of beta-cyclodextrin (beta-CD) and chitosan (Ch) resulted in copolymer Ch-g-beta-CD synthesized without any radical initiator or catalyst. Copolymer samples of different performances in terms of Pb(II) binding were synthesized by changing beta-CD concentration at fixed microwave power and exposure time. To understand the advantage of using microwaves in the adsorbent synthesis, the copolymer synthesized using a K2S2O8/ascorbic acid redox pair at identical beta-CD and Chitosan concentrations (% G 103) was also evaluated as Pb(II) sorbent, and the results obtained were compared with that of microwave synthesized copolymer. A representative sample of microwave synthesized adsorbent was characterized using FTIR spectroscopy, X-ray diffraction, TGA, SEM analysis and using this sample adsorption of lead (II) was studied as a function of pH, initial Pb(II) concentration. The adsorption data followed both Freundlich and Langmuir isotherms. On the basis of the Langmuir model, *Q*max was calculated to be 434.78 mg/g for microwave synthesized copolymer (Ch-g-beta-CD) in comparison to 294.11 mg/g for conventionally synthesized copolymer (Ch-g-beta-CD). In order to investigate dynamic behaviour of Ch-g-beta-CD as an adsorbent, the kinetic data were modelled using pseudo-second-order and second-order. The regeneration experiments revealed that the Ch-g-beta-CD can be successfully reused for seven cycles. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorbents, Adsorption, Analysis, Aqueous-Solution, Ascorbic Acid, Behaviour, Beta-Cyclodextrin, Binding, Catalyst, Ch-G-Beta-Cd, Chitosan, Chromium(VI), Comparison, Concentration, Copolymer, Copolymerization, Data, Derivatives, Dynamic, Experiments, Exposure, Freundlich, FTIR, FTIR Spectroscopy, Function, Graft-Copolymerization, Induced, Irradiation, Isotherms, Kinetic, Langmuir, Langmuir Isotherms, Langmuir Model, Lead, Microwave, Microwave Irradiation, Microwaves, Model, Modification, Pb(II), Pb(II) Removal, pH, Power, Pseudo Second Order, Pseudo-Second-Order, Regeneration, Removal, Rights, Second Order, Second-Order, SEM, Sorbent, Sorption, Spectroscopy, Synthesis, TGA, Waste, X-Ray, X-Ray Diffraction

? Abou El-Reash, Y.G., Otto, M., Kenawy, I.M. and Ouf, A.M. (2011), Adsorption of Cr(VI) and As(V) ions by modified magnetic chitosan chelating resin. *International Journal of Biological Macromolecules*, **49** (4), 513-522.

Full Text: [2011\Int J Bio Mac49, 513.pdf](2011/Int%20J%20Bio%20Mac49,%20513.pdf)

Abstract: Cross-linked magnetic chitosan anthranilic acid glutaraldehyde Schiffs base (CAGS) was prepared for adsorption of both As(V) and Cr(VI) ions and their determination by ICP-OES. Prepared cross-linked magnetic CAGS was investigated by means of SEM, FTIR, wide angle X-ray diffraction (WAXRD) and TGA analysis. The adsorption properties of cross-linked magnetic CAGS resin toward both As(V) and Cr(VI) were evaluated. Various factors affecting the uptake behavior such as pH, temperature, contact time, initial concentration of metal ions, effect of other ions and desorption were studied. The equilibrium was achieved after about 110 min and 120 min for As(V) and Cr(VI), respectively at pH = 2. The adsorption kinetics followed the mechanism of the pseudo-second order equation for all systems studied, evidencing chemical sorption as the rate-limiting step of adsorption mechanism and not involving a mass transfer in solution. The equilibrium data were analyzed using the Langmuir, Freundlich, and Tempkin isotherm models. The best interpretation for the equilibrium data was given by Langmuir isotherm, and the maximum adsorption capacities were 58.48 and 62.42 mg/g for both Cr(VI) and As(V), respectively. Cross-linked magnetic CAGS displayed higher adsorption capacity for Cr(VI). The adsorption capacity of the metal ions increased with increasing temperature under optimum conditions in case of Cr(VI), but decreased in case of As(V). The metal ion-loaded cross-linked magnetic CAGS were regenerated with an efficiency of greater than 88% using 0.2 M sodium hydroxide (NaOH). (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Aqueous-Solutions, Chitosan, Chromium, Cr(VI), Cu(II), Drinking-Water, FTIR, Hg(II), Isotherm, Kinetics, Langmuir, Magnetic Resin, Mortality, Ni(II) Ions, pH, Removal, Schiff’s Base, Sorption, Well Water

? Huang, X.Y., Bu, H.T., Jiang, G.B. and Zeng, M.H. (2011), Cross-linked succinyl chitosan as an adsorbent for the removal of Methylene Blue from aqueous solution. *International Journal of Biological Macromolecules*, **49** (4), 643-651.

Full Text: [2011\Int J Bio Mac49, 643.pdf](2011/Int%20J%20Bio%20Mac49,%20643.pdf)

Abstract: Removal of a basic dye (Methylene Blue) from aqueous solution was investigated using a cross-linked succinyl-chitosan (SCCS) as sorbent. The chemical structures of chitosan and its derivatives were testified by FT-IR. X-ray diffraction, DTG analysis and swelling measurements were conducted to clarify the characteristics of the chemically modified chitosan. The effect of process parameters, such as pH of the initial solution, and concentrations of dyes on the extent of Methylene Blue (MB) adsorption was investigated. The Langmuir isotherm model was used to fit the equilibrium experimental data, giving a maximum sorption capacity of 289.02 mg/g at 298 K. Kinetic studies showed that the kinetic data were well described by the pseudo-second-order kinetic model. Thermodynamic parameters such as enthalpy change (ΔH°), free energy change (ΔG°) and entropy change (ΔS°) were determined to be -25.32 kJ mol-1, -6.76 kJ mol-1 and -62.36 J mol-1 K-1, respectively, which leads to a conclusion that the adsorption process is spontaneous and exothermic. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Behavior, Basic Dye, Basic-Dyes, Batch, Biosorption, Chitosan Derivative, Derivatives, Dye Removal, FTIR, Hydrobeads, Isotherm, Kinetic, Kinetics, Langmuir, Mechanism, pH, Reactive Dye, Removal, Sorption, Thermodynamic, Thermodynamic Parameters, Wastewater Treatment

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? Forman, D., Sitas, F., Newell, D.G., Stacey, A.R., Boreham, J., Peto, R., Campbell, T.C., Li, J. and Chen, J. (1990), Geographic association of *Helicobacter pylori* antibody prevalence and gastric cancer mortality in rural China. *International Journal of Cancer*, **46** (4), 608-611.

Full Text: [1990\Int J Can46, 608.pdf](1990/Int%20J%20Can46,%20608.pdf)

Keywords: China

? Rogers, M.A.M., Thomas, D.B., Davis, S., Weiss, N.S., Vaughan, T.L. and Nevissi, A.E. (1991), A case-control study of oral-cancer and prediagnostic concentrations of selenium and zinc in nail tissue. *International Journal of Cancer*, **48** (2), 182-188.

Full Text: [1991\Int J Can48, 182.pdf](1991/Int%20J%20Can48,%20182.pdf)

Abstract: A case-control study of oral cancer was conducted in western Washington state between 1983 and 1987. Cases (n = 379) were identified through a population-based registry, and controls (n = 514) were selected by telephone using random digit dialing. Subjects participated in a personal interview, completed a food-frequency questionnaire, and submitted clippings from the nails of each great toe for the determination of selenium and zinc concentrations. The odds ratio (OR) for low selenium levels in nail tissue (lowest 25% of the distribution compared to the upper 75%) was 1.4 (95% confidence interval (Cl) 1.0-2.2). Likewise, the odds ratio for low zinc levels in nails was 1.6 (95% Cl 1.0-2.3), but for low dietary zinc was 1.0 (95% Cl 0.7-1.7). Men with oral cancer had lower nail selenium levels than did the controls (OR = 1.9), but women with oral cancer did not (OR = 0.6). Individuals 20 to 39 years of age with oral cancer, in particular, were more likely to have lower selenium levels in nail tissue than controls (OR = 16.4). There was a significant interaction between selenium and ascorbic acid levels which could not be explained by cigarette use. Subjects at greatest risk had low levels of both nutrients (OR = 3.8 for smokers and OR = 5.7 for non-smokers). However, since the elements were deposited in the nail matrix close to the date of diagnosis, the differences in the element concentrations between cases and controls may have been a result of the disease. Further etiologic studies of selenium, vitamin intake and oral carcinoma are warranted.

? Lantz, J.M., Meyer, C., Saussine, C., Leberquier, C., Heysel, F., Miehe, J., Marescaux, J., Sultan, R. and Kedinger, M. (1992), Experimental photodynamic therapy with a copper metal vapor laser in colorectal cancer. *International Journal of Cancer*, **52** (3), 491-498.

Full Text: [1992\Int J Can52, 491.pdf](1992/Int%20J%20Can52,%20491.pdf)

Abstract: In an attempt to define the best conditions for an adjunctive treatment of residual colonic microtumors by photodynamic therapy (PDT), an experimental model has been defined. S.c. HT29 colonic-cancer-cell tumors grown in nude mice were used and, 48 hr after i.p. administration of 30 mg/kg Photofrin (PH), laser illumination was performed with 75 or 150 Joules/cm2. The efficiencies of 2 lasers, the classically used rhodamine laser (RL) and a copper metal vapor laser (CMVL), were compared. The effects of PDT were assessed by histological and immunocytochemical (detection of a digestive enzyme, dipeptidyl-peptidase IV, as a marker of cell viability) follow-up and by the growth curve of the tumors after illumination. We conclude that, although the depth of necrosis resulting from PDT was nearly 3 mm at 75 J/cm2 and nearly 4-5 mm at 150 J/cm2 with both lasers, complete necrosis was obtained only with the CMVL at 150 J/cm2 (in 50% of the tumors). Under the other conditions, a layer of unaffected cells persisted at the pole opposite to laser illumination, resulting in growth curves lower than but parallel to those of the controls. Analysis of drug concentrations in the tumors and various organs, 48 hr after injection, i.e., at the time of laser illumination, revealed the presence of 21 g/g dry weight PH in the tumors. The tumor vs. host-organ ratios were equal to or higher than 1 for the small bowel, colon, stomach, lung, skin and muscle. In contrast, the ratios were below 1 for the spleen, pancreas, kidney and liver. © 1992 Wiley-Liss, Inc.

Helfrich, W., van Geel, M., The, T.H. and de Leij, L. (1994), Detection of a putative 30-kDa ligand of the cluster-2 antigen. *International Journal of Cancer*, **S8**, 70-75.

Full Text: [1994\Int J CanS8, 70.pdf](1994/Int%20J%20CanS8,%2070.pdf)

Abstract: The cluster-2 antigen, also called EGP-2, is a 38-kDa trans-membrane glycoprotein with a distribution that is largely confined to human epithelial cells and their derived carcinomas. Monoclonal antibodies (MAbs) directed against EGP-2 have been extensively studies as anti-tumors agents, yet the function of the antigen is not known. In the present study we used a biotinylated recombinant soluble derivative of the EGP-2 (sEGP (bio)) as a probe to detect a possible EGP-2 ligand, using various carcinoma cell lines as a substrate. The recombinant soluble EGP-2 was expressed in the Autographa californica nuclear polyhedrosis virus (baculovirus) expression system. The sEGP-2, to which we engineered a poly-histidine affinity tag, was purified from infected Spodoptera frugiperda insect cells using immobilized metal-ion-affinity chromatography (IMAC). In Western blot analysis the sEGP (bio) probe bound to a 30-kDa protein band in 2 out of 5 of the assessed carcinoma cell lines, suggesting that this band may be an EGP-2 ligand. Interestingly, binding only occurred when, prior to SDS-PAGE, cell lysates had been subjected to a reducing agent (2-mercapto-ethanol). The physiological significance of this phenomenon and nature of the detected 30-kDa protein band remains to be determined. (C) 1994 Wiley-Liss, Inc.

Keywords: Carcinoma-Associated Antigen, Cell Lung-Cancer, Monoclonal-Antibodies, Molecular-Cloning, Proteins, Lines, Cdna

Fritschi, L. and Siemiatycki, J. (1996), Lymphoma, myeloma and occupation: Results of a case-control study. *International Journal of Cancer*, **67** (4), 498-503.

Full Text: [1996\Int J Can67, 498.pdf](1996/Int%20J%20Can67,%20498.pdf)

Abstract: The known risk factors for lymphoma and myeloma cannot account for the current incidence rates of these cancers, and there is increasing interest in exploring occupational causes. We present results regarding lymphoma and myeloma from a large case-control study of hundreds of occupational exposures and 19 cancer sites. We examine in more detail those exposures previously considered to be related to these cancers, as well as exposures which were strongly related in our initial analyses. Lymphoma was not associated in our data with exposure to solvents or pesticides, or employment in agriculture or wood-related occupations, although numbers of exposed cases were sometimes small. Hodgkin’s lymphoma was associated with exposure to fabric dust, and non-Hodgkin’s lymphoma was associated with exposure to copper dust, ammonia and a number of fabric and textile-related occupations and exposures. Employment as a sheet metal worker was associated with development of myeloma. (C) 1996 Wiley-Liss, Inc.

Keywords: NOn-Hodgkins-Lymphoma, Cancer Mortality, Multiple-Myeloma, Risk-Factors, Textile Workers, Exposure, Shoe, Men, Malignancies, Tanners

Zhu, X., Daffada, A.A.I., Chan, C.M.W. and Dowsett, M. (1997), Identification of an exon 3 deletion splice variant androgen receptor mRNA in human breast cancer. *International Journal of Cancer*, **72** (4), 574-580.

Full Text: [I\Int J Can72, 574.pdf](I/Int%20J%20Can72,%20574.pdf)

Abstract: Androgens and androgen receptor (AR) are involved in many regulatory processes in the growth of female breast cells. Mutations in the AR gene and/or alterations of the AR protein sequence may be related to the development and progression of breast cancer. Using reverse transcription-polymerase chain reaction we have examined 31 female breast cancer samples, 5 normal female breast tissues and 6 breast-cancer cell lines for the presence of splice variants of AR mRNA and have identified an exon 3 deletion splice variant (Delta 3AR). The higher expression of the variant relative to the wild-type AR (WT AR) was found in 7 breast-cancer samples (Delta 3/WT > 15%) and relatively lower levels of the variant were observed in 3 breast cancer cell lines (Delta 3/WT < 5%). However, in normal breast tissues, expression of the variant was undetectable by Southern blot analysis. In vitro translation of the Delta 3AR mRNA resulted in a variant AR protein of about 105 kDa, smaller than the WT AR by about 5 kDa. We thus report an exon deletion splice variant of AR mRNA in breast cancer. The variant protein is predicted to lack the second zinc finger within the DNA-binding domain and is expected to be unable or to have reduced ability to bind to androgen-response elements and to activate transcription. The relatively high expression of this AR variant in some breast-cancer tissues may indicate its role in regulating the growth of these cancers. (C) 1997 Wiley-Liss, Inc.

Keywords: Human Glucocorticoid Receptor, Messenger-RNA Expression, DNA-Binding Domain, Estrogen-Receptor, Progesterone Receptors, Reifenstein Syndrome, Steroid-Receptors, Cells, Tamoxifen, Gene

Yang, C.Y. and Chiu, H.F. (1998), Calcium and magnesium in drinking water and risk of death from rectal cancer. *International Journal of Cancer*, **77** (4), 528-532.

Full Text: [I\Int J Can77, 528.pdf](I/Int%20J%20Can77,%20528.pdf)

Abstract: The possible association between the risk of rectal cancer and the levels of calcium and magnesium in drinking water from municipal supplies was investigated in a matched case-control study in Taiwan. All eligible rectal-cancer deaths (986 cases) of Taiwan residents from 1990 through 1994 were compared with a sample of deaths from other causes (986 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 were obtained from the 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 gender, year of birth and year of death. Compared with those with calcium levels below 22.0 mg/liter, the adjusted odd ratios (95% confidence interval) were 0.72 (0.53-0.98) for the group with water calcium levels between 22.0 and 40.8 mg/liter and 0.63 (0.45-0.87) for the group with calcium levels of 40.9 mg/liter or more. The adjusted odd ratios were not statistically significant for the relationship between magnesium levels in drinking water and rectal cancer. The results of the present study show that there may be a significant protective effect of calcium intake from drinking water on the risk of rectal cancer.

Keywords: Colorectal-Cancer, Vitamin-D, Cardiovascular Mortality, Dairy-Products, United-States, Colon Cancer, Diet, Epithelium, Hardness, ACIDS

Tang, R.P., Wang, J.Y., Lo, S.K. and Hsieh, L.L. (1999), Physical activity, water intake and risk of colorectal cancer in Taiwan: A hospital-based case-control study. *International Journal of Cancer*, **82** (4), 484-489.

Full Text: [I\Int J Can82, 484.pdf](I/Int%20J%20Can82,%20484.pdf)

Abstract: The age-adjusted mortality rates of colorectal cancer have been rising in Taiwan over the past 2 decades, and colorectal cancer is now the third leading cause of cancer mortality in the county. We conducted a hospital-based case-control study to clarify the nature of the association between physical activity, water intake and colorectal-cancer risk in Taiwan, A total of 163 subjects (aged 33-80 years) with histologically confirmed primary colorectal cancer and 163 hospital controls were enrolled during 1992, Dietary intake, physical activity and other lifestyle activities were assessed using a comprehensive food-frequency and lifestyle-activity questionnaire. Adjusted odds ratios (OR) and 95% confidence intervals (CI) were estimated using conditional logistic-regression analysis. A strong inverse dose-response relation between increased water intake and rectal cancer was found among men after adjustment for other risk factors (p for trend = 0.0005), The OR for rectal cancer among men in the highest tertile of water intake was 0.08 (95% CI, 0, 0.02-0.35) compared with that among men in the lowest tertile (OR = I). Similar but not significant trends were seen among women (p = 0.29). The OR for colon cancer among men with active leisure-time physical activity was 0.19 (95% Cl, 0.05-0.77) times that: among sedentary men (p for trend 0.03), However, physical activity was not associated with colon-cancer risk among women (p = 0.48), No differences in the amount of water intake were found related to level of physical activity. These findings add to the evidence that leisure-time activity may reduce colon-cancer risk, not only in high-risk but also in low-risk populations, and support the potential beneficial effect of increased wafer intake in reducing colorectal-cancer risk. (C) 1999 Wiley-Liss, Inc.

Keywords: Colon-Cancer, Men, Women, Insulin, Epidemiology, Disease, China

Glaser, A., Kennedy, C., Punt, J. and Walker, D. (1999), Standardized quantitative assessment of brain tumor survivors treated within clinical trials in childhood. *International Journal of Cancer*, **83** (S12), 77-82.

Full Text: [I\Int J Can83, 77.pdf](I/Int%20J%20Can83,%2077.pdf)

Abstract: Important morbidity and impairment of life quality arises from both the primary pathology and therapeutic interventions in children with central nervous system (CNS) tumors. Standardized and systematic collection of morbidity data is a prerequisite of clinical trials in this field. The perception of the survivor is paramount in the determination of quality of life as this variable is dependent on the beholder. Comprehensive assessment of outcome following therapeutic intervention should evaluate this in parallel with other physical and psycho social outcome parameters. A structured, simple schema for the evaluation of survivors of childhood CNS tumors is presented, It is intended to be easily applicable by clinicians within the everyday clinical setting. Information relating to pre-and post-operative states, function, health status and emotional and psychological well-being is collected at regular intervals from diagnosis. Re-integration into society and independence are evaluated. Children self-complete health-status assessments where appropriate. Evidence to support this is presented. The schema is intended to provide a basic framework for the monitoring of health status following treatment of CNS tumors in childhood. Regular assessments may identify individuals in need of more detailed investigation and further understanding of the evolution of morbidity in this cohort, Survivors’ perception of the impact of documented dysfunction on their health-related quality of life will be determined, Optimization of the planning of future clinical service provision and therapies will result. Int, J, Cancer Suppl. 12:77-82, (1999), (C) 1999 Wiley-Liss, Inc.

Keywords: Quality-of-Life, Health Utilities Index, Nervous-System Tumors, Long-Term Survivors, Children, Cancer, Questionnaire, Agreement, Care

Geoffroy-Perez, A. and Cordier, S. (2001), Fluid consumption and the risk of bladder cancer: Results of a multicenter case-control study. *International Journal of Cancer*, **93** (6), 880-887.

Full Text: [I\Int J Can93, 880.pdf](I/Int%20J%20Can93,%20880.pdf)

Abstract: A number of studies suggest a relation between fluid consumption and the risk of bladder cancer but results are contradictory. Different theories involving the quantity or the type of fluid consumed have been put forward to explain these relations but mechanisms remain unclear. We conducted a multicenter case-control study in several hospitals in France including 765 cases and 765 matched controls. Information collected by face-to-face interview included quantity and type of beverages consumed from the age of 18 until age at diagnosis, as well as smoking habits. Among men, we observed a slight non-significant increased risk of bladder cancer associated with total fluid intake, irrespectively of tobacco use. This was essentially due to intake of non-alcoholic drinks, coffee and bottled juice or water. Relative risks greater than I were observed in relation with coffee consumption. On the other hand, alcohol consumption, especially wine, was associated with relative risks less than unity. No relation could be identified between bladder cancer risk and fluid consumption among women. Our results do not support an association between total fluid consumption and bladder cancer risk. The role of the different types of fluid consumed, confounding factors and bias in the present analysis are discussed. (C) 2001 Wiley-Liss. Inc.

Keywords: Bladder Cancer Risk, Fluid Consumption, Case-Control Study, Lower Urinary-Tract, Drinking-Water, Life-Style, Population, Coffee, Germany, Men

? Gago-Dominguez, M., Castelao, J.E., Yuan, J.M., Yu, M.C. and Ross, R.K. (2001), Use of permanent hair dyes and bladder-cancer risk. *International Journal of Cancer*, **91** (4), 575-579.

Full Text: [2001\Int J Can91, 575.pdf](2001/Int%20J%20Can91,%20575.pdf)

Abstract: A population-based case-control study was conducted in Los Angeles, California, which involved 1,514 incident Eases of bladder cancer and an equal number of age-, sex- and ethnicity-matched controls. Information on personal use of hair dyes was obtained from 897 cases and their matched controls. After adjustment for cigarette smoking, a major risk factor for bladder cancer, women who used permanent hair dyes at least once a month experienced a 2.1-fold risk of bladder cancer relative to non-users (p for trend = 0.04). Risk increased to 3.3 (95% Cl = 1.3-8.4) among regular (at least monthly) users of 15 or more years. Occupational exposure to hair dyes was associated with an increased risk of bladder cancer in this study. Subjects who worked for 10 or more years as hairdressers or barbers experienced a 5-fold (95% Cl = 1.3-19.2) increase in risk compared to individuals not exposed. (C) 2001 Wiley-Liss, Inc.

Keywords: Bladder Cancer, Permanent Hair Dyes, Hairdressers, Barbers, Case-Control, Lower Urinary-Tract, United-States, Occupational Risks, Hairdressers, Women, Men

? Seow, A., Poh, W.T., The, M., Eng, P., Wang, Y.T., Tan, W.C., Chia, K.S., Yu, M.C. and Lee, H.P. (2002), Diet, reproductive factors and lung cancer risk among Chinese women in Singapore: Evidence for a protective effect of soy in nonsmokers. *International Journal of Cancer*, **97** (3), 365-371.

Full Text: [2002\Int J Can97, 365.pdf](2002/Int%20J%20Can97,%20365.pdf)

Abstract: The factors associated with risk of lung cancer among nonsmokers have not been fully elucidated, but dietary factors have consistently been shown to play a role. Chinese women are unique in having a high incidence of lung cancer despite a low smoking prevalence. This population is also known to have a high intake of soy, a dietary source of phytoestrogens. We conducted a hospital-based case-control study among Singapore Chinese women, comprising 303 cases and 765 age-matched controls, of whom 176 cases and 663 controls were lifetime nonsmokers. Data on demographic background, reproductive factors and dietary intake of fruit, vegetables and soy foods were obtained by in-person interview. We observed an inverse association between intake of total, cruciferous and non-cruciferous vegetables and risk of lung cancer among smokers. Although smokers in the highest tertile of fruit intake also had a lower risk, this was not statistically significant. Higher intake of soy foods significantly reduced risk of lung cancer among lifetime nonsmokers, but not among smokers. When soy isoflavonoid intake in mg/week was computed based on frequency and portion size of intake of eight common local soy foods, the adjusted OR among nonsmokers for the highest tertile compared to the lowest was 0.56, 95% Cl 0.37-0.85 (p for trend <0.01). Fruit intake was also significantly associated with reduced lung cancer risk among nonsmokers, but the effect was not significant after adjustment for soy intake. On the other hand, soy intake remained an independent predictor of risk after controlling for fruit intake. Reproductive effects were also primarily confined to lifetime nonsmokers, among whom having 3 or more livebirths (adjusted OR 0.65, 0.44-0.96) and a menstrual cycle length of more than 30 days (OR 0.46, 0.25-0.84) accorded a significantly reduced risk of lung cancer. Place of birth was significantly associated with risk among nonsmokers (OR 2.6, 1.7-3.9 for China-born vs. local born) but not among smokers. When analysis was restricted to nonsmokers with adenocarcinomas, the dietary effects were consistent or enhanced. On stepwise regression, soy intake and cycle length emerged as the independent dietary and reproductive predictors of lung cancer risk in nonsmokers. These findings are consistent with other evidence suggesting an involvement of estrogen-related pathways in lung cancer among non-smoking women. (C) 2002 Wiley-Liss, Inc.

Keywords: Case-Control, Diet, Lung Cancer, Smoking Status, Estrogen, Soy, Family History, Breast-Cancer, United-States, Progesterone Receptors, Steroid-Receptors, Hormone Receptors, Histologic Type, In-Vitro, Estrogen, Vegetables

? Browning, D.R.L. and Martin, R.M. (2007), Statins and risk of cancer: A systematic review and metaanalysis. *International Journal of Cancer*, **120** (4), 833-843.

Abstract: We conducted a systematic review of the association between HMG-CoA reductase inhibitor (statin) use and cancer risk. We searched MEDLINE, EMBASE, Web of Science, ISI Proceedings and BIOSIS Previews bibliographic databases, electronic trials registers and reference lists for potentially eligible randomized trials and observational studies. Thirty-eight individual studies (26 randomized trials involving 103,573 participants and 12 observational studies with 826,854 participants) were included. Median follow-up was 3.6 and 6.2 years for trials and observational studies, respectively. In metaanalyses of randomized trials, there was no evidence that statin therapy was associated with incidence of all-cancers (26 trials; pooled risk ratio = 1.00; 95% Cl 0.95-1.05; I-2 = 0%) or the following site-specific cancers: breast (7 trials; risk ratio = 1.01; 0.79-1.30; I-2 = 43%), prostate (4 trials; risk ratio = 1.00; 0.85-1.17; 12 = 0%), colorectum (9 trials; risk ratio = 1.02; 0.89-1.16; I-2 = 0%), lung (9 trials; risk ratio = 0.96; 0.841.09. I-2 = 0%), genito-urinary (5 trials; risk ratio = 0.95; 0.83-log. I-2 = 0%); 3, melanoma (4 trials; risk ratio = 0.86; 0.62-1.20; I-2 = 17%) or gastric (1 trial; risk ratio = 1.00; 0.35-2.85). There was no evidence of differential effects by length of follow-up, statin type (lipophilic vs. lipophobic) or potency. Trial results were generally consistent with observational studies. We conclude that statin use is not associated with short-term cancer risk, but longer-latency effects remain possible. (c) 2006 Wiley-Liss. Inc.

Keywords: Atherosclerosis Prevention, Average Cholesterol Concentrations, Bibliographic, Bibliographic Databases, Breast-Cancer, Cancer, Clinical-Trials, Coronary-Heart-Disease, Databases, Embase, Follow-Up, Hmg-Coa Reductase Inhibitors, ISI, Lipid-Lowering Drugs, Long-Term Treatment, Medline, Melanoma, Neoplasia, Observational Studies, Placebo-Controlled Trial, Prostate-Cancer, Randomized Controlled-Trial, Ratio, Review, Risk, Science, Statins, Systematic, Systematic Review, Therapy, Web of Science

? Green, A., Autier, P., Boniol, M., Boyle, P., Dore, J.F., Gandini, S., Newton-Bishop, J., Secretan, B., Walter, S.J., Weinstock, M.A. and Westerdahl, J. (2007), The association of use of sunbeds with cutaneous malignant melanoma and other skin cancers: A systematic review. *International Journal of Cancer*, **120** (5), 1116-1122.

Abstract: Exposure to solar ultraviolet (UV) radiation is a known cause of skin cancer. Sunbed use represents an increasingly frequent source of artificial UV exposure in light-skinned populations. To assess the available evidence of the association between sunbed use and cutaneous malignant melanoma (melanoma) and other skin cancers, a systematic review of the literature till March 2006 on epidemiological and biological studies on sunbed use was performed in PUBMED, ISI Web of Science, EMBASE, Pascal, Cochrane library, Lilacs and Medcarib. Search for keywords in the title and in the abstract was done systematically and supplemented by manual searches. Only case-control, cohort or cross-sectional studies were selected. Data were abstracted by means of a standardized data-collection protocol. Based on 19 informative studies, ever-use of sunbeds was positively associated with melanoma (summary relative risk, 1.15; 95% CI, 1.00-1.31), although there was no consistent evidence of a dose-response relationship. First exposure to sunbeds before 35 years of age significantly increased the risk of melanoma, based on 7 informative studies (summary relative risk, 1.75; 95% CI, 1.35-2.26). The summary relative risk of 3 studies of squamous cell carcinoma showed an increased risk. For basal cell carcinoma, the studies did not support an association. The evidence does not support a protective effect of the use of sunbeds against damage to the skin from subsequent sun exposure. Young adults should be discouraged from using indoor tanning equipment and restricted access to sunbeds by minors should be strongly considered. (c) 2006 Wiley-Liss, Inc.

Keywords: Adolescents, Adults, Artificial Uv, Basal-Cell Carcinoma, Bed Use, Cancer, Carcinoma, Cochrane, Data Collection, Dna-Damage, Dose-Response, Indoor Tanning Facilities, ISI, Literature, Melanoma, Meta-Analysis, Minors, Protective Factor, Protocol, Relative Risk, Review, Risk, Risk-Factors, Science, Skin Cancer, Sun Exposure, Sunbeds, Sunscreen Use, Systematic, Systematic Review, Ultraviolet-Light, Web of Science

? Lehman, E.M. and Wilson, M.L. (2009), Epidemiology of hepatitis viruses among hepatocellular carcinoma cases and healthy people in Egypt: A systematic review and meta-analysis. *International Journal of Cancer*, **124** (3), 690-697.

Abstract: Liver cancers are strongly linked to hepatitis B virus (HBV) and hepatitis C virus (HCV). Egypt has the highest prevalence of HCV worldwide and has rising rates of hepatocellular carcinoma (HCC). Egypt’s unique nature of liver disease presents questions regarding the distribution of HBV and HCV in the etiology of HCC. Accordingly, a systematic search of MEDLINE, ISI Web of Science, ScienceDirect and World Health Organisation databases was undertaken for relevant articles regarding HBV and HCV prevalence in Egypt among healthy populations and HCC cases. We calculated weighted mean prevalences for HBV and HCV among the populations of interest and examined differences in prevalence by descriptive features, including age, year and geographic region. Prevalences for HBV and HCV were 6.7% and 13.9% among healthy populations, and 25.9% and 78.5% among HCC cases. Adults had higher prevalences of both infections (Adult HBV = 8.0%, Child HBV = 1.6%; Adult HCV = 15.7%, Child HCV = 4.0%). Geographically, HBV was higher in the south, whereas HCV was greater in the north (North HBV = 4.6%, South HBV = 11.7%; North HCV = 15.8%, South HCV = 6.7%). Among HCC cases, HBV significantly decreased over time (p = 0.001) while HCV did not, suggesting a shift in the relative influences of these viruses in HCC etiology in Egypt. Our results highlight large amounts of heterogeneity among the epidemiological factors associated with liver disease in Egypt and underscore the necessity of an integrated strategy for the successful prevention of viral hepatitis infections and chronic liver disease. (C) 2008 Wiley-Liss, Inc.

Keywords: Adult, Adults, B-Virus, Blood-Donors, C Virus, Carcinoma, Child, Chronic Liver-Disease, Community, Databases, Developing Countries, Disease, Epidemiology, Etiology, HBV, HCV, HCV Infection, Health, Hepatitis C, Hepatocellular Carcinoma, Infectious Diseases, Interest, ISI, Liver Cancer, Medline, Meta-Analysis, Nile Delta, Pooled Analysis, Prevalence, Prevention, Review, Risk-Factors, Schistosomiasis, Science, Strategy, Systematic, Systematic Review, Web of Science

? Ceelen, W., Fierens, K., Van Nieuwenhove, Y. and Pattyn, P. (2009), Preoperative chemoradiation versus radiation alone for stage II and III resectable rectal cancer: A systematic review and meta-analysis. *International Journal of Cancer*, **124** (12), 2966-2972.

Abstract: Combining chemotherapy with preoperative radiotherapy (RT) has a sound radiobiological rationale. We performed a systematic review and meta-analysis of trials comparing preoperative RT with preoperative chemoradiation (CRT) in rectal cancer patients. The Cochrane Central Register of Controlled Trials, Web of Science, EMBASE and MEDLINE (PUBMED) were searched from 1975 until June 2007. Dichotomous parameters were summarized using the odds ratio while time to event data were analyzed using the pooled hazard ratio for death. From the primary search result of 324 trials, 4 relevant randomized trials were identified. The addition of chemotherapy significantly increased grade III and IV acute toxicity (p = 0.002) while no differences were observed in postoperative morbidity or mortality. Preoperative CRT significantly increased the rate of pathological complete response (p < 0.001) although this did not translate into a higher sphincter preservation rate (p = 0.29). The local recurrence rate was significantly lower in the CRT group (p < 0.001). No statistically significant differences were observed in disease free survival (p = 0.89) or overall survival (p = 0.79). Compared to preoperative RT alone, preoperative CRT improves local control in rectal cancer but is associated with a more pronounced treatment related toxicity. The addition of chemotherapy does not benefit sphincter preservation rate or long-term survival. Future trials should address improvements in the rate of distant metastasis and overall survival by incorporating more active chemotherapy. (C) 2008 UICC.

Keywords: Anal-Sphincter Function, Cancer, Carcinoma, Chemotherapy, Cochrane, Control, Disease, Dose Leucovorin, Local Recurrence, Meta-Analysis, Morbidity, Mortality, Primary, Quality-of-Life, Radiotherapy, Randomized-Trial, Ratio, Rectal Cancer, Recurrence, Review, Science, Short-Term Radiotherapy, Surgery, Surgery, Survival, Systematic, Systematic Review, Therapy, Total Mesorectal Excision, Toxicity, Treatment, Web of Science

# Title: International Journal of Cardiology

Full Journal Title: [International Journal of Cardiology](http://www.sciencedirect.com/science/journal/01675273)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Coats, A.J.S. (2005), Top of the charts: Download versus citations in the *International Journal of Cardiology*. *International Journal of Cardiology*, **105** (2), 123-125.

Full Text: [2005\Int J Car105, 123.pdf](2005/Int%20J%20Car105,%20123.pdf)

Abstract: The medical literature is growing at an alarming rate. Research assessment exercises, research quality frameworks, league tables and the like have attempted to quantify the volume, quality and impact of research. Yet the established measures (such as citation rates) are being challenged by the sheer number of journals, variability in the “gold standard” of peer-review and the emergence of open-source or web-based journals. In the last few years, we have seen a growth in downloads to individual journal articles that now easily exceeds formal journal subscriptions. We have recorded the 10 top cited articles over a 12-month period and compared them to the 10 most popular articles being downloaded over the same time period. The citation-based listing included basic and applied, observational and interventional original research reports. For downloaded articles, which have shown a dramatic increase for the International Journal of Cardiology from 48,000 in 2002 to 120,000 in 2003 to 200,000 in 2004, the most popular articles over the same period are very different and are dominated by up-to-date reviews of either cutting-edge topics (such as the potential of stem cells) or of the management of rare or unusual conditions. There is no overlap between the two lists despite covering exactly the same 12-month period and using measures of peer esteem. Perhaps the time has come to look at the usage of articles rather than, or in addition to, their referencing. (c) 2005 Elsevier Ireland Ltd. All rights reserved.

Keywords: Acute Coronary Syndromes, Anemia, Cardiology, Citation, Citations, Download, Heart-Failure, Impact Factor, Journal, Medical Journals, Regeneration, Repair, Stem-Cells, Torsade-de-Pointes

? Coats, A.J.S. (2009), Ethical authorship and publishing. *International Journal of Cardiology*, **131** (2), 149-150.

Full Text: [2009\Int J Car131, 149.pdf](2009/Int%20J%20Car131,%20149.pdf)

Abstract: Principles of Ethical Publishing in the International Journal of Cardiology:

1. That the corresponding author has the approval of all other listed authors for the submission and publication of all versions of the manuscript.

2. That all people who have a right to be recognised as authors have been included on the list of authors and everyone listed as an author has made an independent material contribution to the manuscript

3. That the work submitted in the manuscript is original and has not been published elsewhere and is not presently under consideration of publication by any other journal. The oral or poster presentation of parts of the work and its publishing as a single page abstract does not count as prior publication for this purpose.

4. That the material in the manuscript has been acquired according to modern ethical standards and does not contain material copied from anyone else without their written permission

5. That all material which derives from prior work, including from the same authors, is properly attributed to the prior publication by proper citation

6. That the manuscript will be maintained on the servers of the Journal and held to be a valid publication by the Journal only as long as all statements in these principles remain true

7. That if any of the statements above ceases to be true the authors have a duty to notify the journal as soon as possible so that the manuscript can be withdrawn. (C) 2008 Elsevier Ireland Ltd. All rights reserved.

Keywords: Medical Journals, Cardiology, Ethics, Plagiarism, Scientific Misconduct, Fraud, Authorship, Retraction

? Smart, N.A. and Steele, M. (2010), Systematic review of the effect of aerobic and resistance exercise training on systemic brain natriuretic peptide (BNP) and N-terminal BNP expression in heart failure patients. *International Journal of Cardiology*, **140** (3), 260-265.

Full Text: 2010\Int J Car140, 260.pdf

Abstract: Background: BNP and the N-terminal portion (NT-pro-BNP) have emerged as powerful tools in the diagnosis and prognosis of heart failure on acute presentation. The aim of this work was to systematically review the effect of exercise training on BNP and NT-pro-BNP levels in patients with left ventricular dysfunction. Methods: A systematic search was conducted of MEDLINE (Ovid) (1950-July 2008), EMBASE.com (1974-current), Cochrane Central Register of Controlled Trials, CINAHL (1981-current) and Web of Science (2000-current) to identify randomized controlled trials of aerobic and/or resistance exercise training in heart failure patients that measured BNP and/or pro-BNP. Primary outcome measures were changes in BNP and NT-pro-BNP. Secondary outcomes were changes in functional capacity and energy expenditure, measures of study quality were also recorded. Results: Nine randomized controlled studies measuring BNP or NT-pro-BNP met our eligibility criteria. Exercise training had a favourable effect on BNP (mean difference-79 pg/ml 95% C.I.-141 to-17 pg/ml, P-0.01) and NT-pro-BNP (mean difference-621 pg/ml, 95% C.I.-844 to-398 pg/ml, P-<0.00001). Moreover the trials that showed a significant change in NT-pro-BNP all had a weekly exercise energy expenditure of more than 400 Kcal. Conclusion: Data from nine published studies, suggest exercise training has a favorable effect on BNP and NT-pro- BNP in heart failure patients. (C) 2009 Elsevier Ireland Ltd. All rights reserved.

Keywords: Activation, BNP, Brain, Capacity, Cochrane, Controlled Studies, Diagnosis, Exercise, Functional, Heart Failure, Interval, Metaanalysis, Methods, Outcome, Outcomes, Primary, Prognosis, Randomized Controlled Trials, Rehabilitation, Resistance, Review, Science, Systematic, Systematic Review, Training, Web of Science

? Hu, L.H., Liao, Z., Gao, R. and Li, Z.S. (2010), Scientific publications in cardiology and cardiovasology journals from Chinese authors in various parts of North Asia: 10-year survey of literature. *International Journal of Cardiology*, **140** (3), 304-308.

Full Text: [2010\Int J Car140, 304.pdf](2010/Int%20J%20Car140,%20304.pdf)

Abstract: Background: People of Chinese ethnicity make up one of the largest populations in the world. Heart and vessel diseases remain the leading cause of morbidity and mortality in China. The research status in cardiology and cardiovasology among Chinese individuals in the three major regions of China - Mainland (ML), Hong Kong (HK) and Taiwan (TW) - are unknown. The outputs of cardiology and cardiovasology articles published in international journals from the three regions were compared in this study. Methods: Articles published in 83 journals related to cardiology and cardiovasology originating from the ML, TW and HK from 1998-2007 were retrieved from the PubMed database. The number of total articles, clinical trial, randomized controlled trial, case reports, impact factors (IF), citations, and articles published in top general medicine journals were conducted for quantity and quality comparisons. Results: The total number of articles from the three regions increased significantly from 1998 to 2007 (from 154 to 591). There were 2801 articles from ML (883), TW (1404) and HK (514) in the past ten years. The number of articles published per year from the ML (297) have exceeded those from TW (235) and HK (59) in 2007. The accumulated impact factor of the articles from TW (4082.736) was much higher than ML (2221.699) and HK (1673.049). HK had the highest average IF of cardiology and cardiovasology articles and the most articles published in top general medicine journals among the three regions. Conclusion: The total number of articles from the three major regions of China increased significantly from 1998 to 2007. The number of articles published per year from the ML have exceeded those from TW and HK. However, the quality of articles from TW and HK is better than that from ML. (C) 2008 Elsevier Ireland Ltd. All rights reserved.

Keywords: Articles, Asia, Cardiovascular-Diseases, China, Citations, Database, Elsevier, Hong Kong, Impact, Impact Factor, Impact Factor (IF), Impact Factors, Journal Citation Reports (JCR), Journals, Literature, Medicine, Publications, Randomized Controlled Trial, Randomized Controlled Trial (RCT), Research, Science Citation Index Expanded (SCIE)

? Yu, J.H., Li, L. and Wang, Z.N. (2010), Conclusion is more encouraging than data. *International Journal of Cardiology*, **140** (3), 361.

Full Text: [2010\Int J Car140, 361.pdf](2010/Int%20J%20Car140,%20361.pdf)

Abstract: We read the article entitled “Scientific publications in cardiology journals from Chinese authors in various parts of North Asia: 10-year survey of literature” and found that the methodology in that study was not appropriate. Clarification or revision on some raised concerns will make this article much convinced. (C) 2009 Elsevier Ireland Ltd. All rights reserved.

Keywords: Asia, Elsevier, Impact Factor (IF), Journal Citation Reports (JCR), Journals, Publications, Science Citation Index Expanded (SCIE)

? Hu, L.H., Liao, Z.A., Gao, R. and Li, Z.S. (2010), High quality medical journals and impact factors. *International Journal of Cardiology*, **140** (3), 362-363.

Full Text: [2010\Int J Car140, 362.pdf](2010/Int%20J%20Car140,%20362.pdf)

Abstract: Science Citation Index Expanded (SCIE) is multidisciplinary databases of bibliographic information gathered from thousands of scholarly journals. Our purpose was to select high quality and currently published journal of cardiology and cardiovasology, and SCIE is generally recognized by the world. As a general rule, the journals with high impact factors (IF) include the most prestigious, although the perception of prestige is a murky subject. Limitations of the IF are no secret and they have been widely discussed. (C) 2009 Elsevier Ireland Ltd. All rights reserved.

Keywords: Citation, Databases, Elsevier, Impact, Impact Factor (IF), Impact Factors, Journal, Journal Citation Reports (JCR), Journals, Medical, Multidisciplinary, Scholarly Journals, Science, Science Citation Index, Science Citation Index Expanded (SCIE)

? Shewan, L.G. and Coats, A.J.S. (2010), Ethics in the authorship and publishing of scientific articles. *International Journal of Cardiology*, **144** (1), 1-2.

Full Text: 2010\Int J Car144, 1.pdf

Abstract: All authors to papers in the International Journal of Cardiology must adhere to the following principles: 1. That the corresponding author has the approval of all other listed authors for the submission and publication of all versions of the manuscript. 2. That all people who have a right to be recognised as authors have been included on the list of authors and everyone listed as an author has made an independent material contribution to the manuscript. 3. That the work submitted in the manuscript is original and has not been published elsewhere and is not presently under consideration of publication by any other journal other than in oral, poster or abstract format. 4. That the material in the manuscript has been acquired according to modern ethical standards and has been approved by the legally appropriate ethical committee. 5. That the article does not contain material copied from anyone else without their written permission. 6. That all material which derives from prior work, including from the same authors, is properly attributed to the prior publication by proper citation. 7. That the manuscript will be maintained on the servers of the Journal and held to be a valid publication by the Journal only as long as all statements in these principles remain true. 8. That if any of the statements above ceases to be true the authors have a duty to notify the Journal as soon as possible so that the manuscript can be withdrawn. (C) 2010 Published by Elsevier Ireland Ltd.

Keywords: Authors, Authorship, Cardiology, Citation, Ethics, Fraud, Journal, Medical Journals, Papers, Plagiarism, Publication, Publishing, Retraction, Scientific Misconduct, Standards

? Coats, A.J.S. (2010), Retraction of a paper containing plagiarized material: The prognostic value of serum troponin T in unstable angina. Gokhan Cin V, Gok H, Kaptanoglu B. Int J Cardiol. 1996 Mar;53(3):237-44. *International Journal of Cardiology*, **145** (3), E81-E82.

Full Text: 2010\Int J Car145, E81.pdf

Abstract: On the 6th December 2008, in my role as Editor-in-Chief of the International Journal of Cardiology, I received an email from Professor Harold Garner of UT Southwestern Medical Center, Dallas. Professor Garner told me that using a new search engine methodology (eTBLAST) he and colleagues had identified a paper in the International Journal of Cardiology published in 1996 which had remarkable text and data similarity to an earlier paper published in 1992 in the New England Journal of Medicine. They had detected this similarity after randomly selecting citations from Medline and submitting them to the tool to find other highly similar citations as part of their NIH/R01 funded research on the ethics of publication. We have been notified that all such cases are reported in a database, Deja Vu (http://spore.swmed.edu/dejavu/). We investigated the text of the two papers and we agreed that there was such a similarity that the later paper must have plagiarized the earlier paper, and in doing so infringed the copyright. In accordance with our previously published standards on ethical publishing in the Journal we hereby retract the paper “The prognostic value of serum troponin T in unstable angina. Gokhan Cin V, Gok H, Kaptanoglu B. Int J Cardiol. 1996 Mar;53(3):237-44.”. (C) 2009 Elsevier Ireland Ltd. All rights reserved.

Keywords: Citations, England, Ethics, Methodology, Papers, Plagiarism, Publication, Publishing, Research, Retraction, Scientific Fraud, Standards

# Title: International Journal of Chemical Engineering

Full Journal Title: [International Journal of Chemical Engineering](http://www.hindawi.com/journals/ijce/contents.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

# Title: International Journal of Chemical Kinetics

Full Journal Title: [International Journal of Chemical Kinetics](http://www3.interscience.wiley.com/cgi-bin/jhome/109569276)

ISO Abbreviated Title: Int. J. Chem. Kinet.

JCR Abbreviated Title: Int J Chem Kinet

ISSN: 0538-8066

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: John Wiley & Sons Inc

Publisher Address: 605 Third Ave, New York, NY 10158-0012

Subject Categories:

Chemistry, Physical: Impact Factor 1.104, 54/91 (2000)

McKay, G. and Turner, J.M.C. (1978), Reactions of the iso-butyl radical during 1,1’-azoisobutane pyrolysis. *International Journal of Chemical Kinetics*, **10** (1), 89-100.

Abstract: Quantitative analysis of the products formed in 1,1’-azoisobutane pyrolyses in the temperature range of 553°-602°K has shown that the major reactions of the iso-butyl radical are

Analysis of initial rate data gave log10*k*4/(*k*c)1/2(cm-3/2.mol 1/2.sec-1/2) = 7.54±0.44 - (136.5 + 4.8) kJ/mol/2.303*RT*, the Arrhenius parameters obtained being in good agreement with thermodynamic data for reaction (4). Measured values of *k*a/(*k*c)1/2 where *k*a is the rate constant of the reaction *i*C4H9 + AIB →*i*C4H10 +. AIB were consistent with published parameters determined by photolysis of 1,1’-azoisobutane. Combination of photolysis and pyrolysis data gave log10 *k*a/(*k*c)1/2(cm3/2.mol-1/22.sec-1/2) = 3.68 ± 0.15 - (27.2 ± 1.2) kJ/mol/2.303*RT*. The crosscombination ratio for methyl and iso-butyl radicals has been found to be 0.25, indicating that the geometric mean rule does not hold for methyl and iso-butyl radicals.

? Simon, F.G., Schneider, W. and Moortgat, G.K. (2004), UV-Absorption spectrum of the methylperoxy radical and the kinetics of its disproportionation reaction at 300 K. *International Journal of Chemical Kinetics*, **22** (8), 791-813.

Abstract: Molecular modulation spectroscopy combined with ultraviolet spectroscopic techniques have been used to observe the behavior of the CH3O2 radicals generated in the gas phase by near-ultraviolet modulated photolysis of flowing Cl2-CH4-O2 mixtures. The kinetics of the disproportionation reaction (1)

and the absorption cross-sections of CH3O2 were measured by computer fitting of the modulated absorption traces obtained in the wavelength range 220 to 270 nm at 300 K and 240 torr. The rate constant for the elementary self-reaction k1 = k1(a) + k1(b) + k1(c) was determined to be (3.61 ± 0.55)×10-13 cm3 molecule-1 s-1. The parameter kobs/σ (where kobs is the observed apparent second-order rate constant) was measured from the decay curves in the dark phase of the modulated photolysis period in the wavelength range 230-260 nm, and had a value 1.16×105 cm2 s-1 at 250 nm. At 250 nm the absorption cross-section was determined as σ(CH3O2) = 4.14×10-18 cm2 molecule-1, leading to a value of kobs, = (4.8 ± 0.5)×10 13 cm3 molecule-1 s-1. In addition, the absorption spectrum of CH3O2 was measured in the range 210-295 nm using diode array spectroscopy. A detailed review of all previous studies concerning the kinetics and spectrum of the CH3O2 radical is presented, and a recommended spectrum, representing an average from selected recent studies, is proposed.

# Title: International Journal of Chemical Reactor Engineering

Full Journal Title: [International Journal of Chemical Reactor Engineering](http://www.bepress.com/ijcre/)

ISO Abbrev. Title: Int. J. Chem. React. Eng.

JCR Abbrev. Title: Int J Chem React Eng

ISSN: 1542-6580

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Journal Country/Territory: United States

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Publisher Address: 2809 Telegraph Avenue, Ste 202, Berkeley, CA 94705

Subject Categories:

Engineering, Chemical: Impact Factor 0.531, 75/116 (2008); Impact Factor 0.733, 75/128 (2009)

? Pogaku, R. and Kulkarni, S. (2006), Biosorption of combined industrial effluents using Phanerochaete chrysosporium. *International Journal of Chemical Reactor Engineering*, **4**, article number A16.

Full Text: [2006\Int J Che Rea Eng4, A16.pdf](2006/Int%20J%20Che%20Rea%20Eng4,%20A16.pdf)

Abstract: The biosorption of eight different metals from aqueous solutions of combined industrial effluent by live or dead cells of Phanerochaete chrysosporium was investigated. Growth rate studies of P. chrysosporium were carried out in a selected medium as well as in the effluent. The specific growth rate of the fungus was in the range of 0.089-0.102 h-1 in the medium. The biosorption of metal ions increased as the initial concentration of metal ions increased in the medium. Biosorption equilibrium was established in about 1 h and the concentration of adsorbed metal ions did not change further with time. The equilibrium was well described by Langmuir, Freundlich and Reidlich - Peterson isotherms. The dead fungal biomass was more effective than living fungus for biosorption of metals. The optimum pH for the fungal growth was at 4.5 but enhanced Biosorption was at pH 6 for maximum reduction of hexavalent chromium to trivalent.

Keywords: Aqueous Solutions, Aqueous-Solutions, Biomass, Biosorption, Cells, Chromium, Combined Industrial Effluents, Effluent, Effluents, Equilibria, Equilibrium, Freundlich, Fungal Biomass, Growth, Growth Rate, Heavy-Metals, Hexavalent Chromium, Industrial, Industrial Effluents, Isotherms, Langmuir, Mercury, Metal Ions, Metals, Models, pH, Phanerochaete Chrysosporium, Phanerocyate Chrysosporium, Reduction, Removal

? Salem, Z. and Allia, K. (2008), Cadmium biosorption on vegetal biomass. *International Journal of Chemical Reactor Engineering*, **6**, article number A10.

Full Text: [2008\Int J Che Rea Eng6, A10.pdf](2008/Int%20J%20Che%20Rea%20Eng6,%20A10.pdf)

Abstract: Effective removal of heavy metals from wastewater is one of the most important environmental challenges facing the world. Various techniques are used to remove the metals. Biosorption has gained credibility in the last decade because of its good performance and low cost. The objective of this study is to explore the use of olive pits for cadmium wastewater removal. The effects of mixing rate, pH, particle size, biomass and initial concentration and equilibrium metal ion concentration are evaluated. Results indicate nearly linear uptake by the biomass with increasing initial cadmium concentration. Adsorption increases rapidly in the pH range of 3-9, then levels off. Cadmium concentration uptake increase with increasing biomass concentration until reaching 5 g/L. Mixing rates up to 250 rpm increase uptake, however, higher mixing rates result in a vortex that incorporated air into the mixture, this resulted in a decrease in uptake. The adsorption isotherm appears to follow the Langmuir model.

Keywords: Adsorption, Adsorption Isotherm, Algae, Aqueous-Solutions, Biomass, Biosorption, Cadmium, Cost, Equilibrium, Heavy Metals, Humic Substances, Ions, Isotherm, Langmuir, Langmuir Model, Metals, Mixing, Model, Olive Pits, Peat, pH, Removal, Uptake, Vegetal Biomass, Wastewater

? Ramasamy, R., Sahadevan, R., Manikam, V., Mahendradas, D.K. and Muniswamy, R. (2008), Biosorption of Acid Blue 5 by biomass derived from *Eichhornia crassipes*: Batch and column studies. *International Journal of Chemical Reactor Engineering*, **6**, article number A67.

Full Text: [2008\Int J Che Rea Eng6, A67.pdf](2008/Int%20J%20Che%20Rea%20Eng6,%20A67.pdf)

Abstract: Biosorption of Acid Blue 5 dye by the Eichhornia crassipes was investigated in batch and column studies. Batch experiments were conducted to study the effect of initial solution pH and dye concentration. Langmuir and Freundlich sorption models were used to represent the equilibrium data. Experimental breakthrough curves in a column were obtained with bed height (5, 10 and 15 cm), flow rate (20, 25 and 30 mL/min) and initial dye concentration (50, 75 and 100 mg/L). An increase in bed height and initial dye concentration favors the dye biosorption, while the minimum flow rate produced maximum dye biosorption. It was observed that the uptake of Acid Blue 5 using a bed height of 15 cm, flow rate of 20 mL/min and initial dye concentration of 100 mg/L was found to be more when compared to all other bed height, flow rate and initial dye concentration studied in the present investigation. The Bed Depth Service Time (BDST) model was used for the evaluation of continuous sorption data.

Keywords: Acid Blue 5, Adsorption, Batch, Batch Experiments, Bed, Biomass, Biosorption, Breakthrough, Dye, Dyes, Effluents, Eichhornia, Eichhornia Crassipes, Equilibrium, Evaluation, Freundlich, Langmuir, Model, Models, Packed Bed Column, pH, Removal, Sorption, Uptake, Water

? Sahadevan, R., Devaraj, A.B.K., Mahendradas, D.K., Gurunathan, B. and Velan, M. (2008), Biosorption of lignin compounds using biomass derived from *Eichhornia crassipes*: Batch studies. *International Journal of Chemical Reactor Engineering*, **6**, article number A102.

Full Text: [2008\Int J Che Rea Eng6, A102.pdf](2008/Int%20J%20Che%20Rea%20Eng6,%20A102.pdf)

Abstract: Biosorption of lignin compounds by the Eichhornia crassipes was investigated in batch studies. Batch experiments were conducted to study the effect of initial sorbent dosage, solution pH and lignin compounds concentration. Langmuir and Freundlich adsorption isotherm models were used to represent the equilibrium data. The Freundlich isotherm model was found to be fitted very well with the experimental data when compared to Langmuir isotherm model. The results showed that the equilibrium uptake capacity was found to be increased with decrease in biomass dosage. The lignin compound removal was influenced by the initial lignin compounds concentration. The sorption results were analysed for pseudo first order and pseudo second order kinetic model. It was observed that the kinetic data fitted very well with the pseudo second order rate equation when compared to the pseudo first order rate equation. Sorption results were analyzed for the intra particle diffusion model.

Keywords: Adsorption, Adsorption Isotherm, Aqueous-Solution, Batch, Batch Experiments, Biomass, Biosorbent, Biosorption, Capacity, Compounds, Decolorization, Diffusion, Dyes, Effluents, Eichhornia, Eichhornia Crassipes, Equilibrium, Freundlich, Freundlich Adsorption, Freundlich Isotherm, Intra Particle Diffusion, Isotherm, Isotherm Models, Kinetic, Kinetic Model, Langmuir, Langmuir Isotherm, Lignin Compounds, Model, Models, Ph, Pseudo Second Order, Pulp, Removal, Sorbent, Sorption, Uptake, Waste-Water

? Khataee, A. and Khani, A. (2009), Modeling of nitrate adsorption on granular activated carbon (GAC) using Artificial Neural Network (ANN). *International Journal of Chemical Reactor Engineering*, **7**, article number A5.

Full Text: [2009\Int J Che Rea Eng7, A5.pdf](2009/Int%20J%20Che%20Rea%20Eng7,%20A5.pdf)

Abstract: High concentrations of N-containing compounds in drinking water cause health problems such as cyanosis among children and cancer of the alimentary canal. Therefore, removal of nitrate from water samples is of significant importance from the health and environmental point of view. In this work, the effective parameters on removal of nitrate by adsorption process, which included the amount of granular activated carbon (m), initial concentration (C-0), contact time, pH and temperature (T), were investigated. The removal process was monitored using an on-line spectrophotometric analysis system. It was found that the content of adsorption followed decreasing order: m = 10>5>2>1g, C-0 = 20>15>25>10 ppm, pH = 4>7>10>1 and T = 25>35>45>55 degrees C. The three-layered feed forward back propagation neural network was used for modeling of nitrate adsorption on granular activated carbon. The comparison between the predicted results of the designed ANN model and the experimental data proved that modeling of nitrate adsorption process using artificial neuron network was a good and precise method to predict the extent of adsorption of nitrate on GAC under different conditions.

Keywords: Activated Carbon, Adsorbent, Adsorption, Analysis, Aqueous-Solution, Cancer, Carbon, Comparison, Compounds, Contact Time, Decolorization, Denitrification, Drinking Water, Drinking-Water, Electrodialysis, Feed Forward Back Propagation, GAC, Granular Activated Carbon, Ground-Water, Ion-Exchange, Model, Modeling, Network, Neural Network, Nitrate, PH, Removal, Strength, System, Temperature, Waste, Water, Water Samples, Water Treatment

? Sahadevan, R., Mahendradas, D.K., Shanmugasundaram, V., Shanmugam, K. and Velan, M. (2009), Sorption kinetics and equilibrium analysis for the removal of Reactive Red 2 and Reactive Blue 81 dyes from synthetic effluents using dried soya bean meal. *International Journal of Chemical Reactor Engineering*, **7**, article number A33.

Full Text: [2009\Int J Che Rea Eng7, A33.pdf](2009/Int%20J%20Che%20Rea%20Eng7,%20A33.pdf)

Abstract: Biosorption of Reactive Red 2 and Reactive Blue 81 dye from an aqueous solution using soya bean meal in a batch system was evaluated. The potential of the meal to act as an adsorbent was determined using Scanning Electron Micrograph and Fourier Transform Infrared Analysis. The effect of sorbent dosage (0.2 to 1.2 g/100 mL), pH (1 to 7) and initial dye concentration (20 to 120 mg/L) on the biosorption process was studied. The equilibrium dye uptake capacity was found to be more at 0.2 g/100 mL of sorbent dosage when compared to all other sorbent dosage studied in the present investigation with the initial dye concentration of 30 mg/L and pH value of 6. The equilibrium dye uptake capacity was found to be more at pH value of 2.0 when compared to all other pH levels studied in the present investigation with the sorbent dosage of 2.0 g/L at 30 mg/L initial dye concentration. The equilibrium uptake value was found to be higher for Reactive Red 2 when compared with Reactive Blue 81 dye. The rate of sorption was investigated using pseudo first and pseudo second order rate equations. The pseudo second order rate expression fit the experimental data well. The equilibrium data was analysed using Langmuir and Freundlich adsorption isotherm model. The equilibrium data for both dyes followed the Freundlich adsorption isotherm at 30°C. Intra particle diffusion model was used to determine the mechanism of the biosorption process. In this present investigation, the maximum uptake capacity of Reactive Red 2 dye was observed as 49.04 mg/g using Soya Bean Meal at 120 mg/L initial dye concentration. The adsorption capacity of Soya Bean Meal was found to be comparable with other low cost adsorbents.

Keywords: Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Isotherm Model, Aqueous Solution, Basic-Dyes, Batch, Batch System, Biomass, Biosorption, Biosorption, Capacity, Color Removal, Concentration, Cost, Data, Decolorization, Diffusion, Diffusion Model, Dye, Dyes, Equilibrium, Experimental, Expression, First, Freundlich, Freundlich Adsorption Isotherm, Intra Particle Diffusion, Investigation, Isotherm, Isotherm Model, Isotherms, Kinetics, Langmuir, Low Cost, Low Cost Adsorbents, Mechanism, Model, Particle Diffusion, Particle Diffusion Model, pH, pH Value, Pith, Potential, Pseudo Second Order, Pseudo-Second-Order, Reactive Dyes, Removal, Second Order, Second-Order, Solution, Sorbent, Sorption, Textile Effluent, Uptake, Value, Waste, Water

? Govindasamy, V., Sahadevan, R., Subramanian, S. and Mahendradas, D.K. (2009), Removal of Malachite Green from aqueous solutions by perlite. *International Journal of Chemical Reactor Engineering*, **7**, article number A43.

Full Text: [2009\Int J Che Rea Eng7, A43.pdf](2009/Int%20J%20Che%20Rea%20Eng7,%20A43.pdf)

Abstract: Perlite was utilized as an adsorbent for the removal of malachite green from their aqueous solution. The effects of the initial dye concentration, contact time, adsorbent dose, pH, and temperature were studied for the adsorption of malachite green in batch mode. The dye adsorption equilibrium was rapidly attained after 40 min of contact time. Adsorbent was characterized by FTIR, XRD and SEM. The Langmuir and Freundlich isotherm described the adsorption data over the concentration range (20-100 mg/L). The rate parameters of the intra particle diffusion were calculated and compared to identify the adsorption mechanisms. The thermodynamic parameters such as entropy change, enthalpy change, and energy of adsorption were calculated to know the nature of adsorption. The negative values of energy of adsorption and the positive values of enthalpy change suggested that the adsorption process is spontaneous and exothermic. Kinetic studies showed that the adsorption process obeyed the pseudo first-order kinetic model.

Keywords: Adsorbent, Adsorption, Adsorption Equilibrium, Adsorption Isotherm, Batch, Batch Mode, Carbons, Contact Time, Diffusion, Dye, Dyes, Equilibrium, Freundlich, Freundlich Isotherm, ftir, Isotherm, Kinetic, Kinetic Model, Kinetic Studies, Kinetics, Kinetics, Langmuir, Langmuir and Freundlich Isotherm, Malachite Green, Methylene-Blue, Minerals, Model, Perlite, PH, Removal, Sem, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Violet, XRD

? Ahmaruzzaman, M. and Gayatri, S.L. (2010), Adsorptive removal of p-nitrophenol (p-NP) on charred jute stick. *International Journal of Chemical Reactor Engineering*, **8**, article number A98.

Full Text: [2010\Int J Che Rea Eng8, A98.pdf](2010/Int%20J%20Che%20Rea%20Eng8,%20A98.pdf)

Abstract: The removal of phenol derivatives from waste waters is of great concern because of the extreme toxicity and persistency. The present study deals with the adsorption of p-nitrophenol from aqueous solution onto jute stick char. Jute stick is a solid waste obtained from the agricultural firms and jute industry. Batch studies were carried out with synthetic wastewater having p-nitrophenol concentration of 1000 ppm using jute stick char as a low cost adsorbent. The operating variables studied are adsorbent dose, pH, contact time, effect of salt addition, and initial p-nitrophenol concentration etc. The adsorption data was analyzed using Freundlich and Langmuir models. The experimental results showed that Freundlich model appear to fit the isotherm data better than the Langmuir model. Optimum conditions for p-nitrophenol were found to be at pH= 7.6 and equilibrium time 5 h. The pseudo-second order kinetic model provides the best correlation of the experimental data compared to the pseudo-first-order kinetic model.

Keywords: Activated Carbons, Adsorbent, Adsorbent Dose, Adsorption, Agricultural, Aqueous Solution, Aqueous-Solution, Char, Charred Jute Stick, Chlorophenols, Concentration, Correlation, Cost, Data, Equilibrium, Experimental, Fly-Ash, Freundlich, Freundlich Model, Isotherm, Kinetic, Kinetic Model, Kinetics, Kinetics, Langmuir, Langmuir Model, Low Cost, Low Cost Adsorbent, Model, Models, Paranitrophenol, Peat, pH, Phenol, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Salt, Solid Waste, Solution, Sorption, Toxicity, Waste, Waste Waters, Waste-Water, Wastewater, Waters

? Sulaiman, O., Amini, M.H.M., Rafatullah, M., Hashim, R. and Ahmad, A. (2010), Adsorption equilibrium and thermodynamic studies of copper(II) ions from aqueous solutions by oil palm leaves. *International Journal of Chemical Reactor Engineering*, **8**, article number A108.

Full Text: [2010\Int J Che Rea Eng8, A108.pdf](2010/Int%20J%20Che%20Rea%20Eng8,%20A108.pdf)

Abstract: Oil palm leaf powders (OPLP), an agricultural waste material, were used as new non-conventional and low-cost adsorbents for the removal of copper(II) ions from aqueous solution. Batch studies were performed to evaluate and optimize the effects of various parameters such as contact time, pH of the solution, initial metal ion concentrations and adsorbent dosage. Langmuir, Freundlich and Temkin isotherms were used to analyze the equilibrium data at different temperatures. The experimental data fit well with the Langmuir adsorption isotherm, indicating thereby the mono layer adsorption of the copper(II) ions. The monolayer sorption capacity of OPLP for copper(II) ions was found to be 11.22 mg/g at 30 degrees C. The thermodynamic parameters like standard free energy, standard enthalpy, and standard entropy changes for the adsorption of copper(II) ions have also been computed and discussed. The heat of adsorption [Delta H degrees = -39.84 kJ/mol] implied that the adsorption was exothermic in nature.

Keywords: Adsorbent, Adsorbents, Adsorption, Adsorption Isotherm, Agricultural Waste, Batch Studies, Biosorbent, Capacity, Contact Time, Copper, Copper(II), Cu(II), Equilibrium, Freundlich, Heavy-Metal, Isotherm, Isotherms, Langmuir, Langmuir Adsorption, Langmuir Adsorption Isotherm, Leaf, Low Cost Adsorbents, Low-Cost Adsorbents, Oil, Oil Palm Leaf, PH, Powder, Removal, Sawdust, Sorption, Temkin, Thermodynamic, Thermodynamic Parameters, Water

? Ariffin, M.F.K. and Annuar, M.S.M. (2010), Adsorption and flotation of soluble crude protein by colloidal gas aphrons (CGA): Effect of selected variables and process modeling. *International Journal of Chemical Reactor Engineering*, **8**, article number A138.

Full Text: [2010\Int J Che Rea Eng8, A138.pdf](2010/Int%20J%20Che%20Rea%20Eng8,%20A138.pdf)

Abstract: The adsorption and flotation of soluble crude protein from dairy products by colloidal gas aphrons (CGA) were studied. Selected process variables that were studied with respect to protein recovery include volume ratio between crude protein and CGA, stirring speed in the separation vessel, and contact time and surfactant concentration used to generate CGA. Cetyltrimethylammonium bromide (CTAB) in the buffered solution was used as the surfactant. It was found that only volume ratio between crude protein and CGA and surfactant concentration significantly influenced the protein recovery. The protein recovery achieved via its adsorption onto CGA surface and its subsequent flotation can be adequately modeled using Langmuir kinetics.

Keywords: Adsorption, Cetyltrimethylammonium Bromide, Colloidal Gas Aphrons, Contact Time, Crude Protein, CTAB, Flotation, Foam, Kinetics, Langmuir, Langmuir Kinetics, Modeling, Protein, Recovery, Separation, Surfactant, Suspensions, Volume, Water

? Bozgeyik, K. and Kopac, T. (2010), Adsorption of bovine serum albumin onto metal oxides: adsorption equilibrium and kinetics onto alumina and zirconia. *International Journal of Chemical Reactor Engineering*, **8**, article number A139.

Full Text: [2010\Int J Che Rea Eng8, A139.pdf](2010/Int%20J%20Che%20Rea%20Eng8,%20A139.pdf)

Abstract: In this study, the equilibrium and the kinetics of Bovine Serum Albumin (BSA) adsorption onto metal oxides such as alumina (Al2O3) and zirconia (ZrO2) were investigated in a batch reactor. The effects of pH and temperature to adsorption rate and the equilibrium were studied. The equilibrium process was described by the Langmuir or the Freundlich isotherm models. The maximum adsorption capacity (Q(0)) was found as 81.6 mg/g at pH 5 and 20ºC for Al2O3 and 26 mg/g at pH 4 and 40ºC for ZrO2, respectively. The protein adsorption capacity for ZrO2 increased with increasing pH and temperature, while the protein adsorption capacity of Al2O3 increased with increasing pH and decreasing temperature. The pseudo-first-order and pseudo-second-order kinetic models were used to describe the kinetic data. The rate kinetics of BSA adsorption onto Al2O3 and ZrO2 at all pH and temperatures were best fitted with the pseudo-first-order kinetic model. The electrostatic interactions of BSA with the metal oxide surface were found to be higher at pH 5 for Al2O3 and pH 4 for ZrO2.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherms, Adsorption Rate, Alumina, Batch, Batch Reactor, Bovine Serum Albumin, BSA, Capacity, Data, Desorption, Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Isotherm Models, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Langmuir, Metal, Metal Oxide, Model, Models, Oxide, Oxides, Particles, pH, Protein, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Rate Kinetics, Surface, System, Temperature, Zeta Potential, Zirconia

? Noreen, Z., Hameed, A. and Faryal, R. (2010), Comparative analysis of biosorption potential for chromium removal by live and dead biomass of *Aspergillus niger* ZH2. *International Journal of Chemical Reactor Engineering*, **8**, article number A143.

Full Text: [2010\Int J Che Rea Eng8, A143.pdf](2010/Int%20J%20Che%20Rea%20Eng8,%20A143.pdf)

Abstract: Tannery led chromium toxicity is one of the major threats to public health in developing countries, where most of the hides are treated at local cottage industry level and chromium liquor is released without detoxification. In this connection, the present study was conducted to develop a reliable cost effective fungal-based biosorbent for chromium removal. Six strains of *Aspergillus niger* were isolated from various environmental conditions and assessed for chromium tolerance. Biosorption potentials of two different biomass, i.e., live and dead, of selected *Aspergillus niger* ZH2 was investigated as a function of appropriate equilibrium time, pH, temperature, concentration of biosorbent and adsorbate in batch system. The chromium uptake by these biomasses was quantitatively evaluated using Langmuir and Freundlich isotherms. In order to determine the best fit isotherm, three error analysis methods were used to evaluate the data: correlation coefficient, residual root mean square error and chi-square test. Maximum adsorption capacity (qmax) was calculated to be 322.60 and 12.00 mg/g for live and dead biomass respectively. Application of Langmuir isotherm showed that live biomass was more favorable (95% CI, 1.053-8.718) than dead biomass in removing chromium and thus can serve as better biosorbent.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Analysis, Aqueous-Solutions, *Aspergillus niger*, Batch, Biomass, Biosorbent, Biosorption, Capacity, Chromium, Cost, Dead, Developing Countries, Effluent, Equilibrium, Error Analysis, Freundlich, Indigenous Fungal Strains, Isotherm, Isotherms, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Isotherm, Lead, Live, Mercury, pH, Removal, Sorption, System, Temperature, Toxicity, Uptake, Zinc Ions

? Ouazene, N. and Sahmoune, M.N. (2010), Equilibrium and kinetic modelling of Astrazon Yellow adsorption by sawdust: Effect of important parameters. *International Journal of Chemical Reactor Engineering*, **8**, Article Number A151.

Full Text: [2010\Int J Che Rea Eng8, A151.pdf](2010/Int%20J%20Che%20Rea%20Eng8,%20A151.pdf)

Abstract: This paper aims to investigate the sorption of Astrazon yellow (A.Y.) onto sawdust (Aleppo pine tree), a forest waste as that acts as a low-cost adsorbent. In our experiments, the batch sorption is studied with respect to solute concentration, contact time, adsorbent dose, particle size and pH. The adsorption process attains equilibrium within 300 minutes. The extent of dye removal decreased with increasing particle size and increased with increasing contact time, adsorbent dose and pH. The equilibrium data were analysed by the Langmuir and Freundlich isotherms. The characteristic parameters for each isotherm were determined. By considering the experimental results and adsorption models applied in this study, it can be concluded that equilibrium data were represented well by the Langmuir isotherm equation. Maximum adsorption capacity calculated at 293K was 81.8 mg/g. Five kinetic models (pseudo-first order, pseudo-second order, fractional power, Elovich and intraparticle diffusion kinetic equations) were used to predict the adsorption rate constants. The kinetics of adsorption of the basic dye followed both Elovich and pseudo-second order kinetics, and intraparticle diffusion was not the sole rate-controlling step. The effective diffusion of Astrazon yellow in sawdust according to Boyd Model was 24.22 .10-12 m2/S. In order to reveal the adsorption characteristic of sawdust samples, SEM and FTIR spectra analyses were carried out. The results show that sawdust (Aleppo pine tree) can be an alternative low-cost adsorbent for removing cationic dyes from wastewater.

Keywords: Activated Carbons, Adsorbent, Adsorbent Dose, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Rate, Alternative, Analyses, Aqueous-Solution, Astrazon Yellow, Basic Dye, Batch, Capacity, Cationic Dyes, Concentration, Data, Diffusion, Dye, Dye Removal, Dyes, Elovich, Equilibrium, Experimental, Experiments, Forest, Freundlich, FTIR, FTIR Spectra, Hazardous Dye, Hazelnut Shells, Intraparticle Diffusion, Isotherm, Isotherms, Kinetic, Kinetic Equations, Kinetic Models, Kinetics, Kinetics of Adsorption, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Isotherm, Low Cost, Low Cost Adsorbent, Low-Cost Adsorbent, Low-Cost Adsorbents, Low-Cost Adsorbents, Metal-Ions, Methylene-Blue, Model, Modelling, Models, Particle Size, pH, Power, Pseudo First Order, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Rate Constants, Removal, Sawdust, SEM, Size, Sorption, Waste, Wastewater, Wood Sawdust

? Reynel-Avila, H.E., de la Rosa, G., Rojas-Mayorga, C.K., Cano-Aguilera, I. and Bonilla-Petriciolet, A. (2011), Kinetic and thermodynamic modeling of Cd+2 and Ni+2 biosorption by raw chicken feathers. *International Journal of Chemical Reactor Engineering*, **9**, Article Number: A90.

Full Text: [2011\Int J Che Rea Eng9, A90.pdf](2011/Int%20J%20Che%20Rea%20Eng9,%20A90.pdf)

Abstract: Batch experiments were performed to model kinetic and thermodynamic data for Cd+2 and Ni+2 biosorption by raw chicken feathers (CFs) under different conditions. Results indicated that Cd+2 and Ni+2 sorption onto CFs occurred on the external surface of the biosorbent. Ion removal increased with pH, whereas both endothermic and exothermic stages where observed depending on temperature. Our calculated thermodynamic parameters showed that, below the temperature of 30º C, the metal uptake of Cd+2 and Ni+2 ions may be mainly controlled by a chemisorption process. However, for temperatures higher than 30º C, it is likely that sorption of both metals onto CFs is caused by a combination of both physical and chemical processes, especially for Ni+2 ions. Maximum sorption capacities were of 0.039 (Cd+2) and 0.065 mmol/g (Ni+2) at pH 5 and 30ºC. Using 0.1 M HCl or CH3COOH as desorbing agents, approximately a 50% recovery for Cd+2 was achieved. The pseudo-second order and the general rate law models best fit the sorption kinetics data. The equilibrium metal uptake data was best described by the Sips isotherm.

Keywords: Aqueous-Solutions, Batch, Biosorbent, Biosorption, Bottom Ash, Cadmium, Chicken Feathers, Contaminated Water, Equilibrium, Hazardous Dye, Heavy-Metals, Hen Feathers, Isotherm, Keratin Fiber, Kinetic, Kinetics, Metal Biosorption, Modeling, Nickel, pH, Pseudo Second Order, Recovery, Removal, Rice Husk Ash, Sorption, Sorption Kinetics, Temperature, Thermodynamic, Thermodynamic Data, Thermodynamic Parameters, Uptake, Waste Materials, Wastewater Treatment

? Yazid, H., Sadaoui, Z. and Maachi, R. (2011), Removal of cadmium (II) ions from aqueous phase by biosorption on biological activated dates’ pedicels (Kinetic, Equilibrium and Thermodynamic Study). *International Journal of Chemical Reactor Engineering*, **9**, Article Number: A93.

Full Text: [2011\Int J Che Rea Eng9, A93.pdf](2011/Int%20J%20Che%20Rea%20Eng9,%20A93.pdf)

Abstract: The preparation of biological activated dates’ pedicels (ADP) adsorbents and its biosorption behaviour of cadmium(II) was the topic of this study. The raw (RDP) and activated (ADP) dates’ pedicels were characterized by SEM, XRF, FTIR and surface area analysis. SEM analysis revealed a heterogeneous structure for ADP and a cellular aspect different from that of RDP, due to the deposit of the bacterial film which has been constituted during the biological treatment of the material. The XRF results show the presence of potassium, calcium in RPD, and sodium in APD which could favour the retention of heavy metals in aqueous solutions by ions exchange. The FT-IR spectra showed that there are different functional groups in adsorbents, which are able to react with metal ions in aqueous solution. Biological pretreatment was carried out in nitrate enriched solution; allowing to enhance the development of denitrifying micro-organisms already existing on the organic support without the need for biomass inoculation. Biological pretreatment allowed the appearance of a bacterial film at the surface of the date pedicel particles, which improved their biosorption capacity. Indeed, the biosorption yields of cadmium (II) ions obtained at equilibrium (60 min) were 70.4 and 57.4% for ADP and RDP, respectively. The experimental data were analyzed by the Langmuir and Freundlich isotherm models and the model constants were evaluated. The maximum biosorption capacity as calculated using the Langmuir isotherm model was 10.75 mg g-1 which is greater than that of commercial and granular activated carbon. The kinetic data obtained at different initial cadmium concentrations and different temperatures were analyzed using pseudo-second-order and intra-particle diffusion models. The biosorption kinetics followed a pseudo-second-order kinetic model. The biosorption of cadmium ion was endothermic and spontaneous. Elution efficiencies with different concentrations of CaCl2, KCl and NaCl were evaluated. The desorption studies showed the reversibility of biosorption and CaCl2 was the most efficient desorbent for elution and desorption of cadmium from the biosorbant.

Keywords: Activated Carbon, Adsorption, Aqueous Solution, Biomass, Biosorption, Cadmium, Calcium, Cd(II), Copper Ions, Desorption, Diffusion, Equilibrium, Equilibrium Isotherm, Freundlich, Freundlich Isotherm, Ft-Ir, FTIR, Heavy Metals, Heavy-Metals, Isotherm, Kinetic, Kinetic Model, Kinetic Study, Kinetics, Langmuir, Langmuir Isotherm, Lead, Pine Bark, Pretreatment, Pseudo Second Order, Removal, SEM, SEM Analysis, Sorption, Thermodynamic, Thermodynamic Study, Tree Fern, Waste-Water

# Title: International Journal of Circumpolar Health

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? Wilson, K. and Young, T.K. (2008), An overview of Aboriginal health research in the social sciences: Current trends and future directions. *International Journal of Circumpolar Health*, **67** (2-3), 179-189.

Full Text: [2008\Int J Cir Hea67, 179.pdf](2008/Int%20J%20Cir%20Hea67,%20179.pdf)

Abstract: Objectives. To examine if Aboriginal health research conducted within the field of social sciences reflects the population and geographic diversity of the Aboriginal population. Study Design. Review. Methods. We searched the Web of Science Social Science Citation Index, the Arts and Humanities Citation Index and Scholars Portal for the time period 1995-2005 using search terms to reflect different names used to refer to Canada’s Aboriginal peoples. Citations that did not focus on health or Canada were eliminated. Each paper was coded according to 7 broad categories: Aboriginal identity group; geography; age; health status; health determinants; health services; and methods. Results. Based on the 96 papers reviewed, the results show an under-representation of Metis and urban Aboriginal peoples. Most of the papers are on health status and non-medical determinants of health, with a particular focus on chronic conditions and life-style behaviours. Only 6 papers examined traditional approaches to healing and/or access to traditional healers/medicines. A small number involved the use of community-based research methods. Conclusions. Further research is required to address gaps in the current body of literature. Community-based research studies are necessary to address gaps that are most relevant to Aboriginal peoples.

Keywords: 1st Nations Peoples, Aboriginal Peoples, Canada, Canada, Care Services, Citation, Community, Diverse Sample, Health Status, Knowledge, Literature, Manitoba, Non-Medical Determinants of Health, Papers, Population, Research, Web of Science, Winnipeg, Women

? Orr, P. (2011), Adherence to tuberculosis care in Canadian Aboriginal populations Part 1: definition, measurement, responsibility, barriers. *International Journal of Circumpolar Health*, **70** (2), 113-127.

Full Text: [2011\Int J Cir Hea70, 113.pdf](2011/Int%20J%20Cir%20Hea70,%20113.pdf)

Abstract: Objectives. In a 2-part series, the current literature with respect to adherence to tuberculosis care among Canadian Aboriginal populations is reviewed. In the current paper, which comprises part 1 of this review, adherence is defined, and methods of measurement, issues of responsibility and potential barriers to adherence are explored. Study design. Literature review. Methods. A systematic search and analytic review of relevant studies was undertaken, including an online search of electronic databases (PubMed, PsychINFO, MEDLINE, Native Health Database, Scopus, Social Science Citation Index) and publications by governmental and non-governmental agencies. Results. Poor adherence to therapy for TB disease is the most common cause of initial treatment failure and of disease relapse worldwide. Adherence to care for TB disease is necessary for the health of both the affected individual and society as a whole. Adherence is a task-specific behaviour that is not inherent to ethnic identity. The term applies only when common agreement over a care plan has been reached between patient and provider. The International Standards for Tuberculosis Care and the Patients Charter outline the responsibilities for adherence on the part of both patients and providers. For Canadian Aboriginals, barriers to adherence may derive from a complex interaction between the health system, personal factors and social factors, which may include dysfunctional acute and public health systems, dissonant (between health care provider and patient) belief systems, concurrent co-morbidities and life stressors, poverty and social stigma. Conclusions. Adherence is a task-specific behaviour, not a personality trait. It is influenced by the interaction of systemic, personal and societal factors. These factors must be understood within the historical experience of TB and the cultural meaning of health and illness among Indigenous Canadians. (Int J Circumpolar Health 2011; 70(2):113-127).

Keywords: Aboriginal, Adherence, Citation, Community, Compliance, Databases, Directly Observed Therapy, Disease, Follow-Up, Health, Health Care, Indigenous, Infection, Knowledge, Literature, Literature Review, Measurement, Medline, Perceptions, Prevention, Public Health, Publications, PUBMED, Review, Science Citation Index, Scopus, Self-Efficacy, Support, Tuberculosis

? Orr, P. (2011), Adherence to tuberculosis care in Canadian Aboriginal populations Part 2: a comprehensive approach to fostering adherent behaviour. *International Journal of Circumpolar Health*, **70** (2), 128-140.

Full Text: [2011\Int J Cir Hea70, 128.pdf](2011/Int%20J%20Cir%20Hea70,%20128.pdf)

Abstract: Objectives. In a 2-part series, the current literature with respect to adherence to tuberculosis care among Canadian Aboriginal populations is reviewed. In the current paper, which comprises part 2 of this review, strategies to remove barriers to TB adherence and to sustain and improve adherence are explored. Study design. Literature review. Methods. The biomedical and social science literature, including electronic databases (PubMed, PsychINFO, MEDLINE, Native Health Database. Scopus, Social Science Citation Index) were searched and reviewed with regard to relevant studies on adherence to health care, and to tuberculosis care specifically. Results. The majority of published studies of interventions to remove barriers to TB adherence are focused on the health service system and on the individual. The former include enhanced programs of directly observed therapy and directly observed preventive therapy, as well as “permeable” health services that require minimal negotiation. At the personal level, effort must be made to develop a shared knowledge of and care plan for TB, which includes Indigenous and Western scientific health beliefs and practice. The quality of the relationship between health care provider and patient is critical to the outcome of educational efforts that support adherence. Few studies address interventions within the social context, and few have used participatory methodologies in partnership with families and communities. Social supports such as assistance with childcare, transportation and shelter have been shown to be associated with improved adherence to care for other conditions. TB programs may wish to use techniques used in other health programs, such as the identification of patient “sponsors” or mentors, or the use of verbal and/or written “contracts.” Conclusions. Many of the interventional studies addressing health system barriers to TB adherence are grounded in the view that the problem rests with the patient. What is required is an approach that is responsive to the patient’s needs while holding the patient to his or her personal and societal responsibilities. Adherence to therapy is unlikely to improve in a substantial way unless Indigenous beliefs about causation and care are incorporated into a program which has meaning for the patient. (Int J Circumpolar Health 2011; 70(2):128-140).

Keywords: Aboriginal, Adherence, Biomedical, Citation, Community, Compliance, Databases, Directly Observed Therapy, Education, Health Care, Incentives, Indigenous, Infection, Interventions, Literature, Literature Review, Medical-Treatment, Medline, Patient Adherence, Preventive Therapy, Program, Public Health, PUBMED, Review, Science Citation Index, Scopus, Self-Efficacy, Tuberculosis

# Title: International Journal of Clinical and Health Psychology

Full Journal Title: [International Journal of Clinical and Health Psychology](http://redalyc.uaemex.mx/redalyc/src/inicio/HomRevRed.jsp?iCveEntRev=337)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ruiz-Pérez, R., López-Cózar, E. and Jiménez-Contreras, E. (2006), Institute for Scientific Information criteria for scientific journals selection. Its application to Spanish journals: Methodology and indicators. *International Journal of Clinical and Health Psychology*, **6** (2), 401-424.

Full Text: [2006\Int J Cli Hea Psy6, 401.pdf](2006/Int%20J%20Cli%20Hea%20Psy6,%20401.pdf)

Abstract: In the last few years the ISI databases have become not only an essential instrument for information retrieval but, due to the bibliometric indicators they offer, they are also a basic tool for institutional, journal and researcher assessment in the majority of the world. These databases index the most productive and influential journals. For these reasons it is important to know the criteria employed by ISI in its journal selection process. The goal of this paper is to bring attention to these criteria, offer a methodological guide to help scientific journal editorial managers conform their publications to these criteria to improve their chances of being indexed by ISI. The ISI criteria can be structured on four main layers: basic journal standards (timeliness of publication, fully descriptive article, titles and abstracts, complete bibliographic information for all cited references, full address information for every author, and use of peer review); journal thematic coverage; international diversity (sponsorship, editorial team, authorship, references cited, journal audience, library and database presence); and citation analysis (international citation, journal impact, editorial board member impact and publishing author impact). Every one of these aspects is analyzed and the procedures for their testing and improvement if necessary are explained.

Keywords: Analysis, Arts and Humanities Citation Index, Assessment, Attention, Authorship, Bibliometric, Bibliometric Indicators, Citation Analysis, Databases, Databases, Diversity, Errors, Evaluation, Goal, Impact, Index, Indicators, Information, Information Retrieval, Institute for Scientific Information, Instrument, ISI, Journal Citation Reports, Medicina-Clinica, Paper, Process, Publication, Publications, Publishing, Quality, Review, Science Citation Index, Selection, Social Science Citation Index, Spanish Scientific Journals, Standards, Team, Testing, Theoretical Study

? Zych, I. and Quevedo-Blasco, R. (2011), A decade of the *International Journal of Clinical and Health Psychology* (2001-2010). *International Journal of Clinical and Health Psychology*, **11** (3), 549-561.

Full Text: [2011\Int J Cli Hea Psy11, 549.pdf](2011/Int%20J%20Cli%20Hea%20Psy11,%20549.pdf)

Abstract: The International Journal of Clinical and Health Psychology was funded in 2001. It publishes three issues per year and its scope consists of promoting clinical and health psychology, focusing on the advancement of the science. The purpose of the current study consisted of conducting a bibliometric analysis of all the articles published between 2001 and 2010. Bibliometric studies are very useful to obtain information about journals’ policies. They make possible gathering information on different parameters related to the articles. The analyzed data were the evolution of the articles throughout the ten years, languages of publication, percentages of articles per countries, collaboration among authors from different countries, authors, methods, topics, samples and numbers of citations. Results show that most of the documents are original articles, collaboration among authors from different countries is common and that the journal has published works of authors from 29 different countries. The highest percentages were found for ex post facto studies, works on test validation and adaptation and adult clinical samples. These results are in agreement with the journal’s mission of promoting advancement in clinical and health psychology and show that it is a truly international journal.

Keywords: Adaptation, Adult, Analysis, Authors, Bibliometric, Bibliometric Analysis, Bibliometric Studies, Citations, Classification, Clinical and Health Psychology, Collaboration, Criteria, Descriptive Study, Evolution, Health, Health Psychology, Index, Information, Journal, Journals, Policies, Professors, Psychology, Publication, Publications, Published Works, Quasi-Experimental Research, Science, Therapy, Topics, Transnational Analysis, Validation, Web

# Title: International Journal of Clinical Pharmacy

Full Journal Title: International Journal of Clinical Pharmacy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Khoza, S. and Barner, J.C. (2011), Glucose dysregulation associated with antidepressant agents: An analysis of 17 published case reports. *International Journal of Clinical Pharmacy*, **33** (3), 484-492.

Abstract: Aim of the review Although there are several case reports in literature linking use of antidepressants and disturbances in glucose control, it is difficult to identify risk factors for serious adverse drug events from individual case reports. The aim of this review is to provide a descriptive analysis of the demographic and clinical characteristics of published glucose dysregulation case reports following initiation of antidepressant agents. Methods Published case reports of glucose dysregulation associated with antidepressants were accessed through PUBMED (MEDLINE), PsycINFO, and Web of Science (WOS) between January 1, 1970 and April 30, 2010. The following key words were used: Antidepressant agents, glucose dysregulation, hypoglycemia, hyperglycemia, diabetes mellitus, and diabetic ketoacidosis. Case reports were excluded if glucose dysregulation occurred after a drug overdose/improper dosing or after the patient was prescribed drugs known to cause glucose disturbances in addition to antidepressant agents. Results Out of the 17 cases reports reviewed, nine (53%) were of hyperglycemia while eight (47%) were of hypoglycemia. Hyperglycemia was reported following treatment with clomipramine, fluvoxamine, imipramine, mianserin, mirtazapine, paroxetine, and sertraline. Hypoglycemia was reported following treatment with doxepine, fluoxetine, imipramine, nefazodone, nortriptyline, maprotiline, and sertraline. Fourteen out of the seventeen patients were female (82%) while ten had a history of diabetes mellitus (59%). The average age of the patients was 53.9 (SD = 17.5) years (range: 24-84 years). The time to onset of glucose dysregulation ranged from 4 days to 5 months after initiation of antidepressant therapy. More than two-thirds (68%) of the cases (n = 11) reported glucose control disturbances within 1 month of therapy. Conclusions It is not clear from published case reports whether changes in glucose regulation, following antidepressant therapy initiation are due to antidepressants or changes in mood and lifestyle. Nonetheless, healthcare providers should be aware of the potential changes in glucose regulation especially in the first month of antidepressant therapy, and use appropriate clinical and laboratory monitoring to prevent serious adverse events in patients at risk.

Keywords: Analysis, Antidepressant Agents, Antidepressants, Case Reports, Conscious Rat, Control, Depressive Disorder, Diabetes, Diabetes Mellitus, Diabetes-Mellitus, Drug, Glucose Control, Glucose Dysregulation, History, Hyperglycemia, Hypoglycemia, Increases Insulin Action, Induced Hyperglycemia, Induced Weight-Gain, Literature, Methods, Mirtazapine Therapy, Monitoring, Mood, Obese-Patients, Placebo-Controlled Trial, Pubmed, Review, Risk, Risk Factors, Science, Serotonin Reuptake Inhibitors, Therapy, Treatment, Web of Science

# Title: International Journal of Clinical Practice

Full Journal Title: International Journal of Clinical Practice

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhang, L., Zhang, L., Lu, Y., Wu, B., Zhang, S., Jiang, H., Ge, J. and Chen, H. (2011), Efficacy of statin pretreatment for the prevention of contrast-induced nephropathy: A meta-analysis of randomised controlled trials. *International Journal of Clinical Practice*, **65** (5), 624-630.

Abstract: Contrast-induced nephropathy (CIN) is a common cause of acute kidney injury. Whether additional benefits can be achieved with the use of statin in decreasing the risk of CIN remains undetermined. The purpose of this meta-analysis is to evaluate the effects of statin pretreatment for the prevention of CIN. PUBMED, MEDLINE, Web of Science, EMBASE and EBM Reviews databases were searched for randomised controlled trials comparing statin pretreatment with non-statin pretreatment for the prevention of CIN. Two reviewers independently assessed studies and performed data extraction. Risk ratio (RR) or weighted mean differences (WMD) with 95% confidence intervals (CI) were calculated using random-effects models. Four trials with 751 subjects were included. Pooled analyses showed that the incidence of CIN was not significantly lower in statin pretreatment group, as compared with control group (RR = 0.76, 95% CI 0.44-1.29, p = 0.30). Similarly, none of 276 patients in statin pretreatment group needed renal replacement therapy (RRT), which was not significantly less than 2 of 275 patients assigned to control group during 1-month follow up (RR = 0.33, 95% CI 0.03-3.17, p = 0.34). Moreover, statin pretreatment was associated with mild reduction of serum creatinine (SCr) (WMD =) 0.06 mg /dl, 95% CI) 0.12 to 0.00 mg /dl, p = 0.05). The current cumulative evidence suggests that statin pretreatment may neither prevent CIN nor reduce the need for RRT. However, it may slightly decrease the level of SCr.

Keywords: Acute-Renal-Failure, Angiography, Atorvastatin, Confidence Intervals, Control, Databases, Dysfunction, Efficacy, Embase, Follow-Up, Heart-Failure, Injury, Insufficiency, Medline, Meta-Analysis, Percutaneous Coronary Intervention, Prevention, Prognostic Implications, Pubmed, Ratio, Risk, Risk-Factors, Science, Sodium-Bicarbonate, Therapy, Web of Science

# Title: International Journal of Coal Geology

Full Journal Title: [International Journal of Coal Geology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5867&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=fc53eb1c0c91a077bce36428558714e4)

ISO Abbreviated Title: Int. J. Coal. Geol.

JCR Abbreviated Title: Int J Coal Geol

ISSN: 0166-5162

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Language: English

Publisher: Elsevier Science BV

Publisher Address: Po Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Energy & Fuels: Impact Factor

Geosciences, Multidisciplinary: Impact Factor

Mahaffy, J.F. (1988), Vegetational history of the Springfield coal (middle Pennsylvanian of Illinois) and distribution patterns of a tree-fern Miospore, *Thymospora pseudothiessenii*, based on Miospore profiles. *International Journal of Coal Geology*, **10** (3), 239-260.

Full Text: [I\Int J Coa Geo10, 239.pdf](I/Int%20J%20Coa%20Geo10,%20239.pdf)

Abstract: The vegetational history of the Springfield (No. 5) Coal Member in the southwestern and southeasternmost portion of the Illinois Basin is reconstructed from palynological profiles of the coal seam. In most parts of the swamp dominance was shared by arborescent lycopods that produced *Lycospora granulata*, and two tree ferns that produced *Thymospora pseudothiessenii* and *Laevigatosporites globosus*. The profiles suggest that populations of the *Thymospora* producing tree fern occupied sites for long periods. In the Southwestern portion of the basin vegetation changes can be correlated to the splitting of a coal in the proximity to a paleochannel. A greater understanding of the ecological requirements of some of the spore taxa of the Springfield Coal is seen by the patterns of the same taxa in surrounding Spoon and Carbondale Coals. Some taxa appear to be more generalists and other more specialists that are more restricted to a certain type of coal.

Cross, A.T. and Phillips, T.L. (1990), Coal-forming plants through time in North-America. *International Journal of Coal Geology*, **16** (1-3), 1-46.

Full Text: [I\Int J Coa Geo16, 1.pdf](I/Int%20J%20Coa%20Geo16,%201.pdf)

Abstract: Economically important coals of North America were formed principally from autochthonous peats of freshwater swamps. North American coals of different ages are generally characterized by different dominant swamp trees or occasionally by shrubs or herbs. Carbonized compressions and permineralized or vitrinized tissues within the coal, well-preserved plants in coal-ball concretions, and microfossils (cuticles, spores, pollen, resins and other identifiable plant detritus), all contribute to identification of plants that formed coal.

Of principal importance in coal formation are vascular plants. Interaction of bacteria and fungi have been important in degradation of peat to form most humic (banded) coals dominated by tissues and organs of vascular plants. Their alteration products and algae constitute significant amounts, by volume, of some coals, particularly sapropelic, canneloid and boghead layers. Algae have contributed to some singular coal accumulations locally, one as early as Precambrian.

Compression floras from clastic sediments proximal to coal, or included in clastic partings, may or may not represent peat-swamp plants that formed coals. This needs to be corroborated by fossils from within the coal. Roof-shale floras occasionally indicate coal-bed plant assemblages, but more often, they represent different environments or habitats in which organic-rich mudstones or carbonaceous shales, but not economic coals, might have accumulated.

Identification of plants comprising floras of coals and associated rocks of any age presents difficulties according to kinds of plants and plant parts present, preservational states, etc. Most peat-swamp plants represent atypical terrestrial communities adapted to hydrologically influenced succession, in habitats of low pH and low nutrient availability. Such communities are constituted of a comparatively limited inventory of tree, shrub and herb types, generally widely distributed within coal-forming peat-swamp habitats, often occurring repetitiously for long periods of time, in coal-bearing strata.

Floras of localized coal seams of Late Devonian to Late Mississippian age are generally dominated by fossil remains of lycopods. Floras in locally developed, thin, Middle to Late Devonian coals of Northwest Territories are dominated by lycopod spores. A thin Late Devonian coal in West Virginia also contains meager lycopod debris transported from near-swamp habitats, but the coal is dominated by plant material from a scrambling, fern-like shrub.

Five major kinds of tropical to subtropical trees contributed to the peats that formed the principal Pennsylvanian coal beds: lycopods, tree ferns, calamites, seed ferns and cordaites. The extensive diversity in the architectural framework of stems (combinations of supporting or strengthening tissues), and the nature of the wood, bark or fibrous tissues in stem and root systems of these plants, greatly modified the role of each in contributing mass to the peat accumulation and ultimately to the remaining volume of each in coal. Coal-ball studies have demonstrated that the peat was comprised of much bark and root material when the coal flora was dominated by lycopods, or of roots and some foliage when dominated by tree ferns. Wood was a relatively minor component of the biomass constituting the peat except in swamps with abundant cordaites or calamites. Pennsylvanian peat swamps were dominated successively by several types of lycopod trees and later by tree ferns, following the extinction of many lycopods.

Early Permian coal floras of the Appalachians represent a waning of tree-fern-dominated Late Pennsylvanian floras with minor elements of callipterids and conifers. In the southwest U.S.A., the Early Permian coal floras are present only in the gigantopterid province. Those coals contain significant ferns, seed ferns, lycopods and conifers. Late Triassic floras in coals of the Atlantic margin rift basins are dominated by cycadophytes and ferns. The palynofloras of these coal beds demonstrate close relationship of these strata with those in the High Atlas, Morocco. Mid-Jurassic coals of Oaxaca, Mexico, are characterized by cycadeoids and a glossopterid and lack conifers and ginkgophytes. Late Jurassic coal floras of the Canadian and American Rocky Mountains are dominated by cycadophytes, with ferns, conifers and ginkgophytes, in descending importance. Early Cretaceous coal floras are exemplified by the Kootenai Formation of Montana and equivalents in Alberta and Saskatchewan. Great floral diversity characterizes these with several conifers present (Taxodiaceae, Elatocladus and Arthrotaxites) that were absent from the Morrison Formation below. These represent delta-plain swamps of temperate climate. Many ferns, pteridosperms and bryophytes are present, but cycadophytes and ginkgophytes are limited.

Late Cretaceous and Tertiary swamps were first dominated by woody conifers and later by mixtures of conifers and dicots, depending on paleolatitude. Wood, including that of root systems, was a major peat component. Generic diversity in peat swamps increased markedly with Late Cretaceous evolution of flowering plants. The Late Cretaceous is characterized in the Rocky Mountains and Great Plains areas by diverse floras rich in angiosperms. Cenomanian floras of Texas and Oklahoma lack the abundant angiospermous palynofloras of the coals of the eastern Gulf Coast. Late Cretaceous coal floras are well represented on the western margin of the Western Interior seaway. Several arborescent conifers (Sequoia, Brachyphyllum, Moriconia) and angiosperms (Rhamnites, Platanus, Cissus) identify peat-forming warm-temperate swamps of that period. Several types of modern peat swamps have served as models for the interpretation of Tertiary coal floras. However, decreasing similarity of these models to increasingly older Tertiary coal floras constrain the accuracy of interpretation of the kinds of plants and the depositional and paleoclimatic conditions.

Keywords: Swamp Vegetation, West Texas, Pollen, Angiosperm, Morphology, Resolution, Spores, Basin, Flora, Peat

Hower, J.C., Eble, C.F. and Rathbone, R.F. (1994), Petrology and Palynology of the no 5 Block coal bed, northeastern Kentucky. *International Journal of Coal Geology*, **25** (2), 171-193.

Full Text: [I\Int J Coa Geo25, 171.pdf](I/Int%20J%20Coa%20Geo25,%20171.pdf)

Abstract: The upper Middle Pennsylvanian (middle Westphalian D equivalent) No. 5 Block coal bed (Eastern Kentucky Coal Field of the Central Appalachian Basin) is a low-sulfur, compliance coal resource, dominantly comprised of dull, inertinite-rich lithotypes. Ash yields tend to be highly variable in the No. 5 Block, as does bed thickness and frequency of bed splitting. This study describes the petrographic, palynologic and geochemical characteristics of the No. 5 Block coal bed, and reports on some temporal and spatial trends among these parameters in eastern-northeastern Kentucky. Petrographically the No. 5 Block coal is predominated by dull, often high-ash lithotypes, with inertinite contents commonly exceeding 30% (mmf). The coal thins to the north-northwest where it tends to be higher in vitrinite and sulfur content. Representatives of large and small lycopsids and ferns (both tree-like and small varieties) dominate the No. 5 Block coal bed palynoflora. Calamite spores and cordaite pollen also occur but are less abundant. Small lycopsid (Densosporites spp. and related crassicingulate genera) and tree fem (e.g. Punctatisporites minutus, Laevigatosporites globosus) spore taxa are most abundant in dull lithotypes. Bright lithotypes contain higher percentages of arboreous lycopsid spores (Lycospora spp.). Regionally, the No. 5 Block coal contains abundant Torispora securis, a tree fem spore specially adapted for desiccation prevention. This, along with overall high percentages of inertinite macerals, suggest that peat accumulation may have taken place in a seasonally dry (?) paleoclimate.

The No. 5 Block coal bed thickens rather dramatically in a NW-SE direction, as does the frequency of coal bed splitting. This phenomenon appears to be related to increased accommodation space in the southeastern portion of the study area, perhaps via penecontemporaneous growth faulting. Maceral and palynomorph variations within the bed correspond with these changes. Thin coal along the northwestern margin tends to be vitrinite rich and contains abundant Lycospora, perhaps reflecting relatively stable peat-forming conditions. Thicker coal to the southeast contains more inertinite, high-ash coal layers, and inorganic partings. Spore floras contain more small lycopsid and tree fern components and are temporally variable, perhaps indicating a more unstable peat-forming environment.

Keywords: Basin

Hower, J.C., Helfrich, C.T. and Williams, D.A. (1994), Palynologic and Petrographic intervals in the upper Pennsylvanian McLeansboro Group, Western Kentucky. *International Journal of Coal Geology*, **26** (1-2), 117-132.

Full Text: [I\Int J Coa Geo26, 117.pdf](I/Int%20J%20Coa%20Geo26,%20117.pdf)

Abstract: The McLeansboro Group (formerly the Sturgis Formation) in the Western Kentucky coal field spans the upper Desmoinesian (Westphalian D) and the Missourian and Virgilian series (Stephanian). Extensive drilling has demonstrated the lateral continuity of major and minor beds in the group, making it possible to study vertical and lateral changes in palynology and petrology. Significant features of the McLeansboro Group are the marine zones over most of the-coals and paleochannels, which are the only disruptions to the continuity of other lithologies. The Desmoinesian Baker (No. 13), and Wheatcroft (No. 13a) coal beds were included in the study but the primary emphasis is on the Missourian and Virgilian coals. Patoka Formation (lower Missourian) coals are dominated by tree fem spores with lesser amounts of sphenopsids, ferns and cordaites spores. This is in marked contrast to the arborescent lycopod-dominated Desmoinesian coals. Only the No. 15 coal bed exceeds 80% vitrinite: the vitrinite content of the No. 16 coal bed is less than 72%, the lowest of any Western Kentucky humic coal. The Bond Formation (upper Missourian) represents a distinct floristic interval, with a greater diversity of plant groups than in the Patoka Formation. Herbaceous lycopod spores, which are relatively minor contributors to the Patoka coals, are common in the Bond Formation. The coals generally exceed 80% vitrinite.

The Mattoon Formation (Virgillian) coals have a variety of palynomorph assemblages. The low-sulfur Geiger Lake coal bed is dominated by tree fem spores, with important contributions from other ferns and sphenopsids. Similar to the underlying tree fern interval, vitrinite contents are less than 80%. The uppermost Mattoon coals are dominated by tree ferns and are notable in being the only coals more than 1 m thick in the Stephanian portion of the section, with the top coal being 4.3 m thick. The uppermost coals generally contain more than 80% vitrinite. The Permian Mauzy Formation overlies the McLeansboro Group.

The palynologic/petrographic intervals appear lo represent fluctuating dry (low vitrinite) and wet intervals within the Stephanian, which was itself drier than the Westphalian D.

Keywords: Coal-Swamp Vegetation, Patterns

Willard, D.A., Dimichele, W.A., Eggert, D.L., Hower, J.C., Rexroad, C.B. and Scott, A.C. (1995), Paleoecology of the Springfield coal member (Desmoinesian, Illinois basin) near the Leslie cemetery Paleochannel, southwestern Indiana. *International Journal of Coal Geology*, **27** (1), 59-98.

Full Text: [I\Int J Coa Geo27, 59.pdf](I/Int%20J%20Coa%20Geo27,%2059.pdf)

Abstract: The Springfield Coal Member (Carbondale Group, Petersburg Formation of Indiana) is split locally in Warrick and Gibson Counties, Indiana, by clastic rocks of the Folsomville Member (Carbondale Group, Petersburg Formation) that represent the Leslie Cemetery paleochannel, part of a large, interconnected paleochannel system in the Springfield coal bed. This study incorporated analysis of miospore and megaspore assemblages, coal petrography, plant compression fossils and conodonts from the coal and clastic split to document changes in the swamp and its vegetation in response to the activity of the Leslie Cemetery paleochannel. Palynological and petrographic data indicate that environmental conditions and vegetation in the lower bench of coal near the Leslie Cemetery paleochannel were similar to those found in profiles through the coal bed at sites near the larger, more extensive Galatia paleochannel. Miospore floras of the high-vitrinite, lower bench of coal were dominated by tree-fern miospores, with those of lycopsids ranking second in abundance; megaspore assemblages were dominated by lycopsid megaspores. Near the contact between the lower bench of coal and clastic split, medullosan prepollen increases in abundance and fusain bands are more common, which may indicate the occurrence of fire, either within or outside the swamp. Vegetation in the Folsomville Member and upper bench of coal differ markedly from that of the lower bench of coal. Plant megafossils from the Folsomville Member indicate dominance by pteridosperms and/or lycopsids and Folsomville Member miospores assemblages are dominated by lycopsid miospores most typically found in mudstones, including Lycospora torquifer and higher than normal abundances of Granasporites medius. In the transition from clastic rocks of the Folsomville Member to the upper bench of coal, miospores of ‘ecotonal’ lycopsids (Paralycopodites) reach their peak abundance, pteridosperms dominate megafossil assemblages and inertinite levels are relatively high. At higher levels of the upper bench of coal, vitrinite levels are higher and miospore assemblages are dominated by lycopsid miospores typical of coal swamps (Lycospora granulata, L. pusilla). The presence of conodonts in coalballs in the upper bench of coal and spirorbid worms in the split indicate that the paleoswamp may have received some marine or brackish water influence. Higher than normal salinity levels may explain the vegetational changes observed in the upper bench of coal near the Leslie Cemetery paleochannel.

Keywords: Arborescent Lycopsids, Swamp, Lepidostrobus, Euramerica, Vegetation, Lycospora, History, USA

Lyons, P.C., Orem, W.H., Mastalerz, M., Zodrow, E.L., Viethredemann, A. and Bustin, R.M. (1996), 13C NMR, micro-FTIR and fluorescence-spectra, and pyrolysis-gas chromatograms of coalified foliage of late Carboniferous medullosan seed ferns, Nova Scotia, Canada: Implications for coalification and chemotaxonomy, USA. *International Journal of Coal Geology*, **27** (2-4), 227-248.

Full Text: [I\Int J Coa Geo27, 227.pdf](I/Int%20J%20Coa%20Geo27,%20227.pdf)

Abstract: The cuticles and cuticle-free compressions of three Carboniferous medullosan seed-fern leaf species (Macroneuropteris scheuchzeri, Neuropteris ovata var. simonii and Alethopteris lesquereuxii) were analyzed by elemental, C-13 nuclear magnetic resonance (NMR), micro-FTIR (Fourier transform infrared) and coal petrographic techniques. The 13C NMR spectra of the cuticle-free compressions and the associated whole coal (high volatile A/B bituminous coal rank) are generally similar and consist of a large aromatic carbon peak, a smaller aliphatic carbon peak and a shoulder on the aromatic peak, representing phenolic carbons. In contrast, the C-13 NMR spectra of the cuticles from the same leaves have a predominant peak for aliphatic carbons and a much smaller aromatic carbon peak. This difference in aromaticity between the cuticles and the cuticle-free compressions is also reflected in the higher atomic H/C ratios of the cuticles. Micro-FTIR spectra of the cuticles show oxygenated functional groups (carboxyl and ketone) similar to those in modern cuticles but their most characteristic feature is very strong bands in the aliphatic stretching region. The cuticle-free compressions (mainly vitrinite), in turn, show the absence or significant reduction in oxygenated functional groups, reduction in aliphatic stretching bands and, usually, increased absorbance of aromatic out-of-plane deformation in the 700-900 cm-1 region. Fluorescence spectra for the cuticles from all three species show a great similarity with a lambda(max) at 580-590 nm, probably reflecting a similar degree of coalification, which is consistent with the similar vitrinite reflectance (R(r)) and H/C and O/C ratios of the cuticle-free compressions.

These results indicate that leaf cuticle-free compressions, which were initially cellulose rich (similar to 90% cellulose and hemicellulose, < 10% lignin), can alter, during peatification and coalification, to a macromolecular structure similar to that of coalified wood (initially similar to 50% cellulose and hemicellulose, similar to 30%-50% lignin). Thus, a lignin-enriched structure is not a prerequisite for the formation of the macromolecular structure of vitrinite. In addition, the micro-FTIR spectra reveal the complexity of the molecular structure in coalified seed-fern leaves. The micro-FTIR data reveal some significant differences among the cuticles that may be of chemotaxonomic value. Clearly, a combination of macro- and micro-techniques offers a better basis for the interpretation of the molecular structure of pre-macerals and their alteration during peatification and coalification. Also, the data presented in this paper provide important new information that extends the data from morphological and cuticular taxonomic studies of some seed ferns. The data are encouraging preliminary advances in the chemotaxonomy of medullosan seed fern species.

Pyrolysis-gas chromatography (PY-GC) data for the cuticles of three seed-fern leaves indicate distinct chemical signatures for the two neuropterid leaves as compared to the Alethopteris leaf. This perhaps indicates a chemotaxomic factor, or it could be related to the greater thickness of the cuticle of Alethopteris. Mass spectrometric data are needed to identify individual components in the PY-GC chromatograms.

Keywords: Indiana Paper Coal, Flash Pyrolysis, Subbituminous Coal, Plant Cuticles, IR, Chemistry, Vitrinite, Rank, Peat, Spectroscopy

Di Michele, W.A., Eble, C.F. and Chaney, D.S. (1996), A drowned lycopsid forest above the Mahoning coal (Conemaugh Group, Upper Pennsylvanian) in eastern Ohio, USA. *International Journal of Coal Geology*, **31** (1-4), 249-276.

Full Text: [I\Int J Coa Geo31, 249.pdf](I/Int%20J%20Coa%20Geo31,%20249.pdf)

Abstract: Over 800 mud-filled casts of upright lycopsid tree stumps have been documented immediately above the Mahoning coal in an active underground mine located in northwestern Jefferson County, Ohio. The coal body originated as a pod-shaped peat body of similar to 60 km2. Trees are rooted at several levels within a thin (15-40 cm) bone coal directly above the banded coal; they extend upward up to 15 cm into overlying, flat-bedded, carbonaceous mudstones that coarsen up. From a maximum basal diameter of 1.2 m, stumps taper upward to diameters no less than 0.3 m. Within single-entry transects, < 6 m wide that total 2585 m in length, stumps are randomly distributed. The trees are identified as lepidodendrids on the basis of gross morphology, external stem patterns, and attached stigmarian root systems, and provisionally as Lepidophloios or Lepidodendron by associated palynology of the enclosing matrix. Palynological analyses of incremental seam samples indicate an initial dominance of lycopsid spores with lepidodendracean affinities (Lycospora granulata from Lepidophloios hallii), replaced upwards by tree-fern spores, with a reoccurrence of lepidodendracean spores in the upper benches; spores of Sigillaria (Crassispora) are abundant only at the base of the coal. Petrographic analyses indicate a parallel trend from vitrinite-rich to inertinite-and liptinite-rich upward in the coal body. All data indicate that the peat represented by the Mahoning coal was drowned slowly. During the earliest stages of inundation, a lycopsid forest was re-established, only to be subsequently drowned.

Keywords: Swamp Vegetation, Paleoecology, Euramerica, Reproduction, Environment, Illinois, Lycopods, History, Bed

Eble, C.F., Greb, S.F., Williams, D.A. and Hower, J.C. (1999), Observations on the palynology, petrography and geochemistry of the Western Kentucky number 4 coal bed. *International Journal of Coal Geology*, **39** (1-3), 121-139.

Full Text: [I\Int J Coa Geo39, 121.pdf](I/Int%20J%20Coa%20Geo39,%20121.pdf)

Abstract: Eight bench-column samples of the Western Kentucky Number 4 coal bed, collected from an area along the southern margin of the Western Kentucky Coal Field, were analyzed palynologically, petrographically, and geochemically to document both temporal and spatial variability among these parameters. The Western Kentucky Number 4 coal occurs near the top of the Tradewater Formation, is of Early Desmoinesian age, and is correlative with the lower part of the Allegheny Formation of the Appalachian Basin, and Late Bolsovian strata of western Europe. Palynologically, the coal is co-dominated by spores that were produced by lycopod trees (Lycospora and Granasporites medius) and tree ferns. Thin-walled tree fern spores (Punctatisporites minutus, P, minutus, P. rotundus) are more abundant than thick-walled forms (Laevigatosporites globosus, P. granifer). Calamitean spores (Calamospora and Laevigatosporites spp.) are locally abundant as is cordaitean pollen (Florinites). Small fern (Granulatisporites) and small lycopod spores (Densosporites, Cirratriradites, Endosporites and Anacanthotriletes spinosus) are present, but occur in minor amounts. Temporal changes in palynomorph composition occur, but are not uniform between columns. Spatial variability among columns is also evident. Petrographically, the coal is dominated by vitrinite macerals, with telinite and telocollinite generally occurring more commonly than desmocollinite and gelocollinite. Basal benches typically contain high percentages of vitrinite; middle benches usually contain higher percentages of liptinite and inertinite. In about half the studied columns, the terminal coal benches show a slight increase in vitrinite. In the study area, the petrography of the Western Kentucky Number 4 coal is more uniform than the palynology. Ash yields and total sulfur contents are temporally uniform in some columns, but variable in others. In the latter case, higher percentages of ash and sulfur occur at the base of the bed and decrease up to the middle of the bed. The terminal benches of these columns often, but not always, show slight increases in ash or sulfur. Both syngenetic and epigenetic forms of sulfur are present in the Western Kentucky Number 4 coal. The high vitrinite contents and moderate to high sulfur contents suggest that the Western Kentucky Number 4 paleomire was mainly planar and rheotrophic throughout its developmental history. Groundwaters carrying dissolved solutes may have helped neutralize the normally acidic interstitial peat waters allowing for the production of sulfide minerals. Several of the columns with high sulfur contents at the base of the bed occur in faulted areas. The faults could have promoted the flow of groundwaters through the peat, providing an increased dissolved load for acid mitigation and sulfide formation. The concentration of sulfur at the base of the bed may be a function of the peat/underclay contact enhancing sulfide formation. The clay layer may also have acted as an impermeable boundary for downward moving groundwaters, causing mainly lateral, rather than vertical movement along the base of the coal bed. (C) 1999 Elsevier Science B.V. All rights reserved.

Keywords: Coal, Palynology, Petrography, Peat Formation, Lepidostrobus, Euramerica, Lycospora, USA

Hower, J.C., Calder, J.H., Eble, C.F., Scott, A.C., Robertson, J.D. and Blanchard, L.J. (2000), Metalliferous coals of the Westphalian A Joggins Formation, Cumberland Basin, Nova Scotia, Canada: Petrology, geochemistry, and palynology. *International Journal of Coal Geology*, **42** (2-3), 185-206.

Full Text: [I\Int J Coa Geo42, 185.pdf](I/Int%20J%20Coa%20Geo42,%20185.pdf)

Abstract: Five coals of Westphalian A (early Middle Pennsylvanian) age were sampled from the Joggins Formation section exposed along Chignecto Bay at Joggins, Nova Scotia. Coal beds along the bay were mined beginning in the early 17th century, yet there have been few detailed published investigation of the coal beds of this classic section. The lowermost coal, the Upper Coal 28 (Upper Fundy), is a high-vitrinite coal with a spore assemblage dominated by arboreous lycopsid spores: with tree ferns subdominant, The upper portions of the coal bed have the highest ratio of well-preserved to poorly-preserved telinite of any of the coals investigated. Coal 19 (“clam coal”) has 88% total vitrinite but, unlike the Fundy coal bed, the telinite has a poor preservation ratio and half the total vitrinite population comprises gelocollinite and vitrodetrinite. The latter coal bed is directly overlain by a basin-wide limestone bed. The Lower Kimberly coal shows good preservation of vitrinite with relatively abundant telinite among the total vitrinite, The Middle Kimberly coal, which, underlies the tetrapod-bearing lycopsid trees found by Lyell and Dawson in 1852, exhibits an upward decrease in arboreous lycopod spores and an upward increase in the tree fern spore Punctatisporites minutes. Telinite preservation increases upwards in the Middle Kimberly but overall is well below the preservation ratio of the Upper Fundy coal bed. The coals all have high sulfur contents, yielding up to 13.7% total sulfur for the lower lithotype of the Upper Fundy coal bed. The Kimberly coals are not only high in total and pyritic sulfur, but also have high concentrations of chalcophile elements. Zinc, ranging up to 15,000 ppm (ash basis), is present as sphalerite in fusain lumens. Arsenic and lead each exceed 6000 ppm (ash basis) in separate lithotypes of the Kimberly coals. Together these data are consistent with elevated pH in planar mires. The source of the elemental enrichment in this presumed continental section is enigmatic. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Joggins, Nova Scotia, Petrology, Geochemistry, Palynology, Eastern Kentucky, Southwestern Virginia, Maritimes Basin, Bed, Paleoecology, Deposit, Constraints, Coalfield, Migration, Evolution

Eble, C.F., Greb, S.F. and Williams, D.A. (2001), The geology and palynology of Lower and Middle Pennsylvanian strata in the Western Kentucky Coal Field. *International Journal of Coal Geology*, **47** (3-4), 189-206.

Full Text: [I\Int J Coa Geo47, 189.pdf](I/Int%20J%20Coa%20Geo47,%20189.pdf)

Abstract: The Western Kentucky Coal Field is the southern tip of the Eastern Interior, or Illinois Basin. Pennsylvanian rocks in this area, which include conglomerate, sandstone, siltstone, shale, limestone and coal, were deposited primarily in coastal-deltaic settings at a time when western Kentucky was located close to the equator. This paper discusses temporal changes in regional sedimentation patterns and coal-forming floras of Lower and Middle Pennsylvanian strata in the Western Kentucky Coal Field.

Lower Pennsylvanian strata of the Caseyville Formation are characterized by paleovalley-filling sedimentation patterns and extabasinal quartz pebbles. Caseyville Formation coals are characteristically thin and discontinuous and were strongly influenced by subsidence within underlying paleovalleys, and the dissected lower Pennsylvanian paleotopography. Caseyville coals are commonly dominated by Lycospora, but can also have variable palynofloras, which probably reflects variable edaphic conditions and edge effects within small, patchy paleomires. Tradewater Formation strata show increased marine influences and tidal-estuarine sedimentation, especially in the middle and upper parts. Coal beds in the lower part of the Tradewater typically are thin and discontinuous, although some economically important beds are present. Coals become thicker, more abundant and more laterally persistent towards the top of the formation. Palynologically, lower and middle Tradewater Formation coals are dominated by Lycospora, but begin to show increased amounts of tree fern spores. Middle and upper Tradewater coals are thicker and more continuous, and contain high percentages of tree fern spores. In addition, cordaite pollen is locally abundant in this interval.

Carbondale and Shelburn (Desmoinesian) strata are much more laterally continuous, and occur within classic cyclothems that can be traced across the coal field. Cyclothems have long been interpreted as being eustatically driven, and glacio-eustacy controlled not only sedimentation but also the formation of Desmoinesian paleomires. Palynologically, Carbondale and Shelburn coals are either dominated by Lycospora or have heterogeneous palynofloras. Palynologic and coal-quality data suggest that hydrologic base level may have been the primary control on Desmoinesian paleomires, rather than paleoclimate, as the coals display rheotrophic, rather than ombrotrophic characteristics. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Kentucky, Pennsylvanian, Coal, Palynology, Paleoclimate Controls, Swamp Vegetation, Peat Formation, Indiana, Reproduction, Euramerica, Basin, USA

Zodrow, E.L. and Mastalerz, M. (2001), Chemotaxonomy for naturally macerated tree-fern cuticles (Medullosales and Marattiales), Carboniferous Sydney and Mabou Sub-Basins, Nova Scotia, Canada. *International Journal of Coal Geology*, **47** (3-4), 255-275.

Full Text: [I\Int J Coa Geo47, 255.pdf](I/Int%20J%20Coa%20Geo47,%20255.pdf)

Abstract: Naturally macerated cuticles (NMC) and one synangium, representing medullosalean and marattialean tree-fern species, from two Carboniferous coalfields in Nova Scotia, Canada, are investigated. The samples were analyzed by infrared spectroscopy (FTIR), and by pyrolysis-gas chromatograph/mass spectrometry (py-Gc/Ms) techniques in search for chemical signatures that would help in developing a chemotaxonomic classification of Carboniferous fern species, assuming genetically dependent make-up of cuticles. FTIR-derived CH2/CH3 ratios, in conjunction with contributions from carboxyl groups, demonstrated a better potential for discriminating between medullosalean genera and species than molecular signatures obtained by py-Gc/Ms. However, the latter provided better data for differentiating medullosalean from marattialean tree ferns as a group. Changes in the chemical make-up of naturally macerated cuticles due to sample preparation are discussed. (C) 2001 Elsevier Science B.V All rights reserved.

Keywords: Carboniferous, Naturally Macerated Tree-Fern Cuticles, FTIR, PY-Gc/Ms Analyses, Chemotaxonomy, Epidermal Structure, FT-IR, Foliage, Spectra, Coals

? Querol, X., Moreno, N., Umaña, J.C., Alastuey, A., Hernández, E., López-Soler, A. and Plana, F. (2002), Synthesis of zeolites from coal fly ash: An overview. *International Journal of Coal Geology*, **50** (1-4), 413-423.

Full Text: [2002\Int J Coa Geo50, 413.pdf](2002/Int%20J%20Coa%20Geo50,%20413.pdf)

Abstract: Coal combustion by-products production in USA and EU is estimated in around 115 million tons per year. A large portion of this production is accounted for the coal fly ash (CFA). Cement and concrete manufacturing consumes most of the CFA produced. Zeolite synthesized from CFA is a minor but interesting product, with high environmental applications. Zeolites may be easily obtained from CFA by relatively cheap and fast conversion processes. This paper provides an overview on the methodologies for zeolite synthesis from CFA, and a detailed description of conventional alkaline conversion processes, with special emphasis on the experimental conditions to obtain high cation exchange capacity (CEC) zeolites. Zeolitic products having up to 3 meq g−1 may be easily obtained from high-glass CFA by direct conversion. A review of potential applications of different zeolitic products for waste water and flue gas treatment is also given. The examination of the data presented by different authors reveals that one of the main potential application of this material is the uptake of heavy metals from polluted waste waters. The zeolitic material may be also used for the uptake of ammonium from polluted waters but high concentrations of other cations may considerably reduce the ammonium absorption efficiencies due to ion competition. Some of the zeolites synthesized may be also used as molecular sieves to adsorb water molecules from gas streams or to trap SO2 and NH3 from low-water gaseous emissions.

Keywords: Coal Fly Ash, Zeolite Synthesis, Cation Exchange Capacity, Heavy Metals and Ammonium Uptake, Molecular Sieves

? Gensterblum, Y., van Hemert, P., Billemont, P., Battistutta, E., Busch, A., Krooss, B.M., De Weireld, G. and Wolf, K.H.A.A. (2010), European inter-laboratory comparison of high pressure CO2 sorption isotherms II: Natural coals. *International Journal of Coal Geology*, **84** (2), 115-124.

Full Text: 2010\Int J Coa Geo84, 115.pdf

Abstract: In order to assess and improve the quality of high-pressure sorption isotherms of carbon dioxide (CO2) on coals, an inter-laboratory study (Round Robin) has been conducted among three European research laboratories. Excess sorption isotherms, determined in a first round of measurements, on Filtrasorb 400 (F400) activated carbon showed excellent agreement. In the second round of this study, excess sorption isotherms were determined on three coals at 318 K using the manometric (TU Delft, Netherlands and RWTH Aachen University, Germany) and the gravimetric (University Mons, Belgium) methods up to 16 MPa. The CO2 excess sorption isotherms for the three coal samples, a lignite, a bituminous coal and a semi-anthracite, exhibited maximum values of 1.77±0.07, 1.37±0.01 and 1.37±0.05 mol kg(-1) respectively. The pressure ranges for the observed maximum excess sorption capacities decreased with increasing maturities from 6.89±0.5 MPa for the lignite, to 6.68±0.4 MPa for the bituminous coal and to 5.89±0.6 MPa for the semi-anthracite. The results show that high-pressure CO2 excess sorption isotherms on natural coals in the supercritical range can be determined accurately with both gravimetric and manometric equipment. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Angle, Argonne Premium Coals, Behavior, Belgium, Bituminous Coal, Carbon, Carbon Dioxide, Carbon-Dioxide, CH4, CO2, CO2 Sorption, Coals, Comparison, Gas-Adsorption, Germany, High Pressure, Inter-Laboratory Comparison, Isotherms, Lignite, Methane, Mixtures, Pressure, Research, Semi-Anthracite, Sorption, Sorption Isotherms, Stressed Coal

# Title: International Journal of Colorectal Disease

Full Journal Title: [International Journal of Colorectal Disease](http://www.springerlink.com/content/100430/?p=a67b994874d9479c8e3307b29d3cb98a&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tian, Y., Li, Y., Hu, Z.H., Wang, D.Q., Sun, X.Y. and Ren, C.S. (2010), Differential effects of NOD2 polymorphisms on colorectal cancer risk: A meta-analysis. *International Journal of Colorectal Disease*, **25** (2), 161-168.

Full Text: [2010\Int J Col Dis25, 161.pdf](2010/Int%20J%20Col%20Dis25,%20161.pdf)

Abstract: Since Kurzawski et al. described an association between the 3020insC NOD2 single nucleotide polymorphism and the risk of colorectal cancer(CRC) in 2004, reports published in the past several years have controversial results regarding the relationship between the development of CRC and NOD2 gene polymorphisms. To clarify the potential role of NOD2 P286S, R702W, G908R, and 3020insC polymorphisms in CRC patients, we have undertaken a systematic review and meta-analysis of published articles. Studies reporting on NOD2 polymorphisms and CRC were searched in the PubMed, EMBASE, and the Science Citation Index from the inception of each database to May, 2009. The search strategy included the keywords “CRC”, “colon cancer”, “rectal cancer”, “polymorphism”, and “NOD2/CARD15”. Eight eligible case-control studies about Caucasians from four countries contributed data on 5,888 subjects (cases: 3,524; controls: 2,364). Compared to the wild genotype, the R702W, G908R, and 3020insC polymorphisms were associated with an increased risk of CRC (odds ratio (OR): 1.59, 1.98, 1.44; 95% confidence interval (CI): 1.09-2.32, 1.14-3.44, 1.13-1.84; P = 0.02, 0.01, 0.003). However, P268S polymorphism did not influence CRC risk (OR: 1.27; CI: 0.32-5.00; P = 0.73). These findings indicate that NOD2 R702W, G908R, and 3020insC polymorphisms contribute to CRC susceptibility in Caucasians. Meta-analysis of these polymorphisms in NOD2 gene will help determine their role in CRC carcinogenesis.

Keywords: Breast-Cancer, Case-Control, Cell-Growth, Cigarette-Smoking, Citation, Colorectal Cancer, Crohns-Disease, Genetic Association, Genome-Wide Association, Inflammatory-Bowel-Disease, Meta-Analysis, NF-Kappa-B, NOD2, Card15, Polymorphism, Population, Science Citation Index, Susceptibility Locus, Systematic Review

# Title: International Journal of Computers Communications & Control

Full Journal Title: International Journal of Computers Communications & Control

ISO Abbreviated Title:

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Subject Categories:

: Impact Factor

? Hasanagas, N.D., Styliadis, A.D. and Papadopoulou, E.I. (2010), Environmental policy and science management: Using a scientometric-specific GIS for E-learning purposes. *International Journal of Computers Communications & Control*, **5** (2), 171-178.

Full Text: [2010\Int J Com Com Con5, 171.pdf](2010/Int%20J%20Com%20Com%20Con5,%20171.pdf)

Abstract: Who is the “good scientist” in rural-environmental policy? This is not so self-evident as in the case of private high-tech industry. Developing e-learning system in environmental science management is a challenging task in the area of forest and general rural development policy. Who determines the most “important” scientific information and who controls it? There are algorithms for measuring centrality in information networks. The concepts of closeness and betweenness centrality are used as basic metadata for categorizing the communication type in the rural-environmental policy networks. This paper discusses the development of a GIS-based model which includes region-based scientometrics, regarding policy field communication.

Keywords: Region-Based Scientometrics, GIS E-Learning, Forest Policy, Integrated Rural Development Policy, Environmental Policy, Complete Network Analysis, Policy Making

? Andonie, R. and Dzitac, I. (2010), How to write a good paper in computer science and how will it be measured by ISI Web of Knowledge? *International Journal of Computers Communications & Control*, **5** (4), 432-446.

Full Text: [2010\Int J Com Com Con5, 432.pdf](2010/Int%20J%20Com%20Com%20Con5,%20432.pdf)

Abstract: The academic world has come to place enormous weight on bibliometric measures to assess the value of scientific publications. Our paper has two major goals. First, we discuss the limits of numerical assessment tools as applied to computer science publications. Second, we give guidelines on how to write a good paper, where to submit the manuscript, and how to deal with the reviewing process. We report our experience as editors of International Journal of Computers Communications & Control (IJCCC). We analyze two important aspects of publishing: plagiarism and peer reviewing. As an example, we discuss the promotion assessment criteria used in the Romanian academic system. We express openly our concerns about how our work is evaluated, especially by the existent bibliometric products. Our conclusion is that we should combine bibliometric measures with human interpretation.

Keywords: Scientific Publication, Publication Assessment, Plagiarism, Reviewing, Bibliometric Indices, Impact

# Title: International Journal of Consumer Studies

Full Journal Title: International Journal of Consumer Studies

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Casimir, G.J. and Tobi, H. (2011), Defining and using the concept of household: A systematic review. *International Journal of Consumer Studies*, **35** (5), 498-506.

Abstract: Consumption and/or domestic activities in the private domain are much studied subjects. In the field of home economics and related fields of study, the household is the main unit of analysis. This paper focuses on how the household is conceptualized in literature during 2000-2010. The paper contains two lines of investigation. The first questions whether and in which way the household is defined in a selection of peer-reviewed articles of which the concept is part of the title. The second is about the multifaceted nature of the concept and elicits the facets that feature in the articles. A systematic review was performed using the bibliographic database Web of Science, as it covers different branches of science, including, but not limited to, home economics, developmental sociology, environmental sciences and transportation. The search was formulated by means of a Boolean expression. Articles were included when they were written in English, published between 2000 and 2010, and contained Househ\* in title and Theor\* in the topic, and either member\* or product\* or care or livelihood in the topic. Abstracts and full papers were assigned to Atlas.ti, a program for computer-assisted qualitative data analysis. Bottom-up and top-down coding procedures were used for a domain analysis and a quantitative content analysis. The results show that very few (less than 10%) of the papers give a definition of the concept ‘household’. Instead, some papers give a study description based on so-called household characteristics, thereby implicitly indicating dimensions of the concept. In the Results sections, some of the characteristics used for inclusion or exclusion of study participants are mentioned, but also other characteristics. It is concluded that descriptions of households do contain commonly used facets that together construct the concept of household as a group of people sharing resources, expenditures and activities.

Keywords: Activities, Analysis, Articles, Atlas.Ti, Bibliographic, Bibliographic Database, Care, Coding, Computer-Assisted, Consumption, Content Analysis, Domain Analysis, Economics, Environmental, Environmental Sciences, Family, Forest Products, Framework, Health, Household, Income, Literature, Papers, Qualitative Research, Quantitative, Review, Rural Households, Science, Sciences, Sociology, Systematic, Systematic Review, Theories, Time Allocation, Web of Science, Work

# Title: International Journal of Dermatology

Full Journal Title: [International Journal of Dermatology](http://www.blackwell-synergy.com/servlet/useragent?func=synergy&synergyAction=showFullText&doi=10.1046/j.1365-4362.2003.01578.x&area=production&prevSearch=%2Ballfield%3Abibliometric)

ISO Abbreviated Title: Int. J. Dermatol.

JCR Abbreviated Title: Int J Dermatol

ISSN: 0011-9059

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Journal Country/Territory: United States

Language: English

Publisher: Blackwell Science Ltd

Publisher Address: P O Box 88, Osney Mead, Oxford OX2 0NE, Oxon, England

Subject Categories:

Dermatology & Venereal Diseases: Impact Factor 0.869, / (2001)

? Schwartz, R.A. (1997), Arsenic and the skin. *International Journal of Dermatology*, **36** (4), 241-250.

Full Text: [1997\Int J Der386, 241.pdf](1997/Int%20J%20Der386,%20241.pdf)

Keywords: Drinking-Water, Follow-Up, Copper Smelter, Bowens-Disease, Exposure, Cancer, Angiosarcoma, Lesions, Taiwan, Hair

Lee, S.Y. and Lee, J.S. (1999), A survey of reference accuracy in two Asian dermatologic journals (the *Journal of Dermatology* and the *Korean Journal of Dermatology*). *International Journal of Dermatology*, **38** (5), 357-360.

Full Text: [1999\Int J Der38, 357.pdf](1999/Int%20J%20Der38,%20357.pdf)

Abstract: Background The reference list is an important part of a scientific article. To be useful, it must be accurate. Methods To evaluate the reference accuracy in the Journal of Dermatology and the Korean Journal of Dermatology, we randomly selected 100 references from each journal and checked them against the original articles. Results The overall rate of citation errors was 24% in the Journal of Dermatology and 33% in the Korean Journal of Dermatology. Errors in the title and author names were common, each occurring in about half of the citation errors. The overall rate of quotation errors was 14% in the Journal of Dermatology and 27% in the Korean Journal of Dermatology. Conclusions This study shows that the rate of citation errors is unacceptably high in the Journal of Dermatology and the Korean Journal of Dermatology, which significantly diminishes the value of the reference list. We would strongly urge that the peer review of citation and quotation accuracy should be strengthened.

Keywords: Accuracy, Asian, Citation, Citation Errors, Errors, Journal, Journals, Peer Review, Peer-Review, Quotation, Quotation Accuracy, Quotation Errors, Reference, Reference Accuracy, References, Review, Survey, Urge, Value

Enk, C.D. and Levy, L. (2003), Achievements of dermatological research in Denmark and Israel: A comparative 10-year study. *International Journal of Dermatology*, **42** (5), 398-401.

Full Text: [I\Int J Der42, 398.pdf](I/Int%20J%20Der42,%20398.pdf)

Abstract: Wide differences of achievement in dermatological research between Denmark and Israel have been reported, although the two countries are comparable in terms of academic dermatological structure. The aims of the present study were to document these differences by means of bibliometric analysis, and to attempt to elucidate the causes of these differences. Employing MEDLINE searches for the 10-year period 1988-97, quantitative and qualitative comparisons of the dermatological publications from these two countries were conducted. We found the achievements of Danish dermatological research to be superior to those of Israel, and suggest that the large proportion of case reports and reviews is one cause of the relatively low ranking of Israeli dermatological research efforts.

Keywords: Journals, Impact, Citation

? Jemec, G.B.E. and Nybaek, H. (2006), A bibliometric study of dermatology in central Europe 1991-2002. *International Journal of Dermatology*, **45** (8), 922-926.

Full Text: [2006\Int J Der45, 922.pdf](2006/Int%20J%20Der45,%20922.pdf)

Abstract: Background Bibliometric studies have gained interest in recent years, although most analyses are limited to simple use of average citations rates for journals, also known as the “impact factor”. Central Europe has a long tradition of dermatological research which has been negatively impacted by general political developments for a long period. This study was undertaken in order to describe the progress made in recent years. Methods The study was conducted in two parts: First the annualised national output for the period 1991-2002 was identified for each country by MEDLINE(R) searches. In the second part of the study a sample was drawn from the papers identified in the first part and the number of citations for each paper noted. Results The annualised national output showed great variation between countries and from year to year. The mean citation rates were found to vary between 0-5 citations/year, and some underlying publications were 10 years old. Countries with national indexed journals appear to hold a bibliometric advantage over countries without indexed journals. Conclusions Throughout the last decade of the 20th century the number of publications has grown with an average of 21.7% per year, and publication rates have only suffered in countries directly involved in war or similar disturbances. The mean citation rates were low, with a varying age of the underlying publications. Some cited publications were however old suggesting a persistent relevance. A national or regional indexed journal appears to confer a bibliometric advantage.

Keywords: “Impact Factor”, Age, Bibliometric, Bibliometric Study, Citations, Europe, General, Low, Made, Output, Paper, Persistent, Publication, Publications, Recent, Regional, Research, War

? Firoozabadi, M.R., Firooz, A., Gorouhi, F. and Dowlati, Y. (2007), Iran’s contribution to the dermatology literature. *International Journal of Dermatology*, **46** (6), 659-660.

Full Text: [2007\Int J Der46, 659.pdf](2007/Int%20J%20Der46,%20659.pdf)

Keywords: Literature

? Tuon, F.F., Amato, V.S., Graf, M.E., Siqueira, A.M., Nicodemo, A.C. and Neto, V.A. (2008), Treatment of new world cutaneous leishmaniasis: A systematic review with a meta-analysis. *International Journal of Dermatology*, **47** (2), 109-124.

Full Text: 2008\Int J Der47, 109.pdf

Abstract: Background New World leishmaniasis is an important endemic disease and public health problem in developing countries. The increase in ecologic tourism has extended this problem to developed countries. Few drugs have emerged over the past 50 years, and drug resistance has increased, such that the cure rate is no better than 80% in large studies. Despite these data, there has been no systematic review with a meta-analysis of the therapy used in this important tropical disease. The aim of this study was to determine the best drug management in the treatment of cutaneous leishmaniasis (CL) in Latin America based on the best studies published in the medical literature. Methods MEDLINE, LILACS, EMBASE, Web of Science, and Cochrane Library databases were searched to identify articles related to CL and therapy. Articles with adequate data on cure and treatment failure, internal and external validity information, and more than four patients in each treatment arm were included. Results Fifty-four articles met our inclusion criteria and 12 were included in the meta-analysis. Pentavalent antimonials were the most studied drugs, with a total of 1150 patients, achieving a cure rate of 76.5%. The cure rate of pentamidine was similar to that of pentavalent antimonials. Other drugs showed variable results, and all demonstrated an inferior response. Conclusion Although pentavalent antimonials are the drugs of choice in the treatment of CL, pentamidine showed similar results. Nevertheless, several aspects, such as cost, adverse effects, local experience, and availability of drugs to treat CL, must be considered when determining the best management of this disease, especially in developing countries where resources are scarce.

Keywords: Adverse Effects, Amphotericin-B, Articles, Cochrane, Controlled Clinical-Trial, Databases, Developing Countries, Disease, Double-Blind, Drug, Drug Resistance, Embase, Information, Kinetoplast Dna Minicircles, Latin America, Literature, Management, Medical, Medline, Meglumine Antimoniate, Meta-Analysis, Methods, Mucocutaneous Leishmaniasis, Mucosal Leishmaniasis, Paromomycin Methylbenzethonium Chloride, Public Health, Resistance, Review, Science, Sodium Stibogluconate, Systematic, Systematic Review, Therapy, Topical Paromomycin, Treatment, Validity, Web of Science

? Gjersvik, P., Nylenna, M., Jemec, G.B.E. and Haraldstad, A.M. (2010), Dermatologic research in the Nordic countries 1989-2008: A bibliometric study. *International Journal of Dermatology*, **49** (11), 1276-1281.

Full Text: [2010\Int J Der49, 1276.pdf](2010/Int%20J%20Der49,%201276.pdf)

Abstract: Background Bibliometric methods, based on the count of articles published in scientific journals, are increasingly used to evaluate scientific productivity. Bibliometric studies may identify factors that promote or inhibit research performance. We set out to analyze dermatologic research activity in Sweden, Denmark, Finland, and Norway using bibliometric methods. Methods We performed repetitive searches on Medline, using the PubMed interface, for the period 1989-2008. Dermatologic articles were defined as all articles in dermatologic journals plus articles in nondermatologic journals in which the address of first author included an institution of dermatology. Articles were allocated to the country of first author’s address. Results The number of dermatologic articles from Sweden, Denmark, Finland, and Norway was 1896 (214 per million inhabitants), 1502 (281), 1017 (196), and 249 (55), respectively. Dermatologic articles represented 1.4%, 2.3%, 1.6%, and 0.6% of each country’s total number of Medline articles in English over the same period. Similar patterns were found in relation to gross domestic product, number of dermatologists, and number of medical schools. After 2000, the yearly number of dermatologic articles from Denmark increased and that from Finland decreased, whereas the numbers from Sweden and Norway remained relatively stable. Conclusions Despite similarities in social and economic conditions in Sweden, Denmark, Finland, and Norway, there are great differences in dermatologic research activity in the four countries, with Denmark performing best and Norway poorest. Historical and cultural factors may partly explain these differences.

Keywords: Author, Bibliometric, Europe, Journals, Pubmed, Research

# Title: International Journal of Drug Policy

Full Journal Title: International Journal of Drug Policy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Decorte, T. (2010), The case for small-scale domestic cannabis cultivation. *International Journal of Drug Policy*, **21** (4), 271-275.

Abstract: The shift to (inter)regional production, trade and domestic cultivation has become an irreversible international trend. Until now, the focus of most empirical work has been on large-scale, commercially oriented and professionally organized segments of the cannabis industry, often based on police data and on the perspective of law enforcement agencies. This paper offers a review of recent Dutch-language research that focuses on cannabis cultivation. Empirical studies were identified through literature searches using relevant search terms and Web of Science, Elin, Social Science Research Network and Elsevier ScienceDirect. The paper presents the main findings of Dutch and Belgian empirical work on the factors that stimulated the import substitution process on the cannabis market, aspects related to quality and potency issues, typologies of cannabis growers, and (unintended) effects of pursued policies. In the light of this (selective) review the author offers some commentary and analysis concerning the claims made by different stakeholders, and concludes with some reflections on future research and on policy implications. The author outlines the importance of small-scale, independent or ideologically oriented cannabis cultivation as an underresearched market segment. The author also makes a case for greater toleration of small-scale cannabis cultivation, to secure the least worst of cannabis markets. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Amateur, Analysis, Author, Cannabis, Commentary, Cultivation, Drug Markets, Industry, Law Reform, Literature, Marijuana Cultivation, New-Zealand, Policies, Policy, Research, Review, Science, Supply Reduction, Trend, Web of Science, Western-Australia

? De Maeyer, J., Vanderplasschen, W. and Broekaert, E. (2010), Quality of life among opiate-dependent individuals: A review of the literature. *International Journal of Drug Policy*, **21** (5), 364-380.

Abstract: Quality of life (QoL) has become an important outcome indicator in health care evaluation. A clear distinction has to be made between QoL - focussing on individuals’ subjective satisfaction with life as a whole and different life domains - and health-related QoL (HRQoL), which refers to the absence of pathology. As opiate dependence is the primary drug of most persons entering treatment and as the attention for QoL in addiction research is growing, this review of the literature intends to summarise and differentiate the available information on QoL in opiate-dependent individuals. A comprehensive literature review was conducted, including database searches in Web of Science, PUBMED and Cochrane Database of Systematic Reviews. Articles were eligible for review if they assessed QoL or HRQoL of opiate-dependent individuals, used a QoL or HRQoL instrument and reported at least one specific outcome on QoL or HRQol.. In total, 38 articles have been selected. The review showed that various instruments (n = 15) were used to measure QoL, mostly HRQoL instruments. Opiate-dependent individuals report low (HR)QoL compared with the general population and people with various medical illnesses. Generally, participation in substitution treatment had a positive effect on individuals’ (HR)QoL, but long-term effects remain unclear. Psychological problems, older age and excessive alcohol use seem to be related with lower (HR)QoL scores. The assessment of QoL in research on opiate dependence is still in its infancy. Still, the chronic nature of drug use problems creates the necessity to look at outcomes beyond the direct consequences of drug dependence and based on clients’ needs. HRQoL, with its unilateral focus on the functional status of clients, does not give information on clients’ own experiences about the goodness of life, and is as a consequence unsuitable for measuring QoL.. Future research starting from a subjective, multidimensional approach of the concept of QoL is required. (c) 2010 Elsevier B.V. All rights reserved.

Keywords: Addiction, Alcohol, Articles, Assessment, Attention, Clinical-Practice, Cochrane, Drug, Drug Use, Evaluation, Form Health Survey, Functional, Health Care, Health-Related Quality of Life, Heroin, Heroin-Addicts, Information, Injection-Drug User, Literature, Literature Review, Medical, Methadone-Maintenance Treatment, Opiate Dependence, Opioid Dependence, Outcome, Outcomes, Pathology, Patient-Reported Outcomes, Personality-Disorders, Primary, Psychological, Quality, Quality of Life, Research, Review, Science, Sublingual Buprenorphine, Substance Use Disorders, Substitution Treatment, Systematic, Treatment, Web of Science

? Werb, D., Rowell, G., Guyatt, G., Kerr, T., Montaner, J. and Wood, E. (2011), Effect of drug law enforcement on drug market violence: A systematic review. *International Journal of Drug Policy*, **22** (2), 87-94.

Abstract: Violence is amongst the primary concerns of communities around the world and research has demonstrated links between violence and the illicit drug trade, particularly in urban settings. Given the growing emphasis on evidence-based policy-making, and the ongoing severe drug market violence in Mexico and other settings, we conducted a systematic review to examine the impacts of drug law enforcement on drug market violence. We conducted a systematic review using Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) guidelines. Specifically, we undertook a search of English language electronic databases (Academic Search Complete, PUBMED, PsycINFO, EMBASE, Web of Science, Sociological Abstracts, Social Service Abstracts, PAIS International and Lexis-Nexis), the Internet (Google, Google Scholar), and article reference lists, from database inception to January 24, 2011. Overall, 15 studies were identified that evaluated the impact of drug law enforcement on drug market violence, including 11 (73%) longitudinal analyses using linear regression, 2 (13%) mathematical drug market models, and 2 (13%) qualitative studies. Fourteen (93%) studies reported an adverse impact of drug law enforcement on levels of violence. Ten of the 11(91%) studies employing longitudinal qualitative analyses found a significant association between drug law enforcement and drug market violence. Our findings suggest that increasing drug law enforcement is unlikely to reduce drug market violence. Instead, the existing evidence base suggests that gun violence and high homicide rates may be an inevitable consequence of drug prohibition and that disrupting drug markets can paradoxically increase violence. In this context, and since drug prohibition has not meaningfully reduced drug supply, alternative regulatory models will be required if drug supply and drug market violence are to be meaningfully reduced. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Crime, Databases, Drug, Drug Dealing, Drug Enforcement, Embase, Gangs, Google Scholar, Guidelines, Guns, Health, Impact, Internet, Items, Mexico, Policy Making, Primary, Pubmed, Research, Review, Science, Systematic, Systematic Review, Urban, Violence, Web of Science, Youth

# Title: International Journal of the Economics of Business

Full Journal Title: International Journal of the Economics of Business

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Michie, J. (1998), Introduction. The internationalisation of the innovation process. *International Journal of the Economics of Business*, **5** (3), 261-277.

Full Text: Int J Eco Bus5, 261

Abstract: The international economics of business and management has focused - both in the academic literature and in corporate and public policy discussions - increasingly on issues of globalisation, innovation and ‘competitiveness’. These issues, and in particular their interrelation, are analysed in detail in this Special Issue of the International Journal of the Economics of Business. This opening article aims to set the scene by considering how the rather distinct literatures around the above three topics can best be drawn upon in order to focus on what implications the new global economic environment has for the economics of business and public policy.

Keywords: Globalisation Innovation R&D Technology Policy Systems Competitiveness

? Evangelista, R., Sandven, T., Sirilli, G. and Smith, K. (1998), Measuring innovation in european industry. *International Journal of the Economics of Business*, **5** (3), 311-333.

Full Text: Int J Eco Bus5, 311

Abstract: This paper analyses the results of the 1993 Community Innovation Survey (CIS). Fifty per cent of European firms introduced a product or process innovation during 1990-92. The share of innovating firms varies between industrial sectors and firm size. The percentage of innovating firms is higher for large firms than for smaller ones. In high-tech sectors this share is two thirds and for traditional ones is one third. The largest part of firms’ expenditure for innovation is linked to the adoption and diffusion of technologies through machinery and equipment, which absorbs 50% of firms’ innovation expenditure. R&D activities represent, on average, 20% of total innovation expenditure while other innovative activities, such as design and trial production, account respectively for 10% and 11%. The mix of innovation inputs, especially R&D and investment, is strongly correlated with firm size, displays little change across countries and varies greatly across industries.

Keywords: Technological Change Innovation R&D

# Title: International Journal of Electrochemical Science

Full Journal Title: [International Journal of Electrochemical Science](http://www.electrochemsci.org/archive.htm)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lufrano, F. and Staiti, P. (2009), A bibliometric analysis of the international literature in supercapacitors. *International Journal of Electrochemical Science*, **4** (2), 173-186.

Full Text: [2009\Int J Ele Sci4, 173.pdf](2009/Int%20J%20Ele%20Sci4,%20173.pdf)

Abstract: This study is a bibliometric analysis of worldwide scientific literature on research activity in the field of supercapacitors. To analyze the quality, quantity and influence of published scientific papers in this field, we have performed a search in the Scopus database and have analysed the relevant records. We then proceeded with rankings of authors and countries on the basis of different indicators: number of papers, citations, Hirsh index, and citations per paper. The analysis of aggregate records shows that the number of publications has increased remarkably since 2004. This is because in the last few years, there has been a rapid growth in publications coming from China and other Asian countries (Korea, Taiwan and India). China was found to be the leading country with 459 published papers and five authors on the list of the 30 most prolific scientists per number of publications. However, the Western countries also such as the United States, Canada and Europe, along with France, Poland, Italy and Germany have showed a high level of productivity on the basis of other metric indicators. The bibliometric analysis of data shows that the United States is the leading country after which Japan, France, Canada and Poland follow. Other countries such as Korea, Taiwan, India and Italy also have excellent results and appear often in the “top ten” countries or high ranking authors.

Keywords: Activity, Analysis, Asian, Authors, Bibliometric, Bibliometric Analysis, Canada, China, Citation Analysis, Citations, Country, Data, Database, Double Layer Capacitor, Electrochemical Capacitors, Europe, Field, France, Germany, Growth, Hirsch-Index, Index, India, Indicators, Influence, Italy, Japan, Korea, Literature, Number of Publications, Papers, Poland, Productivity, Publications, Quality, Ranking, Rankings, Rapid, Records, Research, Scientific Literature, Scopus, Search, Supercapacitor, Taiwan, United States

# Title: International Journal of Energy Research

Full Journal Title: [International Journal of Energy Research](http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=3343)

ISO Abbreviated Title: Int. J. Energy Res.

JCR Abbreviated Title: Int J Energ Res

ISSN: 0363-907X

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Journal Country/Territory: England

Language: English

Publisher: John Wiley & Sons Ltd

Publisher Address: Baffins Lane Chichester, W Sussex PO19 1UD, England

Subject Categories:

Energy & Fuels: Impact Factor

Nuclear Science & Technology: Impact Factor

? Saxena, S.C., Thomas, L.A. (1995), An equilibrium-model for predicting flue-gas composition of an incinerator. *International Journal of Energy Research*, **19** (4), 317-327.

Abstract: The composition of an incinerator flue gas depends characteristically on the operating parameters such as combustion temperature, fractional excess air value, and moisture content of the waste material. An a priori knowledge of the influence of these parameters on the flue-gas composition helps to carry out the combustion process efficiently by appropriately selecting their values. A simple chemical equilibrium model is proposed to predict the flue-gas composition from an incinerator at different operating temperatures, excess air values, and moisture contents of the combusting material. The predicitions are supposed to establish the upper limit of the chemical species concentrations in the flue gas and hence the model is considered as an appropriate one for selecting the pollution control equipment and in estimating the upper limit of environmental contamination.

The model-based computations predict that at a given temperature and moisture content, the increase in excess air decreases the concentrations of carbon monoxide, carbon dioxide, water, and hydrogen in the flue gas while it increases that of oxygen. Similarly, the proportion of nitrogen dioxide, nitrogen, sulfur dioxide and sulfur trioxide decreases while that of nitric oxide increases. At a given excess air and moisture content, the increase in temperature decreases the concentrations of carbon monoxide and hydrogen and increases of carbon dioxide and water due to better combustion. Similarly, the increase in temperature also augments the concentrations of nitric oxide, nitrogen dioxide and sulfur dioxide while it decreases that of nitrogen and sulfur trioxide. Similar trends are observed at different levels of moisture content.

Keywords: Incinerator, Flue Gas, Mathematical Model

? Alappat, B.J. and Rane, V.C. (1995), An algorithm to calculate the performance details of an RCFB incinerator with heat-recovery for the treatment of distillery spent wash. *International Journal of Energy Research*, **19** (4), 329-336.

Abstract: Incineration has become an acceptable and economically justifiable method of waste treatment. In the incineration of distillery spent wash, evaporation of the raw dilute waste to higher concentration to make it autogenous is the most difficult and costly part. A recirculating fluidized-bed incineration system is suggested in this regard which is expected to reduce the load on the external evaporators considerably. An algorithm, based on iteration is presented to calculate the performance details of the proposed incineration system.

Keywords: Incineration, Recirculating Fluidized-Bed, Distillery Wastes, Energy Recovery

? Alappat, B.J. and Rane, V.C. (1996), Studies on a recirculating fluidized-bed incinerator cold model. *International Journal of Energy Research*, **20** (4), 313-326.

Abstract: Cold model studies are widely carried out to predict, analyse and improve performance details and operating conditions of the actual unit and to train operators. Cold model experiments carried out to visualize and investigate the operation of recirculating fluidized-bed incinerator are reported. Some of the details of operation which are difficult to measure on an actual unit, such as solid circulation rate, particle velocity, residence time, voidage etc., are measured on the cold model. Effects of various parameters such as jet diameter, clearance between perforated plate and draft tube bottom, draft tube superficial air velocity and solid inventory on these details are discussed. The combinations of various parameters which give higher kinetic energy transfer from gas to solids per unit pressure drop across the draft tube are identified.

Keywords: Incineration, Fluidized Bed, Recirculating Fluidized Bed, Cold Model

Han, J.H., Jeong, K., Choi, J.H. and Choi, S. (1997), A hot-flow model analysis of the MSW incinerator. *International Journal of Energy Research*, **21** (10), 899-910.

Full Text: [I\Int J Ene Res21, 899.pdf](I/Int%20J%20Ene%20Res21,%20899.pdf)

Abstract: A hot-flow model incinerator was constructed to simulate the combustion chamber of mass-burn municipal solid waste (MSW) incinerator. Experiments using the reduced scale simplified model were designed to reproduce the physical processes. The Current study focuses on the gas phase mixing and the subsequent oxidative destruction of incomplete combustion products. Excessive carbon monoxide is generated by operating the gas burner under fuel-rich conditions, and is supplied into the furnace chamber as a hot gas stream, where fresh air is provided by the secondary air injection. Mixing is quantified by measuring the local gas concentrations (CO and O2) and temperatures since the destruction rate of CO is controlled by oxygen availability and chemical kinetic rates. The degree of mixing is monitored while the design alternatives of the secondary air injection pattern are systematically adjusted. This effect of the secondary air injection schemes on the degree of mixing are observed, and the measurements of temperature fluctuation with fine-wire thermocouples are performed for the quantitative evaluation of mixing. The results agree well with the plausible scenario of mixing and provide a better understanding of the mixing process. The hot dow accompanying chemical reactions in the model incinerator is also analysed numerically using the computational fluid dynamics codes to bolster the understanding of the experimental results. The modelling results compare reasonably well with experimental data. This comparison helps to cross-check the results. (C) 1997 by John Wiley & Sons, Ltd.

Keywords: Incinerator, Hot-How Model, Pollutants Destruction, Mixing, Temperature Fluctuation, Fluctuating Temperature

Yang, W., Shin, D. and Choi, S. (1998), A process simulation model for a 2 ton h-1 incinerator (a combined bed combustion and furnace heat transfer model). *International Journal of Energy Research*, **22** (11), 943-951.

Full Text: [I\Int J Ene Res22, 943.pdf](I/Int%20J%20Ene%20Res22,%20943.pdf)

Abstract: A process simulation model was constructed for a 2 ton h-1 incinerator. The simulation model was designed to provide system performance parameters according to various operating conditions. In accommodating the wide variation of quality and composition of input wastes, the plant operating parameters such as amount of excess air, preheated air temperature, waste feed rate and primary air distribution over the stoker, etc, must be carefully controlled. The proposed model calculates operating variables of each submodule, by employing steady-state thermal and material balance equations. Combustion of waste bed, and its radiative heat transfer in the combusion chamber are considered. The calculated results of the combustion chamber performance are evaluated, in terms of temperature, locations and width of the flame band, and mean residence time in the secondary combustion chamber. These results are compared with a limited set of field test measurements for verification of the model. (C) 1998 John Wiley & Sons, Ltd.

Keywords: Incinerator, Process Simulation, Operating Parameters, Waste Bed

# Title: International Journal of Engineering Education

Full Journal Title: [International Journal of Engineering Education](http://www.ijee.ie/)

ISO Abbreviated Title:

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Subject Categories:

: Impact Factor

? Jesiek, B.K., Borrego, M., Beddoes, K., Hurtado, M., Rajendran, P. and Sangam, D. (2011), Mapping global trends in engineering education research, 2005-2008. *International Journal of Engineering Education*, **27** (1), 77-90.

Full Text: [2011\Int J Eng Edu27, 77.pdf](2011/Int%20J%20Eng%20Edu27,%2077.pdf)

Abstract: Engineering education research in many countries and regions is gaining momentum and coherence as a field of academic activity. Yet what quantity and kinds of research are currently being done, both worldwide and in specific nations and regions? Additionally, what collaborative patterns are now evident in the field, including in terms of the size and multi-national composition of research teams? To address these research questions, we first review previous attempts to quantify and characterize research on engineering education and related fields. We then use theoretical and methodological insights from social studies of science, bibliometrics, and scientometrics to perform quantitative and qualitative analysis of 2,173 journal articles and conference papers published 2005 to 2008. Our findings are presented in five main parts. First, we describe how basic criteria were used to identify 885 empirical research papers and track changes in the orientation of the major publication outlets in the field. Second, analysis of author affiliation information allows us to report on publication activity by country and region. Third, we discuss evidence of collaborative patterns, including co-authorship trends and prevalence of multinational research teams. Fourth, we examine keywords in article metadata to report on the prevalence of 38 categories representing different research topics and contexts. Fifth and finally, we examine co-occurrence of articles by category. The paper concludes with recommendations for building global capacity in engineering education research, including suggestions for expanding cross-national collaboration in targeted research areas and improving access to the field’s literature.

Keywords: Access, Affiliation, Analysis, Bibliometrics, Building, Capacity, Changes, Co-Authorship, Coauthorship, Collaboration, Collaborative Research, Community, Composition, Country, Criteria, Discipline, Education, Empirical Research, Engineering, Engineering Education, Engineering Education Research, Evidence, Field, First, Global, Information, International, Journal, Journal Articles, Literature, Mapping, Nations, Ontology, Papers, Part I, Prevalence, Publication, Publication Activity, Qualitative, Qualitative Analysis, Recommendations, Region, Research, Review, Science, Scientometrics, SI, Size, Social, Special-Issue, Trends

# Title: International Journal of Environment and Pollution

Full Journal Title: [International Journal of Environment and Pollution](http://www.inderscience.com/)

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Environmental Sciences: Impact Factor 0.213, 116/126 (1999); Impact Factor 0.176, 117/127 (2000); Impact Factor 0.314, 112/129 (2001); Impact Factor 0.356, 119/132 (2002); Impact Factor 0.116, 131/131 (2003); Impact Factor 0.156, 132/134 (2004); Impact Factor 0.327, 138/140 (2005); Impact Factor 0.404, 133/144 (2006); Impact Factor 0.435, 147/160 (2007); Impact Factor 0.624, 161/181 (2009); Impact Factor 0.626, 174/193 (2010)

? Philip, L., Iyengar, L. and Venkobachar, C. (1995), Biosorption of copper(II) by pseudomonas-aeruginosa. *International Journal of Environment and Pollution*, **5** (1), 92-99.

Abstract: The mechanism of accumulation of copper(II) by Pseudomonas aeruginosa was investigated. Uptake consisted of a rapid process (likely to be extracellular binding) followed by a slow phase (possibly cellular uptake). The sorption capacity of the microbe was found to be 50 mg/g, and sorption followed the Langmuir isotherm. The presence of mild mineral acids (0.1 N HCl) led to destructive desorption of 95% of sorbed metal, whereas citrate buffer (pH 4) desorbed 80% of the accumulated metal ions non-destructively. Spectroscopic and microscopic studies indicated the accumulation of metal inside the cell, though the maximum uptake was by the cell wall.

Keywords: Biosorption, Citrate Buffer, Copper, EDAX, Electron Microscope, Pseudomonas Aeruginosa, Cadmium

? Baldasano, J.M. and Cremades, L. (1995), Atmospheric impact of a municipal wastes incinerator. *International Journal of Environment and Pollution*, **5** (4-6), 538-547.

Abstract: This paper presents a case study of an air pollution dispersion model for the atmospheric impact assessment of a new municipal wastes incinerator (MWI). The capacity of the present MWI will increase more than ten times, and a new high-efficiency flue gas treatment system is projected.

The environmental impact study has been focused on the long-term aspect of the air pollution (chronic pollution) from the new facility. Hence the model used is a dispersion climatological model included in the EMITEMA-AIR system. This model is based on statistical processing of meteorological data and deterministic approach of dispersion process. Besides, it allows to take into account the orography of the study area.

Particles and gases, such as HCl for instance, are the pollutants considered in this study, as representative air pollutants emitted by a MWI. The dispersion study of pollutants from a climatological point of view led to conclusions about the atmospheric impact of the future MWI.

Keywords: Atmospheric Impact, Climatological Model, Incinerator, Municipal Wastes

Yedla, S. and Dikshit, A.K. (2001), Removal mechanism of endosulfan sorption onto wood charcoal. *International Journal of Environment and Pollution*, **15** (5), 528-542.

Full Text: [I\Int J Env Pol15, 528.pdf](I/Int%20J%20Env%20Pol15,%20528.pdf)

Abstract: Endosulfan is among the most widely used pesticides in developing countries and other parts of the world and has been found to contaminate various parts of the environment, including drinking water sources. In an earlier study to find a suitable adsorbent to remove endosulfan, wood charcoal was found to give promising results. In the present study, the process controlling the rate of endosulfan sorption onto wood charcoal and the mechanism of removal were examined using various methodologies. Both film and pore diffusion coefficients were determined, and the linearity of the rate constants of adsorption with initial endosulfan concentrations revealed the process to be controlled by film diffusion. This was supported by the linear fit of the rate constants with the inverse of the diameter of adsorbent particles and the change in adsorption rates with agitation speed. Multiple interruption tests also revealed that endosulfan sorption onto wood charcoal is controlled by film diffusion.

The increase in reaction rate constant with temperature and isosteric heat of adsorption in the range of -2.655 to 5.185 kcal/mol implied that the endosulfan removal process was endothermic in nature. The activation energy of 2.33 kcal/mol, which was less than 12 kcal/mol, revealed that the removal mechanism could be attributed to physisorption with a major contribution of van der Waals and electrostatic forces.

Keywords: Activation Energy, Adsorption, Endosulfan, Film Diffusion, Isosteric Heat, Physisorption, Pore Diffusion, Rate-Limiting Step, Activated Carbon, Adsorption, Kinetics, Water

Cengiz, P.A., Abbasian, J., Khalili, N.R., Slimane, R.B. and Ho, K.K. (2002), Development of durable and reactive regenerable sorbents for high temperature flue gas desulphurisation. *International Journal of Environment and Pollution*, **17** (1-2), 82-101.

Full Text: [I\Int J Env Pol17, 82.pdf](I/Int%20J%20Env%20Pol17,%2082.pdf)

Abstract: One of the emerging technologies for combined SO2 and NOx removal from flue gases is the copper oxide process. which is based on the use of a regenerable sorbent. Sorbent properties such as SO2 sorption capacity, reactivity, crush strength, and long-term durability have significant impact on the overall process, cost, In this study. a number of sorbents were prepared by using various modifications of the sol-gel technique. Compared to the commercially available sorbent used for evaluation of the process, sorbents prepared by wet impregnation of sol-gel alumina exhibited comparable sulphur capacity and about seven times higher crush strength, while those prepared by incorporation of copper in the sol resulted in three times higher sulphur capacity and 55% higher crush strength. Significant improvement in long-term durability also achieved with these sorbents. Preliminary economic evaluation indicates that these new sorbents have the potential to reduce the projected levelized process cost down to 3.17 mil/kWh, which is lower than the cost of current SO2 emission allowance.

Keywords: Flue Gas, SO2, Removal, Copper Oxide, Regenerable Sorbents, Sol-Gel, Desulphurisation, Zinc Titanate Sorbents, Desox Denox Reactions, Fluidized-Bed, Metal-Oxides, Cuo/Gamma-Al2O3 Sorbent, Elevated-Temperature, Simultaneous Removal, Sulfur-Dioxide, Gamma-Alumina, H2S Removal

Faghihian, H., Malekpour, A. and Maragheh, M.G. (2003), Adsorption of molybdate ion by natrolite and clinoptilolite-rich tuffs. *International Journal of Environment and Pollution*, **18** (2), 181-189.

Full Text: [I\Int J Env Pol18, 181.pdf](I/Int%20J%20Env%20Pol18,%20181.pdf)

Abstract: Natural clinoptilolite-rich tuffs and natrolite from Iranian deposits and their different ion-exchanged forms were used for the adsorption of Mo-99 as molybdate ion. The effect of pH, contact time, initial molybdate concentration, and some cationic and anionic interferences were also studied. To investigate the selectivity of zeolites and their exchanged forms, the isotherms of adsorption were constructed at room temperature. Desorption experiments were carried out to examine the ability of zeolite to retain adsorbed molybdate. It was concluded that molybdate could be considerably adsorbed by some of the exchanged forms of the zeolites (Ag+, Cd2+ and Pb2+ exchanged forms) whereas the uptake by the natural forms was negligible.

Keywords: Adsorption, Clinoptilolite, Molybdate, Natrolite, Zeolites, Sorption, Surfactant, Chromate, Zeolite, Cesium

Beyazit, N., Ergun, O.N. and Peker, I. (2003), Cu(II) removal from aqueous solution using Doğantepe (Amasya) zeolites. *International Journal of Environment and Pollution*, **19** (2), 150-159.

Full Text: [I\Int J Env Pol19, 150.pdf](I/Int%20J%20Env%20Pol19,%20150.pdf)

Abstract: This paper investigates the effects of zeolite particle size, zeolite/solution ratio and stirring time on the performance of zeolites from Dogantepe in removing Cu(II) from aqueous solution to establish optimum operating conditions. The results indicated that the size of the zeolite samples, the concentration of Cu(II) and the zeolite/solution ratio affected the removal efficiencies, whilst the stirring time was found to have no significant effect on the removal efficiencies. The equivalent numbers of sodium, magnesium, calcium and potassium ions passed into the Cu(II) solution were found to be 1.196, 0.208, 0.117 and 0.009 meq/l, respectively, and the passing percentages of these ions were calculated to be 11.27, 2.45, 1.57 and 0.37%, respectively. The removal mechanism of Cu(II) with zeolite samples was mainly ion exchange with a fraction of approximately 65%. The maximum exchange capacities obtained by using Dogantepe zeolites, Yavu zeolites, and synthetic resin were found to be 9.2, 7.0 and 72.7 mg/g, respectively. However, in relatively low concentrations of Cu(II), the differences in the removal efficiencies or exchange capacities obtained for above different three materials were significantly decreased.

Keywords: Aqueous Solution, Clinoptilolite, Cu(II), Mordenite, Removal, Zeolite, Ion-Exchange, Cadmium Removal, Heavy-Metals, Clinoptilolite, Lead

Beyazit, N., Peker, I. and Ergun, O.N. (2003), Removal of lead and zinc ions from aqueous solution using Amasya zeolites from Turkey. *International Journal of Environment and Pollution*, **19** (2), 160-170.

Full Text: [I\Int J Env Pol19, 160.pdf](I/Int%20J%20Env%20Pol19,%20160.pdf)

Abstract: This paper deals with the removal of Pb2+ and Zn2+ ions from aqueous solutions using zeolitic minerals containing 45 wt.% clinoptilolite and 35 wt.% mordenite. The effects of particle size, zeolite/solution ratio, stirring time, and metal ion concentration on Pb2+ and Zn2+ removal were examined. The study showed that at at low metal concentrations the zeolite samples exhibited optimum efficiency at metal concentration around 22 mg/l for both Pb2+ and Zn2+, and Pb2+ ions were much more preferred by zeolites. More than 98% of the removal was achieved in the first five minutes for Pb2+, whereas the Zn2+ removal efficiency was around 90% for the same time. Pb2+ and Zn2+ adsorption capacities related to Langmuir isotherms were found to be 34.48 and 19.49 mg/g, respectively. In summary, it can be concluded that metal ions such as Pb2+ and Zn2+ can be removed with approximately 100% efficiency from aqueous solutions and wastewater containing similar ions using Amasya zeolites.

Keywords: Amasya, Clinoptilolite, Mordenite, Pb2+, Removal, Zeolite, Zn2+, Clinoptilolite, Pretreatment, Exchange

Nagarnaik, P.B., Bhole, A.G. and Natarajan, G.S. (2003), Arsenic(III) removal by adsorption on sawdust carbon. *International Journal of Environment and Pollution*, **19** (2), 177-187.

Full Text: [I\Int J Env Pol19, 177.pdf](I/Int%20J%20Env%20Pol19,%20177.pdf)

Abstract: Studies on the removal of As(III) by adsorption on sawdust and sawdust carbon have been carried out at room temperature (25±1 degreesC). The adsorption isotherm of As(III) on sawdust carbon was obtained in a batch reactor. The process of uptake follows the first-order adsorption rate expression and obeys the Langmuir and Freundlich model of adsorption. The mass transfer coefficients as a function of initial sorbate concentration have been determined. Parameters such as pH and absorbent dose were studied. Maximum adsorption capacity was observed at pH 7.0

Keywords: Adsorption, Aqueous-Solution, As(III) Removal, Calamity, Districts, Groundwater, Health, India, Ions, Mass Transfer Coefficient, Sawdust, Sawdust Carbon, Water, West-Bengal, World

Das Purakayastha, P., Pal, A. and Bandyopadhyay, M. (2003), Sorption of anionic surfactants on a fixed bed of rubber granules. *International Journal of Environment and Pollution*, **19** (5), 421-429.

Full Text: [I\Int J Env Pol19, 421.pdf](I/Int%20J%20Env%20Pol19,%20421.pdf)

Abstract: The performance of a fixed-bed adsorber (FBR) column for the removal of anionic surfactants from aquatic environments has been studied. Waste tyre rubber granules were used as the adsorbent material, and sodium dodecyl sulfate, an anionic surfactant, as the adsorbate. The FBR column design parameters were evaluated using the column breakthrough data at different bed depths. The Bohert and Adams model was used with the bed depth-service time approach for the design of the column. The bed efficiency obtained was 90-97%.

Keywords: Adsorption, Anionic Surfactant, Column Study, Rubber Granules, Predictive Model, Design, Adsorption, Adsorbers, Systems

Oğuz, E. and Aydin, A.C. (2003), Prediction of adsorption rate of phosphate removal from wastewater with gas concrete. *International Journal of Environment and Pollution*, **19** (6), 603-614.

Full Text: [I\Int J Env Pol19, 603.pdf](I/Int%20J%20Env%20Pol19,%20603.pdf)

Abstract: Gas concrete, a conventional structural material, is used to remove phosphate from wastewater. A batch study of phosphate removal from wastewater with waste particles of gas concrete has been performed. The concentration-time graphs were plotted against pH, temperature, and agitation speed, and the reaction rate equation was adapted to adsorption. The differential method was used to define reaction rate. The adsorption rates, reaction rate constants, and reaction rates were determined by tangent lines of drawn curves at different concentrations, depending on pH, temperature, and agitation speed. The adsorption rate increased with pH and temperature. The maximum effect of agitation speed on the adsorption rate was observed at 150 rpm. The activation energy of reaction and the pre-exponential factor were calculated using the Arrhenius equilibrium equation. The zeta potentials of waste gas concrete were determined at various pH values. The surface area of gas concrete was obtained using BET apparatus as 22 m2/g. The composition of gas concrete was determined by X-ray diffractometry. The results indicate that gas concrete is an effective adsorbent to remove phosphate from wastewater.

Keywords: Adsorption Rate, Agitation Speed, Gas Concrete, Phosphate Removal, Wastewater, Variables, TNSAC

Aydin, A.H., Bulut, Y. and Yavuz, Ö. (2004), Acid dyes removal using low cost adsorbents. *International Journal of Environment and Pollution*, **21** (1), 97-104.

Full Text: [I\Int J Env Pol21, 97.pdf](I/Int%20J%20Env%20Pol21,%2097.pdf)

Abstract: Dyestuff production units and dyeing units have always had pressing need techniques that allow economical pre-treatment for colour in the effluent. The effectiveness of adsorption for dye removal from wastewaters has made it an ideal alternative to other expensive treatment options. Removal of acid green 25 and acid red 183 from aqueous solution by different adsorbent such as shells of almond and hazelnut, and poplar and walnut sawdust were investigated. Equilibrium isotherms have been determined and analysed using the Freundlich equations. Parameters of Freundlich isotherm have been determined using adsorption data. Capacities of adsorbent follow as walnut > poplar > almond > hazelnut for AG25 and almond > walnut > poplar > hazelnut for AR183, respectively.

Keywords: Adsorption, Shell of Hazelnut, Shell of Almond, Sawdust of Poplar, Removal, Dye Wastewater, Adsorption

Mazumder, D. and Dikshit, A.K. (2004), Hybrid reactor system for wastewater treatment: Application and approach of modelling. *International Journal of Environment and Pollution*, **21** (2), 105-131.

Full Text: [I\Int J Env Pol21, 105.pdf](I/Int%20J%20Env%20Pol21,%20105.pdf)

Abstract: Wastewater treatment by the hybrid reactor system has become wide-spread as it provides advantages of both the suspended and attached growth phase at the same time. It may be used to treat some rate-limiting Substrate, priority pollutants, volatile organic compounds etc. as well as for nitrification. This versatile nature of hybrid reactor demands for a detailed investigation on the mechanism, mode of operation, different applications and major coil figurations available. The present article is devoted to explore these issues with respect to previous background and Successive development in this area. Apart from the laboratory and pilot-scale study, some industrial applications have been overviewed to understand the performance of hybrid reactor in the concerned field. The approach of modelling for the hybrid reactor system is also demonstrated with the hypothetical data set. A comprehensive details about major hybrid processes is presented along with their schematic diagrams. The review on hybrid process revealed that it Would be economic for upgradation of existing activated sludge system, ensuring carbonaceous oxidation and nitrification in a single reactor and treatment of slowly bio-degradable substances also.

Keywords: Wastewater Treatment, Hybrid Reactor, Laboratory Scale Application, Industrial Application, Reactor Modelling, Designated Hybrid Processes, Activated-Sludge, Nutrient Removal, Biofilm Process, Thickness, Carbon

Mohan, S.V., Bhaskar, Y.V. and Karthikeyan, J. (2004), Biological decolourisation of simulated azo dye in aqueous phase by algae *Spirogyra* species. *International Journal of Environment and Pollution*, **21** (3), 211-222.

Full Text: [I\Int J Env Pol21, 211.pdf](I/Int%20J%20Env%20Pol21,%20211.pdf)

Abstract: Biological decolourisation of two azo dye effluents (direct and reactive dye) were investigated using a commonly available green algae Spirogyra sp. in viable form. Batch studies revealed the potential of algal species in removing the dye colour and dye removal was dependant oil initial algal inoculum, concentration and application class of the dye. Maximum dye uptake was noticed on the third day for both the dyes. Higher dye uptake was observed in the case of direct red 28 compared to reactive red 2. Dye colour removal by the algal species may be attributed to biosorption of the dye molecules onto the surface of algal cell and subsequent diffusion and participation in metabolism (bioconversion). The remaining dye molecules could be further removed from the aqueous phase by adsorption and/or chelation reaction of the exopolymers released by the algae (biocoagulation). The results of the present study reveal the potential nature of algae in treating azo dyes which in turn can be extended to oxidation pond system of wastewater treatment.

Keywords: Azo Dye, Biocoagulation, Biosorption, Biosorption, Color Removal, Degradation, Direct Dye, Effluents, Microalgae, Reactive Dye, Spirogyra Species, Wastewaters

? Faghihian, H. (2004), Removal of cyanide from liquid wastes by modified clinoptilolite. *International Journal of Environment and Pollution*, **22** (6), 732-739.

Full Text: [I\Int J Env Pol22, 732.pdf](I/Int%20J%20Env%20Pol22,%20732.pdf)

Abstract: This paper describes the preparation and evaluation of various cationic forms of clinoptilolite for removal of cyanide from aqueous solutions. The cobalt form of the zeolite showed the highest uptake of 1.95 meq of cyanide per gram of zeolite, whereas the uptake of natural forms is 0.070 meq g-1. The kinetics of cyanide desorption into solutions with different ionic strength were studied. Modified clinoptilolite is a good candidate for the removal and immobilisation of cyanide.

Keywords: Modified Clinoptilolite, Cyanide Removal, Liquid Wastes, Aqueous Solutions, Kinetics, Cyanide Desorption, Cyanide Immobilisation, Environmental Protection, Environmental Pollution

? Ume, J.I. and Mbah, G.O. (2005), Analysis of adsorption equilibrium for aqueous solution of weak organic electrolyte-activated carbon system. *International Journal of Environment and Pollution*, **23** (1), 112-491.

Full Text: [2005\Int J Env Pol23, 112.pdf](2005/Int%20J%20Env%20Pol23,%20112.pdf)

Abstract: Several models for the adsorption of weak organic electrolytes on activated carbons from dilute aqueous solutions have been reported recently. It is apparent, however, that the electrokinetics of carbon surface has not been sufficiently addressed by these studies. The present treatment therefore employed the fundamental concepts provided by these studies, in conjunction with electrokinetic measurements and mass titration, to predict experimentally observed adsorption data. Important and convenient parameters for characterisation of activated carbon surfaces were thus evaluated. The interplay between reduced potential, pH and adsorption capacity were examined for adsorption of weak acidic electrolytes on untreated, oxidised and nitrided activated carbons. The best-fit parameters for aqueous adsorption on the carbon samples were also acquired.

? Xie, W.M., Wang, Q.H., Ma, H.Z. and Ogawa, H.I. (2005), Phosphate removal from wastewater using aluminium oxide as adsorbent. *International Journal of Environment and Pollution*, **23** (4), 486-491.

Full Text: Int J Env Pol23, 486

Abstract: The development and manufacture of an adsorbent to remove phosphate for the prevention of eutrophication in lakes is very important. The use of aluminium oxide (alumina) as an organic adsorbent to remove phosphate from wastewater has been investigated. The characteristics of this absorption process were investigated to determine the important parameters, such as the pH and the aluminium ion concentration. Moreover, chemical treatment methods to enhance the adsorption capacity of alumina were tested. Dynamic studies and equilibrium adsorption isotherm studies were conducted to determine the adsorption capacity and efficiency. The experimental results indicate that it is necessary to increase the temperature above 500 degrees C in order to obtain a high-capacity adsorbent, and alumina treated with acid or calcium or magnesium has a larger adsorption capacity for phosphate than untreated adsorbent. Moreover, the adsorption of phosphate was enhanced at a lower pH and a higher aluminium ion concentration, and a simple Freundlich isotherm could express the equilibrium adsorption isotherm, and the intragranular diffusion controlling model was used to test the dynamic studies. These findings have important implications for the application and development of aluminium oxide as a prospective adsorbent.

Keywords: Aluminium Oxide, Adsorbent, Equilibrium Adsorption Isotherm, Phosphate, Wastewater

? Meshko, V., Markovska, L. and Marinkovski, M. (2005), Experimental study and modelling of zinc adsorption by granular activated carbon and natural zeolite. *International Journal of Environment and Pollution*, **27** (4), 285-299.

Full Text: [2006\Int J Env Pol27, 285.pdf](2006/Int%20J%20Env%20Pol27,%20285.pdf)

Abstract: The metal removal capability of Granular Activated Carbon (GAC) and natural zeolite is evaluated in this study using zinc as a model adsorbate. The equilibrium and kinetic characteristics of zinc adsorption on GAC and natural zeolite were studied in batch stirred tank experiments. The adsorption data for both systems were fitted by Langmuir, Freundlich, Langmuir-Freundlich, and Redlich-Peterson models. The parameters in the adsorption isotherms were estimated from the experimental equilibrium data using MATLAB. Using these data the best isotherm can be selected. The effect of initial concentration on the transient behaviour of zinc removal by GAC and natural zeolite was investigated. In this work two surface reaction models, namely a second order reversible reaction model and a second order irreversible reaction model for describing Zn(II) removal by GAC and natural zeolite, were employed. Modelling studies using two different second order surface reaction models demonstrated that it is very difficult to come to a general conclusion about which model has better ability.

Keywords: Zinc, Adsorption, Modelling, Granular Activated Carbon, Natural Zeolite, Equilibrium, Kinetics

? Swami, D. and Buddhi, D. (2006), Removal of contaminants from industrial wastewater through various non-conventional technologies: A review. *International Journal of Environment and Pollution*, **27** (4), 324-346.

Full Text: 2006\Int J Env Pol27, 324.pdf

Abstract: It is difficult to separate industrial growth from environmental pollution but it can be minimised through cost-effective approaches of pollution abatement. To reach the full objectives of zero pollution, adoption of alternative technologies which suit the situation of low capital availability, minimum man-power and limited energy consumption are necessary. Adsorption through agricultural products such as rice husk, sugarcane bagasse, soybean hulls, saw dust, coconut shell, groundnut shell, apple-waste, fly-ash etc., has been demonstrated to be a useful alternative to the conventional treatment systems for the removal of toxic metals such as dyes/ colour, chromium (Cr), mercury (Hg), copper (Cu), nickel (Ni), etc., from aqueous solution., It could be considered as an eco-friendly device to the existing relatively more expensive treatment technologies. Various biological species such as algae, fungi and bacteria were found to be in extensive use for the removal of contaminants. In this review, an extensive list of sorbents literature has been compiled to provide a summary of available information on a wide range of potentially low-cost non-conventional sorbents and their effectiveness.

Keywords: Adsorption, Adsorption, Algae, Bacteria, Biomass, Biosorption, Cadmium, Chromium, Copper, Effectiveness, Energy, Environmental, Fly Ash, Heavy Metals, Heavy-Metals, Industrial Wastewater, Information, Literature, Mercury, Removal, Review, Sugarcane, Sugarcane Bagasse, Textile Dye Effluent, Treatment, Wastewater, Zinc

? Bidisha, C., Sreeranjani, R., Shaik, A., Chaudhari, S. and Sumathi, S. (2005), Bioaccumulation and biosorption of drimarene red dye by *Aspergillus foetidus*. *International Journal of Environment and Pollution*, **28** (3-4), 517-533.

Full Text: Int J Env Pol28, 517

Abstract: An isolated fungus, Aspergillus foelidus, was found to uptake azo reactive dye(s) such as drimarene red under active growth and growth unsupportive conditions. Microscopy indicates preferential accumulation of drimarene red dye in the tips of fungal hyphae. The presence of 0.1% azide and phosphate in the fungal growth medium causes displacement of bound dye from the biomass. The key factors that influence the process of biosorption of dye in growth non-supportive medium are pH, temperature, and age and concentration of fungal biomass. Based on the Langmuir isotherm plots, the maximum fungal biosorption capacity (Q(o) value) was computed to be 344 mg g-1 using the fungal spent medium at pH 2.5 and 60 degrees C. Sodium hydroxide is an effective agent for the leaching of dye from the loaded fungal biomass. The results suggest the possibility of applying the isolated fungus for decolourisation of textile mill wastewater.

Keywords: Azo Dye, Bioaccumulation, Biosorption, Decolourisation, Drimarene Red, Fungus, Textile Dye, Reactive Textile Dyes, Aqueous-Solution, Saccharomyces-Cerevisiae, Adsorption Behavior, Silver Biosorption, Industrial Strain, Rhizopus-Arrhizus, Activated-Sludge, Pore Diffusion, Fungal Biomass

? Ozsoy, H.D., Kumbur, H. and Ozer, Z. (2007), Adsorption of copper(II) ions to peanut hulls and Pinus brutia sawdust. *International Journal of Environment and Pollution*, **31** (1-2), 125-134.

Full Text: Int J Env Pol31, 125

Abstract: Adsorption of copper(II) ions to untreated peanut hulls and untreated Pinus brutia sawdust was investigated as a function of the contact time, amount of adsorbents, initial pH, temperature and initial metal ion concentration. Adsorption efficiency was increased by increasing contact time, amount of adsorbents and decreasing initial metal ion concentration. The optimum adsorption conditions were obtained at pH 5.0. Experimental results indicate that peanut hulls are a more effective adsorbent than Pinus brutia sawdust for the removal of Cu(II) from aqueous solutions. The isothermal data of peanut hulls could be well described by the Langmuir and Freundlich equations.

Keywords: Adsorption, Copper(II) Ions, Peanut Hulls, Pinus Brutia Sawdust, Aqueous-Solution, Activated Carbon, Removal, Biosorption, Chromium, Equilibrium, Metals, Shell

? Anawar, H.M., García-Sánchez, A., Alam, M.T.K. and Rahman, M.M. (2008), Phytofiltration of water polluted with arsenic and heavy metals. *International Journal of Environment and Pollution*, **33** (2-3), 292-312.

Full Text: Int J Env Pol33, 292

Abstract: This article reviews recent advances in phytofiltration of arsenic and toxic heavy metals from contaminated water ecosystems. Arsenic and metal contamination in drinking and non-drinking water has created global environmental health concerns. Phytofiltration using aquatic and terrestrial plants has promising potential for the ex situ and in situ clean-up of these waters. An arsenic hyperaccumulator, a fern species of the Pteris genus in hydroponic systems, may be more efficient to remove arsenic from contaminated water. Phytofiltration using aquatic plants including Eichhornia crassipes, Azolla filiculoides, Lemna minor, Lemna gibba, Ceratophyllum demersum, Nymphaea spontanea, Nymphaea alba L., V. Spiralis, Nelumbo nucifera, Myriophyllum spicatum, Potamogeton lucens, Salvinia herzogoi, Myriophyllum brasillensis, Cabomba sp., Myriophylhum aquaticum, Ludwigina palustris and Mentha aquatic, Scapania undulata and floating macrophytes Pistia stratiotes have high potential for the removal of heavy metals from aqueous solutions and industrial wastewaters depending on the selection of an appropriate plant species.

Keywords: Metals and Metalloids, Phytofiltration, Polluted Water, Transgenic Plants, Bacopa-Monnieri L, Nitrate Reductase-Activity, Fern Azolla-Filiculoides, Submerged Aquatic Plants, Chinese Brake Fern, Lemna-Minor, Aqueous-Solutions, Pteris-Vittata, Holcus-Lanatus, Ceratophyllum-Demersum

? Ho, Y.S. (2008), Bibliometric analysis of biosorption technology in water treatment research from 1991 to 2004. *International Journal of Environment and Pollution*, **34** (1-4), 1-13.

Full Text: [2008\Int J Env Pol34, 1.pdf](2008/Int%20J%20Env%20Pol34,%201.pdf)

Abstract: A bibliometric analysis based on the Science Citation Index was carried out on biosorption technology-related publications during the time span of 1991 to 2004 in water treatment research in the ISI subject categories of environmental engineering, environmental sciences, and water resources. Results showed that yearly production has sharply grown. The US and Canada respectively produced 13% and 12% of the total output. In the five years after publication, 34% of papers were cited more than 10 times, while 5.7% were never cited in the same period. Nine papers of the top 20 most-frequently cited articles were published in Water Research.

Keywords: Analysis, Bibliometric, Biosorption, Canada, Categories, Citation, Engineering, Environmental, Production, Removal, Research, Resources, SCI, Scientometrics, Technology, Treatment, US, Wastewaters, Water, Water Treatment

? Naja, G., Mustin, C., Volesky, B. and Berthelin, J. (2008), Biosorption study in a mining wastewater reservoir. *International Journal of Environment and Pollution*, **34** (1-4), 14-27.

Full Text: [2008\Int J Env Pol34, 14.pdf](2008/Int%20J%20Env%20Pol34,%2014.pdf)

Abstract: An in situ sorption was conducted to assess the behaviour of cations in a mining wastewater reservoir. Sorption experiments on test materials showed that biomass mainly bound uranium, copper, lead, zinc, and nickel, whereas goethite bound arsenic and chromium. Clay minerals bound both barium and rare earth elements. The lacustrine sediments mainly contained iron oxy-hydroxides. Desorption experiments using potentiometric titration were conducted to investigate the effect of pH variations on the stability of the test sorbents after immersion in the lake. Results indicated the presence of weak to very weak acidic functional groups in the sediments attributed to their high content of organic matter affecting the mobility and the behaviour of metals in the lake deposits.

Keywords: Adsorption, Arsenic, Barium, Behaviour, Binding, Biomass, Biosorption, Cations, Chromium, Clay, Copper, Desorption, Equilibrium, Experiments, Functional Groups, Goethite, In Situ, Iron, Lake, Lead, Metal Desorption, Metal Sorption, Metals, Mining, Mining Wastewater, Mobility, Nickel, Organic Matter, Oxides, Penicillium-Chrysogenum, pH, Potentiometric Titration, Presence, Removal, Rhizopus-Arrhizus, Sediments, Soils, Sorbents, Sorption, Stability, Test, Uranium, Variations, Wastewater, Zinc

? Sawalha, M.F., Peralta-Videa, J.R., Parsons, J.G., Gonzalez, J.H. and Gardea-Torresdey, J.L. (2008), Removal of cadmium from contaminated waters using saltbush (*Atriplex canescens*) biomass: Identification of Cd binding sites. *International Journal of Environment and Pollution*, **34** (1-4), 28-42.

Full Text: [2008\Int J Env Pol34, 28.pdf](2008/Int%20J%20Env%20Pol34,%2028.pdf)

Abstract: The effect of pH on Cd(II) binding capacity of saltbush biomass was deter-mined. Metal quantification performed using ICP/OES showed that Cd binding increased as pH increased from 2.0 to 5.0. The highest percentage of Cd bound ranged from 74-81%, 22-40%, and 70-80% for the native, esterified, and hydrolysed biomass. XAS studies showed that cadmium was present as Cd(II) and oxygen was the nearest neighbouring atom with bond lengths of approximately 2.3 angstrom and coordination numbers ranging between 4 and 5. Results indicated that carboxyl groups may be the primary ligand involved in the Cd binding by saltbush biomass.

Keywords: Adsorption, Binding Sites, Biomass, Biosorption, Bond, Cadmium, Cadmium Binding, Capacity, Cd, Cd(II), Coordination, Exafs, ICP, OES, Immobilized Biomass, Ions, Ligand, Metal, pH, Removal, Saltbush, Waters, Xanes

? Mazumder, D., Mukherjee, S. and Ray, P.K. (2008), Treatment of tannery wastewater in a hybrid biological reactor. *International Journal of Environment and Pollution*, **34** (1-4), 43-56.

Full Text: [2008\Int J Env Pol34, 43.pdf](2008/Int%20J%20Env%20Pol34,%2043.pdf)

Abstract: A shaft-type hybrid bioreactor treated composite wastewater of a chrome tannery manufacturing ‘wet-blue leather’. The sample was treated under suspended growth and then hybrid system with 20 g/L of 5 mm tyre tube beads in batch mode. The continuous study was made under suspended growth and hybrid system with 10-30 g/L of beads. The kinetic coefficients K-s, k, Y and k were 170.83 mg/L, 0.0397 h-1, 0.3629 and 0.0035 h-1 respectively. The maximum COD removal was 70.9% under a loading rate of 5.250 kg/day/m3. The overall removal rate ranged from 0.0824 - 0.1004/h for the hybrid system.

Keywords: Activated Sludge Hybrid Reactor, Batch, Batch Mode, Beads, Bioreactor, Chrome, Chrome Tannery, COD, COD Removal, Composite, Composite Wastewater, Growth, Kinetic, Manufacturing, Removal, Shaft-Type, Suspended Growth, Tannery, Tannery Wastewater, Treatment, Tyre-Tube Beads, Wastewater

? Türkmenler, H., Özacar, M. and Şengil, İ.A. (2008), Biosorption of lead onto mimosa tannin resin: Equilibrium and kinetic studies. *International Journal of Environment and Pollution*, **34** (1-4), 57-70.

Full Text: [2008\Int J Env Pol34, 57.pdf](2008/Int%20J%20Env%20Pol34,%2057.pdf)

Abstract: The biosorption of lead onto mimosa tannin resin is studied using a batch sorber. The experimental isotherm data were analysed using the Langmuir, Freundlich and Temkin equations. The equilibrium data fit well in the Freundlich isotherm. The experimental data were analysed using three sorption kinetic models - the pseudo-first- and second-order equations, and the Elovich equation - to determine the best fit equation for the biosorption of lead ions onto mimosa tannin resin. Results show that the Elovich equation provides the best correlation for the biosorption process, whereas the pseudo-second-order equation also fits the experimental data well.

Keywords: Acid Dyes, Adsorption, Aqueous-Solutions, Batch, Biosorption, Biosorption Kinetics, Calcined Alunite, Coagulant Aid, Correlation, Disperse Dyes, Elovich, Elovich Equation, Equilibrium, Equilibrium Data, Freundlich, Freundlich Isotherm, Ions, Isotherm, Kinetic, Kinetic Models, Kinetic Studies, Langmuir, Lead, Lead Ions, Metal-Complex Dyes, Mimosa Tannin Resin, Models, Persimmon Tannin, Pine Sawdust, Process, Pseudo-Second-Order, Pseudo-Second-Order Equation, Resin, Second-Order, Sorption, Sorption Kinetic

? Benaïssa, H. (2008), Removal of acid dyes from aqueous solutions using orange peel as a sorbent material. *International Journal of Environment and Pollution*, **34** (1-4), 71-82.

Full Text: [2008\Int J Env Pol34, 71.pdf](2008/Int%20J%20Env%20Pol34,%2071.pdf)

Abstract: An agricultural by-product waste, orange peel, was tested for the removal of four acid dyes from aqueous solutions in batch conditions. As results obtained, kinetics of dyes sorption was time of contact, initial dyes concentration and dyes type dependent. The pseudo second-order reaction rate model adequately described the kinetics of dyes sorption with high correlation coefficients. A. Langnmir model gave a good fit to the experimental data. A high dyes sorption was observed by this sorbent material. For Nylosane Blue, a maximum sorption capacity about 65.88 mg/g was obtained followed by Erionyl Yellow (64.14 mg/g), Nylomine Red (62.07 mg/g) and Erionyl Red (40.72 mg/g) respectively.

Keywords: Acid, Acid Dyes, Adsorption, Agricultural By-Product, Aqueous Solutions, Batch, Biosorption, Capacity, Contact, Correlation, Dyes, Kinetics, Model, Orange Peel, Pseudo Second-Order, Pseudo-Second-Order, Reaction Rate, Removal, Second-Order, Sorbent, Sorption, Sorption, Sorption Capacity

? Kulshrestha, M. and Venkobachar, C. (2008), Removal and recovery of uranium (VI) using a fungal based low-cost biosorbent Ganoderma lucidum. *International Journal of Environment and Pollution*, **34** (1-4), 83-96.

Full Text: [2008\Int J Env Pol34, 83.pdf](2008/Int%20J%20Env%20Pol34,%2083.pdf)

Abstract: The macrofungus Ganoderma lucidum was employed for removing and recovering uranium(VI) from low-level (10-100 mg/L) uranium wastewaters. Kinetic studies revealed rapid sorption, and kinetics data fitted a second-order model. Equilibrium studies revealed G. lucidum to be a potential biosorbent with specific uptake of 8.98 mg/g at pH 5 for equilibrium U(VI) concentration of 10 mg/L. To recover sorbed U(VI), 0.2N Na2CO3 was employed as eluant and resulted in near 100% recovery. Results of the study indicate that biosorption by Ganoderma lucidum may provide a low energy, cost-effective route for treating and recovering precious uranium from low-level uranyl wastewaters.

Keywords: Adsorption Mechanism, Biomass, Biosorbent, Biosorption, Biosorption, Cost-Effective, Desorption, Eluant, Equilibrium, Equilibrium Studies, Ganoderma Lucidum, Kinetic, Kinetic Studies, Kinetics, Metals, Model, pH, Recovery, Removal, Removal and Recovery of Uranium, Route, Second-Order, Sorption, U(VI), Uranium, Wastewaters

? El-Safty, S.A., Mizukami, F. and Hanaoka, T. (2008), Adsorption of aniline onto hexagonal mesoporous silicate monoliths (HOM-2). *International Journal of Environment and Pollution*, **34** (1-4), 97-110.

Full Text: [2008\Int J Env Pol34, 97.pdf](2008/Int%20J%20Env%20Pol34,%2097.pdf)

Abstract: Hexagonally highly ordered monolithic mesoporous silica and aluminosilicate composites (HOM-2 and Al/HOM-2, respectively) were used as adsorbents for removal of aniline in aqueous solution. These HOM-adsorbents were fabricated by using a simple, reproducible and direct synthesis strategy in which instantly preformed liquid crystalline phase of Brij 56 (C16EO10) surfactant was used as templates. Extensive characterisation studies showed that Al/HOM-2 composites revealed higher surface area, smaller pore sizes and thicker pore wall than those of unloaded-HOM-2 monoliths, indicating that Al might be impregnated into the inner pores and the wall frameworks of HOM-2 silica monoliths. The adsorption experiments of aniline were investigated by using batch techniques. The results obtained showed that the aniline molecule strongly adsorbed onto the aluminosilicate mesostructures. In addition, the HOM-adsorbent exhibited high efficiency for aniline removal after several uses without loss of structural ordering, permitting the reusability for further selective separation of organic molecules from water.

Keywords: Adsorbents, Adsorption, Aluminosilicates, Aniline, Aniline Removal, Aniline Solute, Aqueous Solution, Aqueous-Solution, Batch, Characterisation, Composites, Crystalline, Crystalline Phase, Dye Adsorption, Efficiency, Experiments, Hexagonal Structures, Loss, Mesoporous, Mesoporous Silica, Monolayers, Monolithic-Adsorbents, Organic Pollutants, Removal, Separation, Silica, Solubilization, Sorption, Surface, Surfactant, Surfactant Mesophases, Synthesis, Water, Water Treatments

? Gu, Y.C., Liao, X.P., Huang, Y.J. and Shi, B. (2008), Adsorption of anionic dyes on Fe(III)-loaded collagen fibre from aqueous solution. *International Journal of Environment and Pollution*, **34** (1-4), 111-121.

Full Text: [2008\Int J Env Pol34, 111.pdf](2008/Int%20J%20Env%20Pol34,%20111.pdf)

Abstract: A novel adsorbent, Fe(III)-loaded collagen fibre (FLCF), was prepared and its adsorption behaviours to three kinds of anionic dyes, Direct Yellow 11 (DY11), Acid Yellow 11 (AY11) and Reactive Blue 19 (RB19), were investigated. It was found that the highest adsorption capacity appeared at pH 3 and that the effect of temperature was not remarkable on the adsorption of AY11 and RB19, whilst considerable on the adsorption of DY11. The maximum adsorption capacities at 313 K were found to be 431.0 mg g-1, 485.2 mg g-1 and 311.8 mg g-1 for DY11, AY11 and RB19, respectively, and the adsorption equilibrium data could be well fitted by the Langmuir model. Furthermore, the adsorption kinetics could be well described by the pseudo-second-order rate model, and the adsorption capacities calculated by this model were close to the values actually determined, which implied that chemical reaction should be the rate-controlling step.

Keywords: Acid Dyes, Activated-Sludge, Adsorbent, Adsorption, Adsorption Capacities, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetics, Anionic Dyes, Aqueous Solution, Azo Reactive Dyes, Basic-Dyes, Behaviours, Capacity, Chemical Reaction, Collagen, Collagen Fibre, Congo Red, Dyes, Equilibrium, Equilibrium Data, Fe(III), Fe(III)-Loaded Collagen Fibre, Fly-Ash, Kinetics, Langmuir, Langmuir Model, Low-Cost Adsorbents, Metal Hydroxide Sludge, Model, Novel, pH, Pseudo-Second-Order, Reactive, Removal, Temperature, Values, Waste-Water

? Ileri, R. and Cakir, G. (2008), Biosorption kinetics and isotherms of copper(II) ions from aqueous solution and application of the MATLAB. *International Journal of Environment and Pollution*, **34** (1-4), 122-139.

Full Text: [2008\Int J Env Pol34, 122.pdf](2008/Int%20J%20Env%20Pol34,%20122.pdf)

Abstract: In this study, biosorption kinetic and isotherm models were examined by the MATLAB for removal of copper ions from aqueous solution freely dead single *Rhizopus arhizus* and mixed dead waste sludge biomass. The copper ions removal efficiencies at equilibrium were 98%, 95% and 92% for freely dead R. *arrhizus* and two types of dead waste sludge. The experimental data fitted to pseudo-second order kinetic model by having the best fitting degree and using the over whole range of the studies for three biosorbents. The Sips model provided a well fitting isotherm model and described the biosorption system of the removal of Cu2+ ions.

Keywords: Adsorption, Aqueous Solution, Aspergillus-Niger, Biomass, Biosorption, Biosorption Kinetic, Biosorption Kinetics, Cadmium, Copper, Copper Ions, Cu(II), Cu2+, Equilibrium, Fitting, Immobilized Biomass, Ions, Isotherm, Isotherm Models, Isotherms, Kinetic, Kinetic and Isotherm Models, Kinetic Model, Kinetics, Matlab, Mixed, Model, Models, Pseudo-Second Order, Pseudo-Second Order Kinetic Model, Pseudo-Second-Order, R.Arrhizus, Removal, Rhizopus-Arrhizus, Sludge, Sorption, Waste Sludge, Zinc Ions

? Godlewska-Zylkiewicz, B. (2008), Slurry sampling electrothermal atomic absorption spectrometric determination of palladium in water using biosorption with inactive baker’s yeast Saccharomyces cerevisiae. *International Journal of Environment and Pollution*, **34** (1-4), 140-150.

Full Text: [2008\Int J Env Pol34, 140.pdf](2008/Int%20J%20Env%20Pol34,%20140.pdf)

Abstract: Inactive cells of yeast Saccharomyces cerevisiae were used for palladium preconcentration. The conditions for biosorption of palladium and its determination in yeast cells by slurry electrothermal atomic absorption spectrometry (ETAAS) were optimised. The best sensitivity of measurements and stability of slurry were obtained by using a mechanical agitation (10 minutes) and a mixture of 0.3 mol l-1 thiourea - 1 mol l-1 HCl - 0.5% Triton X-100 as suspension medium. The repeatability of the measurements of Pd in yeast slurry was 6.5% (n = 10). For the quantification of analyte in spiked water samples, the standard addition method was used.

Keywords: Atomic Absorption Spectrometry, Baker’S Yeast, Biosorption, Electrothermal Atomic Absorption Spectrometry, Escherichia-Coli, Etaas, HCl, ICP-MS, Palladium, Platinum, Preconcentration, Pseudomonas-Putida, Road Dust, Saccharomyces Cerevisiae, Samples, Sensitivity, Separation, Slurry Sampling, Solid-Phase Extraction, Speciation, Spectrometry, Stability, Trace Amounts, Triton X-100, Water, Water Samples, Yeast

? Koumanova, B., Achova, B. and Allen, S.J. (2008), Biosorption of acid dye on Pueraria lobata ohwi. Equilibrium and kinetic modelling. *International Journal of Environment and Pollution*, **34** (1-4), 151-163.

Full Text: [2008\Int J Env Pol34, 151.pdf](2008/Int%20J%20Env%20Pol34,%20151.pdf)

Abstract: The applicability of the biomaterial kudzu (Pueraria lobata ohwi) for the removal of the acid dye Erionil Marine Blau (EMB) from aqueous medium was investigated. The equilibrium results were described by the Langmuir and Freundlich models and the isotherms parameters were calculated. The experimental data were correlated better by the Freundlich model (R2 = 0.9029). The effect of the system variables, initial sorbate concentration, mass of biosorbent, agitation rate and particle size, were examined. It was established that the biosorption of EMB on kudzu followed pseudo second order kinetics. The intraparticle diffusion model was also applied to explain the mechanism of dye molecules diffusion through the non-living biomass. The comparative estimation of the results proved the feasibility of using kudzu as an effective biosorbent for the removal of the acid dye EMB from aqueous phase. The highest obtained percent uptake of dye was 93%.

Keywords: Acid, Acid Dye, Acid Dye Erionil Marine Blau, Adsorption, Aqueous-Solution, Biomass, Biomaterial, Biosorbent, Biosorption, Comparative, Diffusion, Dye, Equilibrium, Feasibility, Freundlich, Freundlich Model, Granular Activated Carbon, Intraparticle Diffusion, Ions, Isotherms, Kinetic, Kinetic Modelling, Kinetics, Kudzu, Langmuir, Mechanism, Model, Modelling, Models, Particle Size, Phenols, Pseudo Second Order Kinetics, Pseudo-Isotherms, Pseudo-Second-Order, Removal, Second Order Kinetics, Second-Order, Sorbate, Sorption, Sphagnum Moss Peat, Tree Fern

? Mathialagan, T. and Viraraghavan, T. (2008), Biosorption of chlorophenols: A review. *International Journal of Environment and Pollution*, **34** (1-4), 164-194.

Full Text: [2008\Int J Env Pol34, 164.pdf](2008/Int%20J%20Env%20Pol34,%20164.pdf)

Abstract: A review of published literature on the biosorption of chlorophenols using various biomasses is presented. Factors such as pH, time, temperature, ionic strength, type of biomass and type of chlorophenols influence the chlorophenol uptake by biomass. There is appreciable potential for biosorption of chlorophenols by most of the biomasses tested, although it is species dependent. The mechanisms of biosorption are generally speculated and understood only to a limited extent. More research and development of the various aspects of biosorption technology for removal of chlorophenols is recommended.

Keywords: Activated Carbon, Anaerobic Granular Sludge, Aqueous-Solutions, Biocide Pentachlorophenol, Biomass, Biosorption, Chlorinated Phenols, Chlorophenol, Chlorophenols, Desorption Characteristics, Development, Hazardous Organic Pollutants, Influence, Ionic Strength, Literature, Mechanisms, Microbial Biomass, Pentachlorophenol Adsorption, pH, Pulp Bleaching Effluents, Removal, Research, Review, Technology, Temperature, Type of Biomass

? Kang, S.Y., Lee, J.U. and Kim, K.W. (2008), Biosorption of Pb(II) from synthetic wastewater onto *Pseudomonas aeruginosa*. *International Journal of Environment and Pollution*, **34** (1-4), 195-202.

Full Text: [2008\Int J Env Pol34, 195.pdf](2008/Int%20J%20Env%20Pol34,%20195.pdf)

Abstract: The biosorption property onto Pseudomonas aeruginosa was represented by the Langmuir isotherm, and the maximum capacity of Pb(II) was 45 mg g-1 dry weight of bacteria at pH 5. The biosorption capacity of Pb(II) in a binary system increased with increasing Pb(II) concentration, from 0 to 50 mg l-1 in which Cr(III) existed at a constant concentration of 50 mg l-1. This result indicates that there was no competitive adsorption reaction for the same binding sites on the bacterial surface, because the metal properties of Pb(II) and Cr(III) ions differ.

Keywords: Adsorption, Bacteria, Binary System, Binding Sites, Biosorption, Capacity, Cells, Co2+, Competition, Competitive Adsorption, Cr(III), Ions, Isotherm, Langmuir, Langmuir Isotherm, Lead Ions, Metal, Metals, Pb(II), pH, Pseudomonas, Pseudomonas Aeruginosa, Removal, Removal Efficiency, Surface, Wastewater

? Namasivayam, C. and Hoell, W.H. (2008), Quaternised biomass as anion exchanger for the removal of fluoride from water. *International Journal of Environment and Pollution*, **34** (1-4), 203-214.

Full Text: [2008\Int J Env Pol34, 203.pdf](2008/Int%20J%20Env%20Pol34,%20203.pdf)

Abstract: Dried Chinese Reed, a fast growing plant, was used as a model biomass for the development of anion exchangers using a quaternisation agent, N-(3-chloro-2-hydroxypropyl) trimethylammonium chloride (CHMAC), for the removal of fluoride from water. Parameters investigated in the adsorption studies include F- concentration, agitation time, adsorbent dose and pH. Equilibrium adsorption data followed both Langmuir and Freundlich isotherms. Presence of chloride, nitrate and sulfate decreased the adsorption significantly. Quaternised Hanf sativa and coconut coir pith (solid waste from coconut coir fibre industry) were also tested for the removal of fluoride with and without cross linking.

Keywords: Adsorbent, Adsorption, Adsorption, Agent, Alumina, Anion, Aqueous-Solution, Biomass, Chinese, Coir, Coir Pith, Defluoridation, Desorption, Development, Dose, Drinking-Water, Earth, Equilibrium, Fluoride, Freundlich, Interfering Anions, Ion-Exchange, Isotherms, Langmuir, Langmuir and Freundlich Isotherms, Model, Nitrate, pH, pH Effect, Quaternised Biomass, Removal, Removal of Fluoride, Solid Waste, Sulfate, Waste-Water, Wastewaters, Water

? Escudero, C., Fiol, N., Poch, J. and Villaescusa, I. (2008), The kinetics of copper sorption onto yohimbe bark wastes. *International Journal of Environment and Pollution*, **34** (1-4), 215-230.

Full Text: [2008\Int J Env Pol34, 215.pdf](2008/Int%20J%20Env%20Pol34,%20215.pdf)

Abstract: Kinetics of Cu(II) sorption onto yohimbe bark wastes have been investigated at various initial metal concentration, sorbent mass, agitation speed and particle size. The kinetic data have been treated by using two kinetic models the pseudo-first order equation and the pseudo-second order equation. Results showed that chemical sorption is the rate-control ling step and that the mechanism of mass transport by diffusion across the liquid film surrounding the yohimbe particles is not a limiting step in the sorption process. ton exchange was found to be the main responsible mechanism for copper ions uptake.

Keywords: Adsorption, Carbon, Copper, Copper Ions, Cu, Diffusion, Exchange, Film, FTIR-ATR, Hexavalent Chromium, Ion Exchange, Ions, Kinetic, Kinetic Models, Kinetics, Mechanism, Metal, Metals, Models, Particle Size, Peat, Process, Pseudo-First Order, Pseudo-First Order Equation, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Equation, Pseudo-Second-Order, Removal, Sem-Edx, Sorbent, Sorption, Transport, Yohimbe Bark Wastes

? Matis, K.A., Zouboulis, A.I., Lazaridis, N.K. and Karapantsios, T.D. (2008), Metal ions biosorption from dilute aqueous solution. *International Journal of Environment and Pollution*, **34** (1-4), 231-245.

Full Text: [2008\Int J Env Pol34, 231.pdf](2008/Int%20J%20Env%20Pol34,%20231.pdf)

Abstract: Biosorption, using non-living biomass (mostly suspended), is briefly reviewed in this paper as applied to toxic metal ions removal, with particular focus on the kinetics and engineering considerations of the process. Several diverse kinetic models were successful in fitting the experimental data. Evidence was provided that the metal biosorption (on Aeromonas caviae biomass) is a complex process. The examination of satisfactory and innovative wastewater treatment techniques has become an important requirement nowadays, and one of the significant subjects under investigation is the effective recycling of water and for precious or strategic metals themselves.

Keywords: Aeromonas-Caviae, Aqueous Solution, Biomass, Biosorbent, Biosorption, Cadmium Ions, Cations, Chromium(VI) Biosorption, Engineering, Equilibrium, Fitting, Flotation, Fungal Biomass, Heavy-Metals, Ions, Kinetic, Kinetic Models, Kinetics, Metal, Metal Biosorption, Metal Ions, Metal Ions Removal, Metals, Modelling, Models, Oxyanions, Process, Recycling, Removal, Separation, Sorption, Toxic Metals, Treatment, Treatment Techniques, Wastewater, Wastewater Treatment, Water

? Lee, C.K., Ong, S.T. and Zainal, Z. (2008), Ethylenediamine modified rice hull as a sorbent for the removal of Basic Blue 3 and Reactive Orange 16. *International Journal of Environment and Pollution*, **34** (1-4), 246-260.

Full Text: [2008\Int J Env Pol34, 246.pdf](2008/Int%20J%20Env%20Pol34,%20246.pdf)

Abstract: The potential of ethylenediamine modified rice hull to remove both basic and reactive dyes from aqueous solutions was studied. Equilibrium sorption data could be fitted into Langmuir and Brunauer-Emmett-Teller isotherm models. Sorption was enhanced by 4.5- and 2.4-fold for Basic Blue 3 and Reactive Orange 16, respectively, in binary dye solutions compared to single dye solutions. Column studies revealed that breakthrough was bed-depth, flow-rate and influent-concentration dependent. Unusual breakthrough curves were obtained for Reactive Orange 16, with very rapid initial breakthrough followed by complete retention at low flow rate, influent concentration and high bed depth. The breakthrough curves of Basic Blue 3 followed the typical S shape of packed-bed systems. Theoretical breakthrough curves at different bed depths and flow rates generated by the two-parameter mathematical model agreed well with the experimental data of single dye solution of Basic Blue 3.

Keywords: Adsorption, Aqueous Solutions, Aqueous-Solution, Basic Blue 3, Biosorption, Breakthrough, Breakthrough Curves, Column, Column Studies, Dye, Dyes, Equilibrium, Ethylenediamine, Husk, Isotherm, Isotherm Models, Langmuir, Mathematical Model, Model, Models, Modified, Packed Bed, Packed-Bed, Pith, Reactive, Reactive Dyes, Reactive Orange 16, Removal, Residues, Retention, Rice Hull, Sorbent, Sorption, Systems, Two-Parameter Model

? Chakrabarti, S., Chaudhuri, B. and Dutta, B.K. (2008), Adsorption of model textile dyes from aqueous solutions using agricultural wastes as adsorbents: Equilibrium, kinetics and fixed bed column study. *International Journal of Environment and Pollution*, **34** (1-4), 261-274.

Full Text: [2008\Int J Env Pol34, 261.pdf](2008/Int%20J%20Env%20Pol34,%20261.pdf)

Abstract: Gram husk and groundnut shell are cheap and abundantly available agricultural waste materials in India. A systematic study on the adsorption of some model dyes from aqueous solution on these low-cost adsorbents has been attempted. Model dyes used were Methylene Blue, Rhodamine B, Congo Red, Eosine Y and Metanil Yellow. Equilibrium, kinetics and column experiments were performed. Effects of different process variables have been studied. Equilibrium data fitted well in Langmuir and Freundlich isotherm equations. A model using Freundlich equation has been developed for interpretation of kinetic data. Other models such as Lagergren equation and pseudo second order equation were also used. Of these models, pseudo second order equation was found to be the most satisfactory. Column experiments were carried out with gram-husk and Rhodamine B. The data could be correlated well with BDST model.

Keywords: Adsorbents, Adsorption, Agricultural Waste, Aqueous Solution, Aqueous Solutions, Basic-Dyes, Bdst Model, Color Removal, Column, Column Experiments, Column Study, Congo Red, Dyes, Equilibrium, Equilibrium Data, Experiments, Fixed Bed, Fixed Bed Column, Freundlich, Freundlich Equation, Freundlich Isotherm, Gram Husk, Groundnut Shell, India, Isotherm, Kinetic, Kinetics, Lagergren, Langmuir, Low Cost Adsorbents, Low-Cost Adsorbents, Metanil Yellow, Methylene Blue, Model, Models, Process, Pseudo Second Order Kinetics, Pseudo-Second-Order, Rhodamine B, Second-Order, Shell, Sorption, Waste Materials, Water

? Kahraman, S., Dogan, N. and Erdemoglu, S. (2008), Use of various agricultural wastes for the removal of heavy metal ions. *International Journal of Environment and Pollution*, **34** (1-4), 275-284.

Full Text: [2008\Int J Env Pol34, 275.pdf](2008/Int%20J%20Env%20Pol34,%20275.pdf)

Abstract: There is a need to develop innovative and alternative technologies that can remove toxic heavy metal pollutants from wastewater. In this Study, two agricultural residues, cotton stalks and apricot seeds, were used to adsorb copper and lead in solutions. Sorption capacities of agricultural wastes were significantly affected by solution pH, adsorbent mass and adsorbent particle size. The adsorption efficiency of two agricultural waste was in the order cotton stalk > apricot seed and the agricultural wastes adsorbed metal ions in the order of Pb > Cu. Treatment of these metals with agricultural wastes reduced their toxic effects on P. aeruginosa. This reduction in toxic effect is important both in respect of environmental biotechnology and waste detoxification. This study has indicated that cotton stalk and apricot seed could be employed as low-cost alternatives in wastewater treatment for the removal of heavy metals.

Keywords: Adsorbent, Adsorption, Agricultural Waste, Apricot Seed, Aqueous-Solution, Biosorption, Biosorption, Copper, Cotton Stalk, Cu, Detoxification, Efficiency, Environmental, Funalia-Trogii, Heavy Metal, Heavy Metal Ions, Heavy Metals, Heavy-Metal, Ions, Lead, Metal, Metal Ions, Metals, Need, Particle Size, Pb, pH, Phanerochaete-Chrysosporium, Pollutants, Reduction, Removal, Solution pH, Sorbent, Sorption, Textile Dyes, Toxicity, Treatment, Tree Fern, Wastewater, Wastewater Treatment

? Zheng, G.H., Wang, L., Zhou, Q. and Li, F.T. (2008), Optimisation of cell surface and structural components for improving adsorption capacity of Pseudomonas putida 5-x to Cu2+. *International Journal of Environment and Pollution*, **34** (1-4), 285-296.

Full Text: [2008\Int J Env Pol34, 285.pdf](2008/Int%20J%20Env%20Pol34,%20285.pdf)

Abstract: A heavy metal binding bacterium Pseudomonas putida 5-x was used as biosorbent for heavy metal removal from wastewater. In order to compete with physical adsorbent, the optimisation of the cell preparation technique for further improving its biosorption capacity was conducted. Results showed that the compositions of medium for cell culturing, cell growth age and cell pre-treating technique would affect the cell surface and structural components, hence the adsorption capacity of the cell to heavy metal ions. Using optimal cell culture conditions and pretreatment technique, the Cu2+ adsorption capacity of the cell was obviously increased from 51.2 mg g-1 to 89.6 mg g-1.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Affect, Age, Biomass, Biosorbent, Biosorption, Capacity, Cell Culture, Cell Growth Age, Cell Pretreatment, Copper, Cu2+, Culture, Electroplating Effluent, Envelope, Growth, Heavy Metal, Heavy Metal Ions, Heavy Metal Removal, Heavy-Metal, Heavy-Metals, Ions, Metal, Metal Binding, Metal Ions, Metal Removal, Optimisation, Outer-Membrane, Preparation, Pretreatment, Pseudomonas, Pseudomonas Putida, Recovery, Removal, Surface, Technique, Wastewater, Zinc

? Bakhti, M.Z., Selatnia, A. and Junter, G.A. (2008), Biosorption of Ag+ from aqueous solution by Streptomyces rimosus biomass. *International Journal of Environment and Pollution*, **34** (1-4), 297-307.

Full Text: [2008\Int J Env Pol34, 297.pdf](2008/Int%20J%20Env%20Pol34,%20297.pdf)

Abstract: The silver biosorption capacity of a Streptomyces rimosus biomass pretreated with NaOH was studied in the batch mode. Under optimal experimental conditions, a biosorption capacity of 63 mg Ag+ g-1 biomass was obtained. External mass transfer was found to be the controlling step in the overall sorption process. The equilibrium data poorly fitted the Langmuir and Freundlich model isotherms over the whole range of initial silver concentrations tested (10-250 mg L-1).

Keywords: Aqueous Solution, Batch, Batch Mode, Batch Processing, Biomass, Biosorption, Capacity, Equilibrium, Equilibrium Data, Freundlich, Freundlich Model, Heavy-Metals, Isotherms, Langmuir, Mass Transfer, Model, NaOH, Process, Rhizopus-Arrhizus, Silver, Silver, Sorption, Streptomyces Rimosus, Toxicity, Transfer, Waste-Water Treatment, Water

? Özcan, A.S. and Özcan, A. (2008), Adsorption of Acid Yellow 99 onto DEDMA-sepiolite from aqueous solutions. *International Journal of Environment and Pollution*, **34** (1-4), 308-324.

Full Text: [2008\Int J Env Pol34, 308.pdf](2008/Int%20J%20Env%20Pol34,%20308.pdf)

Abstract: The adsorption of Acid Yellow 99 (AY99) onto dodecylethyldimethylammonium (DEDMA)-sepiolite was investigated in aqueous solution in a batch system with respect to pH, contact time and temperature. The surface modification of DEDMA-sepiolite was examined by the FTIR technique. The experimental data fitted very well with the pseudo-second-order kinetic model with the correlation coefficients above 0.985. The Langmuir, Freundlich and Dubinin-Radushkevich (D-R) adsorption isotherm models agree well with experimental data. The Langmuir-isotherm constant (K-L) was used to evaluate the thermodynamic parameters for the adsorption of AY99 onto DEDMA-sepiolite.

Keywords: Acid Dye, Adsorption, Adsorption Isotherm, Adsorption Isotherm Models, Aqueous Solution, Aqueous Solutions, Batch, Clays, Contact, Contact-Time, Correlation, Dedma-Sepiolite, Diffusion, Freundlich, Ftir, Isotherm, Isotherm Models, Isotherms, Kaolinite, Kinetic, Kinetic Model, Kinetics, Kinetics, Langmuir, Langmuir Isotherm, Model, Model-Calculations, Models, Modification, Organic Cations, Peat, pH, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Sepiolite, Sorption, Surface, Surface Modification, Surfactant, Technique, Temperature, Thermodynamic, Thermodynamic Parameters, Water-Soluble Dye

? Beolchini, F., Pagnanelli, F., Toro, L. and Veglio, F. (2008), A methodological approach for dynamic modelling of membrane integrated biosorption: A case study on Sphaerotilus natans as biosorbent. *International Journal of Environment and Pollution*, **34** (1-4), 325-339.

Full Text: [2008\Int J Env Pol34, 325.pdf](2008/Int%20J%20Env%20Pol34,%20325.pdf)

Abstract: This work is a review of the study performed on heavy metals biosorption by Sphaerotilus natans confined in an ultrafiltration membrane module. A methodological approach has been applied aiming at the dynamic modelling of the process: i) firstly, biosorbent was characterised according to acid-base properties of binding sites; ii) then, equilibrium studies were performed both in single metal and multimetal systems in order to evidence any competition for binding sites and to find mechanicistic models that are able to describe biosorption equilibrium; iii) finally, biosorption in membrane processes was investigated in laboratory scale, in the case of both single- metal and two- metal systems, and a dynamic model was developed accounting for binding site competition and for binding ability of cell’s fragments generated by tangential flow shear stress.

Keywords: Ability, Acid-Base Properties, Activated-Sludge, Aqueous-Solutions, Binary-Systems, Binding Site, Binding Sites, Biomass, Biosorbent, Biosorption, Case Study, Competition, Copper Biosorption, Dynamic, Dynamic Modelling, Equilibrium, Equilibrium, Equilibrium Studies, Evidence, Heavy Metals, Heavy-Metals, Membrane, Membrane Processes, Metal, Metal-Ions, Metals, Model, Modelling, Models, Multimetal Systems, Process, Reactors, Review, Scale, Simulation, Sphaerotilus Natans, Stress, Systems, Tangential Flow, Ultrafiltration, Work

? Basso, M.C. and Cukierman, A.L. (2008), Biosorption performance of red and green marine macroalgae for removal of trace cadmium and nickel from wastewater. *International Journal of Environment and Pollution*, **34** (1-4), 340-352.

Full Text: [2008\Int J Env Pol34, 340.pdf](2008/Int%20J%20Env%20Pol34,%20340.pdf)

Abstract: The ability of red (Corallina officinalis L., Porphyra columbina) and green (Codium fragile) marine macroalgae to remove Cd(II) ions from dilute aqueous solutions, mimicking wastewaters with low metal concentrations, was explored. Under pre-established equilibrium conditions, Corallina and Porphyra attained almost complete removal at 1 g/100 mL. Equilibrium sorption isotherms of cadmium were determined and modelled. As judged from the estimated maximum sorption capacities, Porphyra showed the highest cadmium-binding ability, followed by Corallina and Codium. Furthermore, the three algae proved less effective in capturing nickel than cadmium ions at low dosages, attaining quite similar removal for 1 g/100 mL.

Keywords: Ability, Algae, Aqueous Solutions, Aqueous-Solution, Biosorption, Cadmium, Cadmium Binding, Cadmium Ions, Cd(II), Cd(II) Ions, Cladophora-Crispata, Copper Ions, Equilibrium, Green, Heavy Metals Removal, Heavy-Metals, Ions, Isotherms, Lignocellulosic Materials, Macroalgae, Marine, Metal, Nickel, Performance, Red and Green Marine Macroalgae, Removal, Sorption, Sorption Isotherms, Sphagnum Moss Peat, Toxic Metals, Tree Fern, Wastewater, Wastewaters

? Iqbal, M., Saeed, A. and Edyvean, R.G.J. (2008), Biosorption of lead(II) by free and immobilised fungal biomass of Phanerochaete chrysosporium: a comparative study. *International Journal of Environment and Pollution*, **34** (1-4), 353-363.

Full Text: [2008\Int J Env Pol34, 353.pdf](2008/Int%20J%20Env%20Pol34,%20353.pdf)

Abstract: An efficient metal biosorbent was developed by immobilising fungal biomass within matrix of loofa sponge (FBILS). At biosorption equilibrium FBILS removed 137 mg Pb(II) g-1, which was 24.3% greater than 110 mg Pb(II) g-1 free fungal biomass. The equilibrium biosorption data fitted well the Langmuir model. The experimental data, when applied to the pseudo-first and second-order kinetic models, followed the second-order with r(2) 0.996. Metal desorption from the Pb(II)-laden FBILS with 50 mM HCl was 99%, and the regenerated FBILS was repeatedly used in seven biosorption-desorption cycles without significant loss in biosorption capacity. The study indicated high potential of FBILS for effective removal of Pb(II) from industrial wastewater.

Keywords: Adsorption, Aqueous-Solution, Biomass, Biosorbent, Biosorption, Cadmium, Capacity, Cells, Comparative, Copper, Desorption, Equilibrium, HCl, Immobilised Fungal Biomass, Industrial Wastewater, Ions, Kinetic, Kinetic Models, Langmuir, Langmuir Model, Lead(II), Loofa Sponge, Loss, Metal, Metals, Model, Models, Pb(II), Phanerochaete Chrysosporium, Removal, Second-Order, Sorption, Sponge, Wastewater, Zinc

? Wang, X.S. and Qin, Y. (2008), Removal of Ni2+ from aqueous solution by rice bran. *International Journal of Environment and Pollution*, **34** (1-4), 364-373.

Full Text: [2008\Int J Env Pol34, 364.pdf](2008/Int%20J%20Env%20Pol34,%20364.pdf)

Abstract: Rice bran, an agricultural by-product, was used for the sorptive removal of Ni2+ from aqueous solutions. Batch adsorption experiments were performed as a function of initial concentrations, contact time, pH and temperature. The experimental data were analysed by Langmuir, Freundlich and Redlich-Peterson isotherms. The equilibrium sorption capacity of Ni2+ Was determined from the Langmuir equation and was found to be 28.36 mg/g. The sorption process follows pseudo-second-order kinetics. The thermodynamic parameters, such as ΔG and ΔS, have been calculated. The thermodynamics of Ni2+/rice bran system indicates the spontaneous nature of the process.

Keywords: Adsorption, Adsorption Kinetics, Agricultural By-Product, Aqueous Solution, Aqueous Solutions, Batch Adsorption, Capacity, Contact, Contact-Time, Copper, Equilibrium, Experiments, Freundlich, Function, Isotherm, Isotherm, Isotherms, Kinetics, Langmuir, Langmuir Equation, Lead, Metal-Ions, Ni2+, Ni2+ Removal, Nickel, Peat, pH, Process, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Redlich Peterson, Redlich-Peterson, Removal, Rice Bran, Sorption, Sorption Capacity, Spontaneous, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Tree Fern

? Sharma, A. and Bhattacharyya, K.G. (2008), Interactions of Pb(II), Cd(II) and Cr(VI) with Neem (Azadirachta indica) leaf powder: Kinetics and thermodynamics. *International Journal of Environment and Pollution*, **34** (1-4), 374-399.

Full Text: [2008\Int J Env Pol34, 374.pdf](2008/Int%20J%20Env%20Pol34,%20374.pdf)

Abstract: Neem leaf powder (NLP) is made from the leaves of the Neem tree (Azadirachta indica) for removing Pb(II), Cd(II) and Cr(VI) from water. The powder (surface area 21.45 m2/g), was used at pH similar to 7.0 and pseudo first and second orders, Elovich equation, intra-particle and liquid film diffusion models were used to test the kinetics. The interactions mostly followed a second-order model involving transfer of the cations from the surrounding liquid film to the surface of the adsorbent particles. The interactions were exothermic and spontaneous. Enthalpy, entropy and Gibbs energy changes show a high potential of NLP as a biosorbent for metal ions.

Keywords: Adsorbent, Adsorption, Agricultural Wastes, Aqueous-Solution, Azadirachta Indica, Biogas Residual Slurry, Biosorbent, Cations, Cd(Ii), Changes, Chromium, Color Removal, Cr(VI), Cr(VI) Adsorption, Diffusion, Diffusion Models, Divalent Metal-Ions, Elovich, Elovich Equation, Exothermic, Film, Heavy-Metals, Interactions, Ions, Kinetics, Metal, Metal Ions, Model, Models, Neem, Neem Leaf Powder, Pb(II), pH, Second-Order, Sorption Kinetics, Spontaneous, Surface, Test, Thermodynamics, Transfer, Water

? Alkan, U. and Eleren, S.Ç. (2008), Effect of sludge age on heavy metal biosorption by selector activated sludge. *International Journal of Environment and Pollution*, **34** (1-4), 400-411.

Full Text: [2008\Int J Env Pol34, 400.pdf](2008/Int%20J%20Env%20Pol34,%20400.pdf)

Abstract: The influence of sludge age on the metal biosorption characteristics of an aerobic selector-activated sludge was investigated. Two bench-scale aerobic-activated sludge systems were operated at sludge ages of 5 days and 15 days for studying biosorption of Cu and Cr(VI). In-vitro batch experiments were performed to compare biosorption characteristics of the sludge samples harvested from the bench-scale systems. Adsorption capacity (k) of the sludge for both of the metals was found to decrease with increasing sludge age from 5 days to 15 days However, percent removals of the metals were variable in relation to sludge age. Although Cr(VI) removal increased from 33% to 68%, Cu removal exhibited a slight decrease from 81% to 74% with increasing sludge age.

Keywords: Activated Sludge, Adsorption, Adsorption Capacity, Aerobic, Aerobic Selector, Age, Bacterial Extracellular Polymers, Batch, Batch Experiments, Biosorption, Capacity, Copper, Cr(VI), Cr(VI) Removal, Cu, Culture, Experiments, Heavy Metal, Heavy Metals, Heavy-Metal, Hexavalent Chromium, Influence, Metal, Metal Biosorption, Metals, Removal, Retention Time, Samples, Sludge, Sludge Age, Stability-Constants, Systems

? Al-Asheh, S. and Belal, A. (2008), Carboxylic acids-modified palm stones as sorbents for metal ions using single and multi-metal aqueous solutions. *International Journal of Environment and Pollution*, **34** (1-4), 412-426.

Full Text: [2008\Int J Env Pol34, 412.pdf](2008/Int%20J%20Env%20Pol34,%20412.pdf)

Abstract: Natural palm stone has been modified in order to enhance its sorption capacity for different metal ions. The palm stone (PS), or date-pits, was treated with different carboxylic acids, namely carboxylic acid (CA), tartaric acid (TA), salicylic acid (SA), oxalic acid (OA), mandelic acid (MND) and malic acid (MA). Batch sorption tests were carried out using single, binary or tertiary metal systems composed from copper, zinc and cadmium. In single metal systems, the sorption of metal ions by modified date-pits stone was always higher than that of the unmodified date-pits. The best sorbents used in this work for the removal of Cu, Zn and Cd from their individual solution are SA-PS, CA-PS and MA-PS, respectively. For multi-metal systems, OA-PS and TA-PS can be considered as the best candidates for metal removal. Equilibrium is achieved in a contact time of about an hour. The amount adsorbed was dependent on the process conditions; it increased with an increase in pH, initial metal concentration and amount of sorbet. The Freundlich model agreed very well with the equilibrium isotherm experimental data.

Keywords: Achieved, Acid, Adsorbents, Adsorption, Adsorption, Aqueous Solutions, Ca-Ps, Cadmium, Capacity, Cd, Contact, Contact-Time, Copper, Cu, Date Pits, Equilibrium, Equilibrium Isotherm, Freundlich, Freundlich Model, Heavy-Metals, Individual, Ions, Isotherm, MA-PS, MAPS, Metal, Metal Ions, Metal Removal, MND-PS, Model, Modified, Multimetal Systems, OA-PS, Palm Stone, pH, Process, Removal, SA-PS, Salicylic Acid, Sawdust, Sorbents, Sorption, Sorption Capacity, Systems, TA, TA-PS, Tartaric Acid, Waste-Water, Work, Zinc, Zn

? Yu, H., Covey, G.H. and O’Connor, A.J. (2008), Innovative use of silvichemical biomass and its derivatives for heavy metal sorption from wastewater. *International Journal of Environment and Pollution*, **34** (1-4), 427-450.

Full Text: [2008\Int J Env Pol34, 427.pdf](2008/Int%20J%20Env%20Pol34,%20427.pdf)

Abstract: Biosorption is a process of metabolism-independent, passive, physico-chemical binding of metal ions involving non-living biomass, which offers advantages over conventional methods because of cost-effectiveness, especially for dilute metal solutions, and minimal environmental impact. This paper reviews heavy metal biosorption using silvichernical-based biomass materials. It discusses the use of a wide range of silvichemical biomasses and their derivatives for heavy metal removal from single and multi-metal systems. The structures and properties of silvichemical biomasses as well as methods of biosorbent pretreatment and immobilisation are evaluated. Metal biosorption mechanisms and binding sites, selective biosorption and biosorbent reuse and regeneration are also addressed.

Keywords: Activated Carbon, Alfalfa Biomass, Aqueous-Solutions, Batch Experiments, Binding Sites, Biomass, Biosorbent, Biosorption, Coniferous Barks, Contaminated Water, Cost Effectiveness, Cost-Effectiveness, Environmental, Environmental Impact, Heavy Metal, Heavy Metal Removal, Heavy-Metal, Immobilisation, Impact, Ion Exchange, Ion-Exchanger, Ions, Mechanisms, Metal, Metal Biosorption, Metal Ions, Metal Removal, Metal Sorption, Methods, Multimetal Systems, Natural-Waters, Paper-Mill Sludge, Plant Polyphenols, Pretreatment, Process, Regeneration, Removal, Silvichemical Biomass, Sorption, Systems, Wastewater, Wastewater Treatment

? Crini, G., Martel, B. and Torri, G. (2008), Adsorption of CI Basic Blue 9 on chitosan-based materials. *International Journal of Environment and Pollution*, **34** (1-4), 451-465.

Full Text: [2008\Int J Env Pol34, 451.pdf](2008/Int%20J%20Env%20Pol34,%20451.pdf)

Abstract: In this study, N-benzyl mono- and disulfonate derivatives of chitosan are used for the removal of dyes from aqueous solution. The effectiveness of these materials in adsorbing basic blue 9 (BB 9) has been studied as a function of agitation time, initial concentration and solution salinity. Experimental results confirmed the strong cation exchanger character of the sulfonated derivatives and showed that disulfonate derivatives of chitosan exhibited higher sorption capacities toward cationic dye than the monosulfonic one. Sorption of BB 9 reached equilibrium within 20-40 min and the maximum adsorption onto disulfonate derivative was 121.9 mg/g at pH = 3. The originality of both derivatives is their inversed pH domain of solubility compared to the parent polymer, so that they could be used as adsorbents in acidic medium without any crosslinking reaction.

Keywords: Activated Carbon, Adsorbents, Adsorption, Aqueous Solution, Aqueous-Solution, Basic Blue 9, Cationic Dye, Chitosan, CI Basic Blue 9, Crosslinking, Diatomaceous-Earth, Dye, Dyes, Effectiveness, Equilibrium, Equilibrium Isotherm, Function, Metal-Ions, Methylene-Blue, Originality, Parent, pH, Polymer, Removal, Removal of Dyes, Sorption, Sorption Properties, Waste-Water, Wastewater Treatment

? Ofomaja, A.E. and Ho, Y.S. (2008), Kinetic biosorption study of cadmium onto coconut copra meal as biosorbent. *International Journal of Environment and Pollution*, **34** (1-4), 466-476.

Full Text: [2008\Int J Env Pol34, 466.pdf](2008/Int%20J%20Env%20Pol34,%20466.pdf); [2005\Int J Env Pol-Ho1.pdf](2005/Int%20J%20Env%20Pol-Ho1.pdf) [2005\Int J Env Pol-Ho2.pdf](2005/Int%20J%20Env%20Pol-Ho2.pdf)

Abstract: The sorption of cadmium ions on an agricultural by-product, coconut copra meal, was investigated. A batch sorption model, based on the assumption of the pseudo-second-order mechanism, was applied to predict the rate constant of sorption, the equilibrium sorption capacity and the initial sorption rate with the effect of initial cadmium concentration and temperature. Activation energy of sorption was determined based on the pseudo-second-order rate constants. In addition, the experimental results were analysed by pseudo-Langmuir, pseudo-Freundlich and pseudo-Redlich-Peterson isotherms based on pseudo-second order kinetic expression constant. Both pseudo-Langmuir and pseudo-Redlich-Peterson isotherms were found to represent the measured sorption data well. According to the evaluation using the pseudo-Langmuir equation, the monolayer sorption capacity was obtained to be 2.59 mg/g.

Keywords: Adsorption, Agricultural By-Product, Aqueous-Solution, Batch, Biosorbent, Biosorption, Cadmium, Cadmium Ions, Capacity, Copra Meal, Divalent Metal-Ions, Equilibrium, Evaluation, Heavy-Metals, Ions, Isotherms, Kinetic, Kinetics, Mechanism, Model, Monolayer, Peat, Pseudo-Isotherms, Pseudo-Second Order, Pseudo-Second-Order, Rate Constants, Removal, Sorption, Sorption Capacity, Temperature, Tree Fern

? Pan, X.L., Meng, X.L., Zhang, D.Y. and Wang, J.L. (2009), Biosorption of strontium ion by immobilised *Aspergillus niger*. *International Journal of Environment and Pollution*, **37** (2-3), 276-288.

Full Text: Int J Env Pol37, 276.pdf

Abstract: Biosorption of strontium by *Aspergillus niger* immobilised in calcium alginate has been studied. The experimental data showed that immobilised A. niger was effective in removing Sr2+ from aqueous solution. The optimal pH and temperature were 3.0 degrees C and 25 degrees C, respectively. pseudo second-order model was applicable to all the sorption data over the entire time range. Intraparticle diffusion was not the only rate-limiting step. Sorption data conformed well to both Langmuir and Freundlich isotherm model. The maximum adsorption capacity (qmax) niger was 751.88 mg/g. The FT-IR analysis showed that the mechanism involved in biosorption of Sr2+ by A. niger was mainly attributed to Sr2+ binding of groups of amide groups I and II.

Keywords: Adsorption, Aqueous-Solution, *Aspergillus niger*, Biomass, Biosorption, Copper(II), Heavy Metals, Heavy-Metals, Immobilisation, Lead(II), Removal, Strontium

? Pan, X.L., Wang, J.L. and Zhang, D.Y. (2009), Biosorption of Co(II) by immobilised *Pleurotus ostreatus*. *International Journal of Environment and Pollution*, **37** (2-3), 289-298.

Full Text: Int J Env Pol37, 289.pdf

Abstract: Cobalt biosorption by *Pleurotus ostreatus* immobilised in calcium alginate has been studied. The experimental results showed that immobilised Pleurotus ostreatus were effective for removing Co(II) from aqueous solution. Co(II) biosorption equilibrium was approached within 120 min. Pseudo second-order kinetic equation was applicable to all the sorption data over the entire time range. Intra-particle diffusion was not the only rate-limiting step. The biosorption data conformed better to Langmuir Isotherm Model than Freundlich Isotherm Model. The maximum adsorption capacity (q(m)) onto *Pleurotus ostreatus* immobilised in calcium alginate was 13.5 mg/g for Co(II). The FT-IR analysis showed that the mechanism involved in biosorption of Co(II) by Pleurotus ostreatus was mainly attributed to binding of amide I group.

Keywords: Bakers-Yeast, Biomass, Biosorption, Cadmium, Chitosan, Cobalt, Equilibrium, Gels, Immobilisation, Ions, Kinetics, Mechanism, Microbial-Cells, *Pleurotus ostreatus*, Sorption

? Wang, B.E., Hu, Y.Y., Xie, L. and Peng, K. (2009), Bioaccumulation of azo dye using immobilised beads of Aspergillus fumigatus. *International Journal of Environment and Pollution*, **37** (2-3), 327-338.

Full Text: Int J Env Pol37, 349.pdf

Abstract: Sodium carboxymethylcellulose (CMC) immobilised beads of Aspergillus fumigatus were found to effectively decolourise culture media containing azo dye namely, reactive brilliant red K-2BP, by bioaccumulation in this paper. CMC beads without biomass and inactive CMC beads were used as control systems. The optimum values of influence factors such as, initial pH, temperature, agitation rate, salinity range, beads diameter, and beads dosage on bioaccumulation in batch mode were 6 similar to 9, 40 degrees C, 150 r/min, 0 similar to 2.5%, 2.0 mm and 3.0%, respectively. The residual dye concentration decreased irregularly with contact time.

Keywords: Aspergillus Fumigatus, Azo Dye, Batch, Bioaccumulation, Biodegradation, Biosorption, Candida-Tropicalis, Decolorization, Fungal Biomass, Immobilisation, pH, Reactive Dye, Removal, *Rhizopus*

? Yin, Z.Y., Zhang, D.Y. and Pan, X.L. (2009), Biosorption of thallium by dry biofilm biomass collected from a eutrophic lake. *International Journal of Environment and Pollution*, **37** (2-3), 349-356.

Full Text: Int J Env Pol37, 349.pdf

Abstract: Thallium poisoning due to thallium-bearing ore exploitation is very grave in sonic mining areas in Guizhou China. However, effective treatment technologies for Tl-containing wastewater were unavailable. The study showed that dead eutrophic biofilm biomass was effective in removing Tl from aqueous solution when the solution was basic. The adsorption process is rapid and equilibrium was approached at about 30 min. The pseudo-second order equation was applicable to all the kinetic data. The Langmuir Isotherm Model could be used to fit Tl sorption data well over a concentration range 10-1000 ug/l. The adsorption capacity was about 332.23 ug/g dry biomass. The adsorption column containing 2.5 g of dry biomass could purify 2000 ml of 500 ug/l Tl solution before breakthrough.

Keywords: Biofilm, Biosorption, Thallium

? Peng, H., Liu, Y.G., Zeng, G.M., Li, X. and Zhang, W. (2009), Biosorption of Cu(II) and Zn(II) by intact and pre-treated biomass of *Oscillatoria planctonica*. *International Journal of Environment and Pollution*, **38** (1-2), 1-14.

Abstract: The biosorption of copper(II) and zinc(II) from aqueous solution by intact and pre-treated biomass of Oscillatoria planctonica was studied. The biosorption was pH dependent and the adsorption capacity decreased with the biosorbent to solution ratio increasing. The maximum removal ratios were 84.84% and 68.22% respectively in pre-treated biomass. The biosorption followed both the Langmuir and Freundlich isotherm model and the adsorption equilibrium was reached in about 1 h. The adsorbed Cu(II) and Zn(II) could be desorbed effectively by 0.1 M nitric acid. The experimental results indicated that Oscillatoria planctonica was effective in removing Cu(II) and Zn(II) from wastewater.

Keywords: Adsorption, Adsorption Capacity, Adsorption Equilibrium, Aqueous Solution, Biomass, Biosorbent, Biosorption, Capacity, Copper, Copper, Copper(II), Cu(II), Desorption, Equilibrium, Experimental, Freundlich, Freundlich Isotherm, Freundlich Isotherm Model, Heavy-Metals, Isotherm, Isotherm Model, Langmuir, Model, Oscillatoria Planctonica, pH, pH-Dependent, Pre-Treatment, Removal, Solution, Wastewater, Zinc, Zinc(II), Zn(II)

? Yang, Q., Shang, H.T. and Wang, J.L. (2009), Biosorption and biodegradation of trichloroethylene by acclimated activated sludge. *International Journal of Environment and Pollution*, **38** (3), 289-298.

Abstract: The biosorprion and biodegradation of trichloroethylene (TCE) was investigated. The experimental results showed that at 25°C the adsorption equilibrium of TCE at concentrations from 10 mg/L to 200 mg/L could be described by the Freundlich isotherm. Adsorption could complete within 15 min. Results indicated that glucose could serve as a co-substrate and enhance TCE biodegradation through co-metabolism. The TCE biodegradation conformed to the first-order reaction kinetic, and the rate constant was 0.3212 day-1 at 25°C. In addition, results also indicated that TCE could serve as the sole substrate and be biodegraded under aerobic condition. No intermediate products such as DCE and VC were accumulated during the degradation.

Keywords: Activate Sludge, Adsorption, Biodegradation, Bioremediation, Biosorption, Chlorinated Solvents, Cometabolism, Degradation, Equilibrium, Feasibility, Field, Freundlich, Freundlich Isotherm, Isotherm, Removal, TCE, Trichloroethylene

? Xie, J.K., Yue, Q.Y., Gao, B.Y. and Li, Q.A. (2011), Adsorption kinetics and thermodynamics of anionic dyes onto sewage sludge derived activated carbon. *International Journal of Environment and Pollution*, **45** (1-3), 123-144.

Full Text: [2011\Int J Env Pol45, 123.pdf](2011/Int%20J%20Env%20Pol45,%20123.pdf)

Abstract: The adsorption kinetics and thermodynamics of two anionic dyes (Reactive Brilliant Red K-2BP and Acid Scarlet GR) on the Sewage Sludge Derived Activated Carbon (SAC) were studied by batch adsorption tests. It was found that, for Reactive Brilliant Red K-2BP, four kinetic models, i.e., the pseudo-second-order model, the modified pseudo-first-order model, the pseudo-first-order model, and the intra-particle diffusion model, all showed acceptable applicability for the adsorption process. For Acid Scarlet GR, the adsorption process conformed only to the pseudo-second-order kinetic model. The adsorption processes of two dyes on the SAC were spontaneous (ΔG0 < 0), endothermic in nature (ΔH0 > 0), and accompanied by an increase in entropy (ΔS0 > 0).

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Kinetics, Aqueous-Solution, Carbon, Dye Adsorption, Dyes, Equilibrium, Isotherm, Kinetic, Kinetic Model, Kinetics, Liquid-Phase Adsorption, Methylene-Blue Adsorption, Pore-Size Distribution, Reactive Dyes, Removal, Sac, Sewage Sludge Derived Activated Carbon, Sludge, Solid-Waste, Thermodynamics, Water

? Zhang, J., Wang, M.H. and Ho, Y.S. (2012), Bibliometric analysis of aerosol research in meteorology & atmospheric sciences. *International Journal of Environment and Pollution*, **??** (??), ??-??.

Full Text: [2012\Int J Env Pol-Zhang.pdf](2012/Int%20J%20Env%20Pol-Zhang.pdf)

Abstract: This paper used Science Citation Index Expanded (SCI-Expanded), the Thomson Reuters Web of Science database to investigate the international aerosol research in the category of meteorology & atmospheric sciences, adopting the bibliometric methods from both quantitative and qualitative perspectives. The citation profile for the overall papers from 1991 to 2009 revealed that the peak citation score appeared in the third year. Thus only 10,760 articles from 1991 to 2006 were concentrated on the analysis by scientific output and citation tracking on the basis of journal patterns; country, institute, and author research performances. Improved citation indicators PCPP (peak-year citation per publication) and RPCR (relative peak-year citation rate) based on peak-year citation counts were applied. A significant share of the citation impact was found due to a few highly cited papers, and the most frequently cited articles of each year were identified. Research collaboration was checked for monitoring the performance of institutes and countries, and summaries of the most prolific first and corresponding authors were also provided. As for author productivity distribution, Lotka’s law held good in this case. Finally, the authors discussed the imperfect nature of the indictors and proposed complementary methods for research evaluation procedures.

# Title: International Journal of Environment and Waste Management

Full Journal Title: [International Journal of Environment and Waste Management](https://www.inderscience.com/browse/index.php?journalID=75#submission)

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# Title: International Journal of Environmental Analytical Chemistry

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Subject Categories:

Chemistry, Analytical: Impact Factor

Environmental Sciences: Impact Factor 0.796, 63/126 (1999); Impact Factor 0.643, 76/127 (2000)

? Okieimen, F.E., Maya, A.O. and Oriakhi, C.O. (1988), Sorption of cadmium, lead and zinc ions on sulfur-containing chemically modified cellulosic materials. *International Journal of Environmental Analytical Chemistry*, **32** (1), 23-27.

Full Text: 1988\Int J Env Ana Che32, 23.pdf

Abstract: Cellulosic materials containing 1.7% and 3.3% thiol groups were prepared by treating maize cobs meal with thioglycollic acid solution at 29°C. Equilibrium sorption studies of cadmium, lead and zinc ions from aqueous solutions on the unmodified and thiolated cellulosic materials were carried out at 29°C using various concentrations of the dilute metal ions solutions. The metal ion binding capacity of the cellulosic material was significantly improved by the incorporated thiol groups. The influence of pH of the metal ion solutions on the uptake levels of the metal ions by the cellulosic substrate was examined.

? Hani, H. (1990), The analysis of inorganic and organic pollutants in soil with special regard to their bioavailability. *International Journal of Environmental Analytical Chemistry*, **39** (2), 197-208.

Full Text: 1990\Int J Env Ana Che39, 197.pdf

Abstract: The most important inorganic pollutants in soil are the heavy metals. Problems related to the determination of the total and soluble content are discussed. Soluble contents are of interest in connection with studies about bioavailability. Because some of the heavy metals are essential for plant growth, most of the work about bioavailability has been done in the field of plant nutrition. Much less is known about the situation in polluted soils.

It was shown that neutral salt solutions which do not really change the pH of soil during the extraction procedure are best suited to define thresholds of excess. This is in contrast to much stronger extractants like EDTA or DTPA often proposed for the analysis of soils which are deficient in trace elements.

With three sets of experiments the correlation between the contents of cadmium, copper, nickel and zinc extracted by 0.1 M NaNO3 (as an example of a neutral salt solution) and the plant response (phyto- or zootoxicity) are shown:

—pot experiments using soils which were contaminated by metal salt solutions

—pot experiments using soils from contaminated areas

—field studies in polluted areas. In these studies the aspect of heavy metal leaching was also considered.

The results were converted to indicative values in the Swiss Ordinance of Pollutants in the Soil. These indicative values derived from plant reactions were checked by the carbon mineralisation as an example of a soil microbiological process.

As it was found that organic pollutants are not easily taken up by plant roots the problem of bioavailability is much less important. However, the biodegradation and formation of metabolites has to be considered.

Keywords: Heavy Metals, Soil, Bioavailability, Plant Nutrition, Phytotoxicity, Zootoxicity, Soluble Content, Total Content

? Sharma, Y.C., Prasad, G., Rupainwar, D.C. and Panday, K.K. (1990), Inexpensive adsorption technique to remove Cr(VI) from aqueous-solutions. *International Journal of Environmental Analytical Chemistry*, **39** (4), 401-410.

Full Text: 1990\Int J Env Ana Che39, 401.pdf

Abstract: The removal of Cr(VI) from aqueous solutions by using an inexpensive adsorbent, viz. China clay has been investigated. Maximum uptake (68%) was observed at a solution concentration of 0.5×10−4 M, pH 2.5 and 30°C. The kinetics of the process have been explained using the Lagergren equation; the average rate constant of adsorption was found to be 0.148 min−1. Langmuir’s isotherm was found to be valid; the constants are calculated for different temperatures. The rate-limiting factor is the intraparticle diffusion. The coefficients of mass transfer and intraparticle diffusion are determined at different temperatures. In the present study low temperatures as well as low pH favour the uptake of Cr(VI) species.

Keywords: Inexpensive, Adsorption, China Clay, Cr(VI), Isotherm, Mass Transfer

Sahu, S. and Banerjee, D.K. (1990), Complexation properties of typical soil and peat humic acids with copper(II) and cadmium(II). *International Journal of Environmental Analytical Chemistry*, **42** (1-4), 35-44.

Full Text: 1990\Int J Env Ana Che42, 35.pdf

Abstract: Potentiometric titration with ion-selective electrodes was applied to determine characteristic parameters like the degree of complexation and the approximate molecular weight of humic acids from theoretical considerations and conditional stability constants for the complexes of Cu(II) and Cd(II) with humic acids obtained from sources such as garden soil, peat prepared by decomposing water hyacinth in soil and humified water hyacinth. Double-reciprocal and Scatchard plots were constructed to determine the conditional stability constants of the complexes formed. Cu(II) was found to have more affinity for the humic acids than Cd(II) and the stability of the metal complexes in aqueous medium was found to increase with increasing pH. The order of stability of the complexes was M-HA (soil)>M-HA (peat)>M-HA (humified water hyacinth), where M and HA represent metal and humic acids, respectively.

Keywords: Ion-Selective Electrodes, Humic Acid, Complexation, Double Reciprocal Plot, Scatchard Plot

? Sharma, Y.C., Prasad, G. and Rupainwar, D.C. (1991), Treatment of cadmium(II)-rich effluents (kinetic modeling and mass-transfer). *International Journal of Environmental Analytical Chemistry*, **45** (1), 11-18.

Full Text: 1991\Int J Env Ana Che45, 11.pdf

Abstract: Removal of Cd(II) by sorption on China clay has been investigated. Removal increased from 41.0 to 80.3% by decreasing the cadmium concentration from 2.0 × 10−4 M to 0.5 × 10−4 M at pH = 6.5 and 30°C. Kinetic modelling of the process has been done using Lagergren’s first-order rate equation. The rate of adsorption at pH = 6.5 and 30°C was found to be 5.0 × 10−2 min−1. The process of removal involves intraparticle diffusion. Mass transfer parameters have been calculated; the process is exothermic in nature. Studies with representative wastewater samples from plating units have also been undertaken.

Keywords: Effluents, Cd(II), Adsorption, Kinetic Modelling, Mass Transfer

? Demarini, D.M., Williams, R.W., Brooks, L.R. and Taylor, M.S. (1992), Use of cyanopropyl-bonded HPLC column for bioassay-directed fractionation of organic extracts from incinerator emissions. *International Journal of Environmental Analytical Chemistry*, **48** (3-4), 187-199.

Full Text: 1992\Int J Env Ana Che48, 187.pdf

Abstract: The present study has shown that cyanopropyl- (CN) bonded silica may be applicable for the fractionation by high pressure liquid chromatography (HPLC) of mass and mutagenic activity of organic extracts from some incinerator emissions. Dichloromethane-extractable organics from particles emitted by two different municipal waste incinerators and by a pilot-scale rotary kiln incinerator that was combusting polyethylene plastic were fractionated by HPLC, and the mutagenicity of the collected fractions was determined by means of a microsuspension mutagenicity assay with Salmonella TA98. The CN-bonded silica column provided high (80–100%) mass and mutagenicity recoveries for most emission extracts, and it fractionated the mutagenic activity. The results suggest that the emissions from municipal waste incinerators contain a high amount of direct-acting (-S9) mutagenic activity that is resolvable by HPLC using CN-bonded silica. Sub-fractionation of selected mutagenic HPLC fractions and subsequent analysis by gas chromatography-mass spectroscopy can be used to identify mutagenic species within complex incinerator emissions. The coupling of microsuspension bioassays to HPLC fractionation should be a useful tool for this type of analysis.

Keywords: Municipal Waste Incineration, HPLC, Complex Mixtures, Mutagrams, Mutagenicity

? Williams, R., Meares, J., Brooks, L., Watts, R. and Lemieux, P. (1994), Priority pollutant PAH analysis of incinerator emission particles using hplc and optimized fluorescence detection. *International Journal of Environmental Analytical Chemistry*, **54** (4), 299-314.

Full Text: 1994\Int J Env Ana Che54, 299.pdf

Abstract: The U.S. Environmental Protection Agency (EPA) has investigated particle emissions from the incineration of various waste feeds. Emission particles from the incineration of municipal, medical/pathological, plastic and mixed wastes were captured and subsequently tested for biological activity. An ion-exchange fractionation of emission extracts yielded a base/neutral subfraction that contained a large portion of the total biological activity found. This subfraction was known to contain nonpolar neutrals, such as polycyclic aromatic hydrocarbons (PAHs), some of which are known mutagens and carcinogens. A modified version of U.S. EPA Method 610 for PAHs was utilized to quantify 15 of the 16 priority pollutant PAHs found in emission particle extracts. Modification of HPLC Method 610 consisted of time-programmed excitation and emission wavelength selection for fluorescence detection and use of a PAH-specific, reverse-phase C18 LC column. Only the PAH acenaphthylene, which has a low fluorescence intensity, could not be quantified at the desired levels using optimized fluorescence detection. PAH detection limits from 0.001 to 0.07 ng/ml extract were obtained. Emission rates based upon extractable organic matter, stack gas, mass of combusted waste and heating potential were calculated for each PAH and incinerator.

Keywords: Municipal Incinerators, Polycyclic Aromatic Hydrocarbons (PAHs), High Performance Liquid Chromatography, Fluorescence Detection

? 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: 1995\Int J Env Ana Che58, 31.pdf

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

? Wenzel, W.W. and Wieshammer, G. (1995), Suction cup materials and their potential to bias trace-metal analyses of soil solutions: A review. *International Journal of Environmental Analytical Chemistry*, **59** (2-4), 277-290.

Full Text: 1995\Int J Env Ana Che59, 277.pdf

Abstract: We reviewed the effects of physical and chemical characteristics of filter materials on trace metal concentrations in soil solutions to evaluate their suitability for porous sections of suction cups, Among the materials described in the literature, e.g, ceramics, Al2O3, sintered Ni or glass and various plastic filters, a great variation in bubbling pressure, pore size, permeability, chemical composition and stability, CEC and trace metal dissolution/precipitation or adsorption/desorption processes was found. A low adsorption capacity suggests plastic materials are suitable, provided the bubbling pressure is high enough. All other materials have disadvantages in one or more properties, e.g. release of trace metal impurities into the soil solution, clogging of pores by precipitation of previously dissolved compounds, or sorption of trace metals.

Many reported experiments on sorption of trace metals by various materials are not relevant because of the unrealistic high metal concentrations of the test solutions. Our experiments with realistic concentrations revealed that sorption processes during the extraction may alter trace metal concentrations in soil solutions significantly.

Ceramic or Al2O3 cups are commonly used, but they adsorb appreciable amounts of trace metals. Therefore, we conclude that metal fluxes and budgets based on such data have to be interpreted with caution. To improve data comparability, detailed description of suction cup materials in the method sections of papers would be required. Moreover, more development and testing with plastic materials should be done, aimed at the optimization of both physical and chemical properties.

? Soltan, M.E., Rashed, M.N. and Taha, G.M. (2001), Heavy metal levels and adsorption capacity of Nile River sediments. *International Journal of Environmental Analytical Chemistry*, **80** (3), 167-186.

Full Text: [2001\Int J Env Ana Che80, 167.pdf](2001/Int%20J%20Env%20Ana%20Che80,%20167.pdf)

Abstract: Determination for organic carbon and analyses of Cd, Cu, Mn, Pb and Zn were carried out on extractions (exchangeable and residual phases) of the fraction smaller than 63 mum of Nile sediment samples. Also, the fraction sediment samples were treated by synthetic solutions of metals with different concentrations. According to the index of geoaccumulation, the sediment samples are unpolluted by Mn, Cu and Zn, but they have high accumulation of Cd and Ph. The elevated concentrations of Cd and Pb can be attributed to lithogenic origin and anthropogenic sources (manufactures of metal alloys, batteries, and plastics; fertilizers and pesticides; and corrosion of galvanized materials). The adsorption data suggests that the pH is the important factor in the control of metal ions adsorption onto the bed sediments. Nile sediments exhibited high capacity for sorption of heavy metals, especially Pb and Cd followed by Zn, Cd, and Mn. The adsorption of metal ions on Nile sediments follows the Langmuir and Freundlich isotherm models. Statistical analysis was applied to the results and exhibited good and interesting relationships.

Keywords: Heavy Metals, Sediment, Pollution, Adsorption, River Nile, Soil Sorption, pH, Complexation, Cadmium, Calcium, Iron

? Andrades, M.S., Rodriguez-Cruz, M.S., Sanchez-Martin, M.J. and Sanchez-Camazano, M. (2004), Effect of the modification of natural clay minerals with hexadecylpyridinium cation on the adsorption-desorption of fungicides. *International Journal of Environmental Analytical Chemistry*, **84** (1-3), 133-141.

Full Text: [2004\Int J Env Ana Che84, 133.pdf](2004/Int%20J%20Env%20Ana%20Che84,%20133.pdf)

Abstract: Clay minerals, montmorillonite (M), illite (I), kaolinite (K), muscovite (Mu), sepiolite (S) and atapulgite (A), modified with the organic cation hexadecylpyridinium (HDPY) were studied as sorbents of two fungicides of different hydrophobicity, penconazole and metalaxyl, using adsorption-desorption isotherms. The Freundlich constant values were low for the adsorption of the fungicides by natural clays and increased when the minerals were saturated with the organic cation. In HDPY-M, the K f constant increased 190-fold for the adsorption of penconazole and 67-fold for the adsorption of metalaxyl. Adsorption of the fungicides by the organo-clays at an initial concentration of 25 mug/mL was related to their organic matter content, the highest adsorption values being found in HDPY-M, HDPY-I and HDPY-A, and the increase in adsorption was greatest for the more hydrophobic fungicide penconazole. Desorption of fungicides from modified clays pointed to a high degree of stability for penconazole adsorbed by HDPY-M. In the remaining samples, the stability of this pesticide was low and the stability of metalaxyl adsorbed by all the organo-clays was also low. The results obtained point to the potential value of clay minerals modified with HDPY for immobilising pesticides with different degrees of hydrophobicity. Of special interest is the HDPY-M sample, which could be considered for use in clay barriers aimed at protection of soil and water pollution by hydrophobic pesticides.

Keywords: Adsorbents, Adsorption, Adsorption-Desorption, Barriers, Benzene, Clay, Clay Minerals, Concentration, Desorption, Fungicide, Hexadecylpyridinium, Hydrophobicity, Isotherms, Matter, Metalaxyl, Mobility, Modification, Modified, Montmorillonite, Natural, Organic, Organic Matter, Organo-Clays, Organoclays, Penconazole, Pesticide, Pesticides, Pollution, Protection, Sepiolite, Smectites, Soil, Soil Properties, Sorption, Stability, Toluene, Vineyard Soils, Water, Water Pollution, Xylene

? Liang, P., Shi, T.Q. and Li, J. (2004), Nanometer-size titanium dioxide separation/preconcentration and FAAS determination of trace Zn and Cd in water sample. *International Journal of Environmental Analytical Chemistry*, **84** (4), 315-321.

Full Text: [2004\Int J Env Ana Che84, 315.pdf](2004/Int%20J%20Env%20Ana%20Che84,%20315.pdf)

Abstract: A new method using nanoparticle TiO2 as solid-phase extractant coupled with FAAS was proposed for preconcentration and determination of trace Zn and Cd. The effects of pH, contact time, elution solution and interfering ions on the adsorption behavior of nanometer TiO2 towards Zn and Cd were investigated. Under optimum conditions, nanometer TiO2 possesses a significant capacity for the sorption of the metal ions studied. The limits of detection (3delta) of this method were 1.8 ng mL-1 of Zn and 3.0 ng mL-1 of Cd with an enrichment factor of 12.5, and relative standard deviations were 3.8% and 4.3% for Zn and Cd, respectively (c = 0.5 mug mL-1, n = 9). The proposed method was validated by the analysis of water certified reference material.

Keywords: Nanometer TiO2, Separation/Preconcentration, FAAS, Zn, Cd, Atomic-Absorption-Spectrometry, Solid-Phase Extraction, Flow-Injection System, Heavy-Metal Ions, Activated Carbon, Silica-Gel, Online Preconcentration, Emission-Spectrometry, Flame, Adsorption

? Hosseini, M.S., Hosseini-Bandegharaei, A. and Hosseini, M. (2009), Column-mode separation and pre-concentration of some heavy metal ions by solvent-impregnated resins containing quinizarin before the determination by flame atomic absorption spectrometry. *International Journal of Environmental Analytical Chemistry*, **89** (1), 35-48.

Full Text: [2009\Int J Env Ana Che89, 35.pdf](2009/Int%20J%20Env%20Ana%20Che89,%2035.pdf)

Abstract: A simultaneous separation and pre-concentration of Cd(II), Cu(II), Ni(II) and Zn(II) ions from natural water samples for subsequent flame atomic absorption spectrometric determination was proposed. The procedure is based on sorption of the metal ions at the buffering pH of 9.5, on a short column filled with Amberlite XAD-16 impregnated with the complexing agent of 1,4-dihydroxyanthraquinone (quinizarin). The determinations, without the interference of the co-existing substances, were carried out after metals elution with 5 mL of 0.5 mol L-1 HCl. A pre-concentration factor of nearly 100 was obtained using aliquots of 500 mL of the sample solution. For the optimisation of the procedure, effects of sample and eluent flow rate, eluent concentration and its volume were investigated. Beer’s law was obeyed in the range of 5.0×10-9 to 1.0×10-7 mol L-1 for Cd(II) and Zn(II), 5.0×10-8 to 1.0×10-6 mol L-1 for Cu(II) and Ni(II) ions. The relative standard deviations of the determinations were 1.87%. The limit of detections for Cd(II), Cu(II), Ni(II) and Zn(II) were found to be 1.3×10-9, 7.1×10-9, 1.3×10-8 and 1.8×10-9 mol L-1, respectively. The practical applicability of the method was confirmed using a synthetic certificated reference material and spiked natural water samples.

Keywords: Solvent-Impregnated Resins, Quinizarin, Amberlite XAD-16, Column-Mode Separation, Flame Atomic Absorption Spectrometry, Solid-Phase Extraction, Optical-Emission Spectrometry, Water Samples, Di-(2,4,4-Trimethylpentyl)Phosphinic Acid, Multielement Preconcentration, Dithiophosphoric Acid, Environmental-Samples, Chelating Polymers, Liquid-Extraction, Amberlite XAD-2

? Homem, V., Alves, A. and Santos, L. (2010), Amoxicillin removal from aqueous matrices by sorption with almond shell ashes. *International Journal of Environmental Analytical Chemistry*, **90** (14-15), 1063-1084.

Full Text: [2010\Int J Env Ana Che90, 1063.pdf](2010/Int%20J%20Env%20Ana%20Che90,%201063.pdf)

Abstract: The adsorption of the antibiotic amoxicillin at low concentration levels (mu g L-1 order) from aqueous solution on almond shell ashes has been investigated, either by kinetic or equilibrium assays. The effect of the adsorbent amount, initial concentration of the antibiotic, particle diameter (dp) and temperature were considered to evaluate the adsorption capacity of the adsorbent. The results showed that amoxicillin sorption is dependent on these four factors. The adsorption process was relatively fast and equilibrium was established in about 12 hours. The optimum parameters for an initial concentration of 450 mu g L-1 were 50 mg of adsorbent, 303 K and dp 600 mu m. A comparison of kinetic models showed that pseudo-second order kinetics provides the best correlation of the experimental data. Isotherm data adjusted better to Langmuir equation, with an adsorption capacity of 2.5±0.1 mg g-1 at 303 K. The desorption process was also evaluated (maximum efficiency of 5%). Thermodynamic parameters were calculated and the negative value of H0 and G0 showed that adsorption was exothermic and a spontaneous process.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption, Adsorption Capacity, Almond Shell, Almond Shell Ashes, Amoxicillin, Antibiotics, Aqueous Solution, β-Lactam Antibiotics, Capacity, Comparison, Concentration, Correlation, Data, Desorption, Efficiency, Equilibrium, Exothermic, Experimental, Isotherm, Kinetic, Kinetic Models, Kinetics, L1, Langmuir, Langmuir Equation, Models, Pentachlorophenol, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Removal, Residues, Risk-Assessment, Solution, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Trace Determination, Value, Veterinary, Waste-Water

? Dordio, A.V., Gonçalves, P., Texeira, D., Candeias, A.J., Castanheiro, J.E., Pinto, A.P. and Carvalho, A.J.P. (2011), Pharmaceuticals sorption behaviour in granulated cork for the selection of a support matrix for a constructed wetlands system. *International Journal of Environmental Analytical Chemistry*, **91** (7-8), 615-631.

Full Text: [2011\Int J Env Ana Che91, 615.pdf](2011/Int%20J%20Env%20Ana%20Che91,%20615.pdf)

Abstract: Biosorbents have been recently gaining importance, with an increasing number of publications on their environmental applications, especially for removal of organic pollutants from aqueous media. The aim of this work was to evaluate the sorption capacity of a biosorbent, namely granulated cork, to remove mixtures of ibuprofen (IB), carbamazepine (CB) and clofibric acid (CA) from water and wastewater. High removal efficiencies were attained for IB and CB while a less satisfactory performance was observed for CA. Simultaneous removal of the three compounds mixed in the same aqueous solution showed no significant differences in comparison to the removal of the isolated compounds in separate solutions, which indicates that no competitive sorption effects occurred at the highest concentrations tested. On the other hand, in wastewater medium the mixture of pharmaceuticals underwent a decrease in the sorbed amounts of all the three substances, probably due to the presence of dissolved organic matter which increases their solubilities. These compounds were removed in the following order of efficiencies in all the tested conditions: IB > CB > CA. The sorption kinetics were characterised by an initial fast step within the first 6 h, during which most of the removed pharmaceuticals amounts were sorbed. After the first 6 h, CA attained equilibrium concentrations whereas the sorption kinetics for IB and CB were characterised by two pseudo-second order stages, the first one up to 48 h and a slower one beyond 48 h. Shorter equilibration times and larger removed amounts of pharmaceuticals per unit weight of sorbent were observed in this study for granulated cork in comparison with a previously studied clay material (LECA). The results of this study showed the sorptive qualities of granulated cork but are only a first step in the evaluation of this material for use as support matrix in constructed wetlands designed for removal of pharmaceuticals from wastewaters.

Keywords: Adsorption, Aqueous Solution, Biosorbent, Biosorbents, Carbamazepine, Clofibric Acid, Constructed Wetlands, Equilibrium, Ibuprofen, Kinetics, Media, Personal Care Products, Pharmaceuticals, Removal, Sorption, Treatment Plants, Wastewater

# Title: International Journal of Environmental Health Research

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? Fewtrell, L., Kay, D. and MacGill, S. (2001), A review of the science behind drinking water standards for copper. *International Journal of Environmental Health Research*, **11** (2), 161-167.

Full Text: [2001\Int J Env Hea Res11, 161.pdf](2001/Int%20J%20Env%20Hea%20Res11,%20161.pdf)

Abstract: Copper is an essential element, being a vital component in several enzyme systems. Some intake, therefore, is necessary for human health. At high intakes, however, it can have toxic effects. This paper uses a quality audit framework to review the strength of the science underlying the setting of standards for copper in drinking water intended for human consumption. The two copper standards examined are the revised EU drinking water directive (98/83/EC) of 2 mg/l, based on WHO guidelines, and the USEPA treatment technique action level of 1.3 mg/l. Examination of these standards reveals that neither has a firm scientific basis, accordingly both are difficult to justify from a scientific standpoint, a situation that is worrying in both health and policy terms.

Keywords: Copper, Drinking Water, Guide Lines, Public Health, Standards, Quality Audit

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? Singanan, M., Vinodhini, S. and Abebaw, A. (2008), Biosorption of Cr(III) from aqueous solutions using indigenous biomaterials. *International Journal of Environmental Research*, **2** (2), 177-182.

Full Text: [2008\Int J Env Res2, 177.pdf](2008/Int%20J%20Env%20Res2,%20177.pdf)

Abstract: In the present study, an indigenous medicinal plant, Tridax procumbens (Asteraceae) was used as bioadsorbent for the removal of Cr(III) ions from synthetic wastewater and the method was also applied for real sample analysis. The biosorption of Cr(III) was a two-stage batch reactor process. In the first stage, raw biomaterial was used to the conversion of Cr(VI) into Cr(III). The amount of the biomaterial was 2.5g. The percent conversion was 100. The second stage involved the biosorption of Cr(III) onto the activated carbon of the biomaterial. The result indicated that, the biosorption of Cr(III) was 98.5 % at the optimum pH of 3.2. The experiments were carried out at the temperature of 25 +/- 2 degrees C. The optimum contact time was 150 min and the adsorbent dose was 2.5g of activated carbon. The effect of concentration was also studied for the design of the treatment systems and this methodology is highly suitable for the treatment of chromium containing wastewater.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dose, Adsorption, Analysis, Aqueous Solutions, Batch, Batch Reactor, Biomaterials, Biosorption, Cadmium, Carbon, Charcoal, Chromium, Chromium(III), Concentration, Design, Experiments, First, Ions, Medicinal Plants, Methodology, pH, Plant, Removal, Second Stage, Solutions, Systems, Temperature, Treatment, Tridax Procumbens, Wastewater

? Hassani, A.H., Seif, S., Javid, A.H. and Borghei, M. (2008), Comparison of adsorption process by GAC with novel formulation of coagulation - Flocculation for color removal of textile wastewater. *International Journal of Environmental Research*, **2** (3), 239-248.

Full Text: [2008\Int J Env Res2, 239.pdf](2008/Int%20J%20Env%20Res2,%20239.pdf)

Abstract: This study evaluates the effectiveness of adsorption process by Granular Activated Carbon (GAC) compared with a novel formulation of coagulation - flocculation process for dye removal from textile wastewater. In this regard, acidic, reactive, disperse and direct red dye are used to prepare the synthetic dye. Dominant wave length for each dye is determined by spectrophotometeric method. Using GAC as adsorbent, equilibrium time and adsorption isotherm of each dye are determined with aid of spectrophotometric method. The results show that GAC can not remove dispersed red dye. Acidic red, direct red and reactive red of 5 mg/L concentration are removed by GAC up to %90, %88 and %43 in 30, 60 and 120 min. (equilibrium time) respectively. Dyes of 50 mg/L concentration are removed up to %93, %30 and %51 in 15, 90 and 150 min. respectively. Adsorption obeys Freundlich isotherm for acidic red, BET isotherm for direct red and Langmuir isotherm for reactive red. This investigation presents a novel formulation of coagulation - flocculation for color removal from textile dye solutions and illustrates its efficiency. Novel formulation of coagulation - flocculation remove direct red, reactive red and disperse red of 5 mg/L concentration respectively up to %93, %91.3 and %57.1. Also the mentioned dyes of 5 0 mg/L are removed respectively up to %90.8, %91.9 and %70.1.

Keywords: Adsorbent, Adsorption, Adsorption Isotherm, Bet, Carbon, Carbons, Coagulation, Color Removal, Concentration, Dye, Dye Removal, Dyes, Effectiveness, Efficiency, Equilibrium, Flocculation, Formulation, Freundlich, Freundlich Isotherm, GAC, Investigation, Isotherm, Jar Test, Langmuir, Langmuir Isotherm, Length, Removal, Solutions, Textile Dye, Textile Wastewater, Wastewater

? Labidi, N.S. (2008), Removal of mercury from aqueous solutions by waste brick. *International Journal of Environmental Research*, **2** (3), 275-278.

Full Text: [2008\Int J Env Res2, 275.pdf](2008/Int%20J%20Env%20Res2,%20275.pdf)

Abstract: Mercury is one of the most toxic heavy metals present in aquatic systems, exhibiting a complex behaviour in the environment, where it may persist for decades after the source of pollution is stopped. Hence, it is important develop new techniques for its removal from the aquatic systems. In this context, a particularly promising line of research is the use of new materials capable of up taking mercury from aqueous systems. A new sorbent system for removing mercury(II) in presence of oleic acid, from aqueous solutions has been investigated. This new sorbent is waste crushed brick, obtained from local industries. Variables of the system include solution pH, sorbent dose and contact time. The adsorption isotherm data follow the Langrnuir equation in which characteristic parameters was calculated. Waste crushed brick has a maximum mercury(II) removal capacity (87mg/g).

Keywords: Adsorption, Hg(II), Crushed Brick, Oleic Acid, Langmuir Isotherm, Heavy-Metals, Ions, Equilibrium, Kinetics, Adsorption, Copper

? Murugesan, A.G., Maheswari, S. and Bagirath, G. (2008), Biosorption of cadmium by live and immobilized cells of *Spirulina platensis*. *International Journal of Environmental Research*, **2** (3), 307-312.

Full Text: [2008\Int J Env Res2, 307.pdf](2008/Int%20J%20Env%20Res2,%20307.pdf)

Abstract: Spirulina platensis, a cyanobacterium of economic important was studied for the tolerance to cadmium. The bioassay studies showed the EC50 value to be 1.53 mg/g. The cyanobacterium was very sensitive to low metal concentration and the productivity was also reduced. The chlorophyll pigments reduced with decreasing the algal biomass. The algal survival rate showed a marked reduction in their survival rate from 98% in the control medium to >50% at 1.6 mg/L cadmium and no growth in the culture exposed to cadmium concentration of 1.9 mg/L. The Biosorption studies showed that the algae had a great potential for adsorbing the heavy metal on to the cell. A maximum uptake of 44.56 mg/g was obtained in living cells of Spirulina platensis suggesting the possibility of the algae to be a good biosorbent. Culturing the algae in low metal concentrations can be utilized as potential tertiary treatment for metal containing effluent. The immobilized cell of Spirulina platensis was able to be more effective in absorbing the metal 47.89 mg/g to the cell. The results of the study indicate the potentiality of the algae to be a possible agent for removal of heavy metals from aqueous solutions.

Keywords: Algae, Aqueous Solutions, Bioaccumulation, Bioassay, Biomass, Biosorbent, Biosorption, Cadmium, Chlorophyll, Concentration, Control, Culture, Economic, Growth, Heavy Metal, Heavy Metals, Heavy-Metals, Immobilized, Immobilized Cells, Living, Metal, Metals, Potential, Productivity, Reduction, Removal, Solutions, Spirulina Platensis, Sub Lethal, Survival, Survival Rate, Tolerance, Toxicity, Treatment, Uptake, Value

? Nagda, G.K. and Ghole, V.S. (2008), Utilization of lignocellulosic waste from bidi industry for removal of dye from aqueous solution. *International Journal of Environmental Research*, **2** (4), 385-390.

Full Text: [2008\Int J Env Res2, 385.pdf](2008/Int%20J%20Env%20Res2,%20385.pdf)

Abstract: A new, local agro-industrial waste was valorized by chemical treatment and tested for its ability to remove cationic dye from aqueous solution. Tendu (Diospyros melanoxylon) leaves refuse, a solid waste from bidi industry which caused disposal problem, was studied as a biosorbent. Raw tendu waste (TLR), along with sulfuric acid carbonized tendu waste (TLR-CM) and tendu waste treated with dilute sulfuric acid (TLR-2N) were utilized as sorbent for uptake of crystal violet from aqueous solutions. Adsorption studies were carried out at various dye concentrations and contact times. It followed the pseudo-second-order kinetics and followed the Langmuir adsorption isotherm. Interestingly, milder acid treatment of the tendu waste enhanced biosorption, whereas drastic acid carbonization of tendu waste resulted in reduced adsorption of dye. The maximum adsorption capacities for crystal violet for TLR-2N, TLR and TLR-CM are 67.57,42.92 and 22.47 mg/g respectively Commercial activated carbon had maximum adsorption capacity for crystal violet of 151.52 mg/g. Thus a renewable solid waste with mild acid treatment can offer a cost effective alternative to activated carbon.

Keywords: Acid Treatment, Acid-Treatment, Activated Carbon, Adsorption, Adsorption Capacities, Adsorption Capacity, Adsorption Isotherm, Alternative, Aqueous Solution, Aqueous Solutions, Biosorbent, Biosorption, Capacity, Carbon, Carbonization, Cationic Dye, Chemical, Cost, Cost-Effective, Crystal Violet, Diospyros Melanoxylon, Disposal, Dye, Isotherm, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Local, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Removal, Solid Tendu Waste, Solid Waste, Solution, Solutions, Sorbent, Sorption, Treatment, Uptake, Waste

? Lori, J.A., Lawal, A.O. and Ekanem, E.J. (2008), Active carbons from chemically mediated pyrolysis of agricultural wastes: Application in simultaneous removal of binary mixture of benzene and toluene from water. *International Journal of Environmental Research*, **2** (4), 411-418.

Full Text: [2008\Int J Env Res2, 411.pdf](2008/Int%20J%20Env%20Res2,%20411.pdf)

Abstract: Active carbons were produced from bagasse, millet and sorghum straws by chemical activation with H3PO4. Carbon precursors with particle size of 1180 mu m were used, in order to overcome difficulties caused by low density and high ash content. The influence of preparation conditions (temperature, residence time, and acid impregnation ratio) on the yield of the active carbons was examined. The impregnation ration which was controlled by varying the proportion of H3PO4 used for the activation had a strong influence on the yields of the carbons. The pyrolysis temperature was varied in the range 100-450 degrees C, but equilibrium yields of the active carbons were highest at 450C with optimum impregnation ratio of 13.6. The potential of the active carbons as efficient and economical means of removing mixture of aromatic hydrocarbon contaminants from water was indicated by the complete removal of objectionable odor from contaminated water samples containing 35.1348 mg/cm(3) benzene and 34.8534 mg/cm(3). Toluene, which are known carcinogens. Spectrophotometric determinations of the two solutes in the remediate water samples indicated slow but steady adsorption of the benzene/toluene mixture on the active carbons.

Keywords: Activation, Active Carbon, Adsorption, Agricultural, Agricultural Waste, Agricultural Wastes, Bagasse, Benzene, Binary Mixture, Carbon, Chemical, Chemical Activation, Contaminants, Equilibrium, Hydrocarbon, Impregnation, Particle Size, Phosphoric-Acid, Potential, Preparation, Pyrolysis, Removal, Residence Time, Shells, Size, Temperature, Toluene, Water, Water Samples

? Binupriya, A.R., Sathishkumar, M., Jung, S.H., Song, S.H. and Yun, S.I. (2009), A novel method in utilization of bokbunja seed wastes from wineries in liquid-phase sequestration of Reactive Blue 4. *International Journal of Environmental Research*, **3** (1), 1-12.

Full Text: [2009\Int J Env Res3, 1.pdf](2009/Int%20J%20Env%20Res3,%201.pdf)

Abstract: Bokbunja seed wastes from a wine manufacturing industry were used to prepare carbon for the. ea purpose of using it as an adsorbent for the removal of Reactive Blue 4 from aqueous solutions. A part of prepared carbon was treated with n-hexane to remove the seed oil present in large amounts in Bokbunja seeds. It was found that the hexane treated carbon was more efficient in removing the dye from aqueous solutions. Optimization-of process parameters showed that pH 2 and contact time of 120 min was favorable for maximum adsorption. Langmuir and Khan isotherm models were applied to comprehend the adsorption process, Kinetic data showed that pseudo-first order model was a better fit than the pseudo-second order model. Alkaline pH favored desorption. Among the various desorption medium tested, acetone and ethanol showed promising results thus enabling the reuse of the carbon for next adsorption cycle. The study Justifies the efforts to minimize the wastes by firstly using a winery waste as adsorbent and later reusing the same for the next cycle of adsorption in addition to recycling the desorption medium while simultaneously recovering the adsorbed dyes.

Keywords: Acetone, Activated Carbon, Adsorbent, Adsorption, Agricultural Solid-Waste, Aqueous Solutions, Aqueous-Solution, Aspergillus-Niger, Bagasse-Fly-Ash, Basic-Dyes, Bokbunja Seeds, Carbon, Coir Pith, Congo-Red, Data, Desorption, Dye, Dyes, Equilibrium Isotherm Analyses, Ethanol, Isotherm, Kinetic, Kinetics, Langmuir, Manufacturing, Model, Models, Mycelial Biomass, Ph, Pseudo First Order, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Purpose, Reactive Blue, Reactive Blue 4, Recycling, Removal, Reuse, Solutions, Waste

? Salim, M. and Munekage, Y. (2009), Removal of arsenic from aqueous solution using silica ceramic: Adsorption kinetics and equilibrium studies. *International Journal of Environmental Research*, **3** (1), 13-22.

Full Text: [2009\Int J Env Res3, 13.pdf](2009/Int%20J%20Env%20Res3,%2013.pdf)

Abstract: The removal of As(III) ions from aqueous solutions has been investigated using silica ceramic under different experimental conditions of initial arsenite concentration, adsorbent dose, temperature and pH. Better removal was obtained at temperature 25 degrees C and pH 7.5. The adsorption data have been explained in terms of Langmuir and Freundlich equations, The sorption kinetics was tested for the pseudo-first order, pseudo-second order reaction and intra-particle diffusion, at different experimental conditions. The results revealed that the adsorptions of As(III) onto silica ceramic, which were found to well, fit by the Freundlich isotherm. The rate constants of sorption for kinetic models were calculated and good correlation coefficients (R-2 > 0.9974) obtained for the pseudosecond order kinetic model. The result indicates that under the optimum conditions, the maximum adsorption value (1.7886 mg/g) comply that the silica ceramic is an effective adsorbent for arsenite.

Keywords: Adsorbent, Adsorbent Dose, Adsorption, Aqueous Solutions, Arsenic, Arsenite, As(Iii), Cement, Ceramic, Concentration, Correlation, Data, Diffusion, Drinking-Water, Equilibrium, Experimental, Freundlich, Freundlich Isotherm, Intra-Particle Diffusion, Intraparticle Diffusion, Ions, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Langmuir, Model, Models, Oxide-Coated Sand, Ph, Pseudo First Order, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Rate Constants, Red Mud, Removal, Silica, Silica Ceramic, Solutions, Sorption, Sorption Kinetics, Temperature, Value

? Shetty, R. and Rajkumar, S. (2009), Biosorption of Cu(II) by metal resistant *Pseudomonas* sp. *International Journal of Environmental Research*, **3** (1), 121-128.

Full Text: [2009\Int J Env Res3, 121.pdf](2009/Int%20J%20Env%20Res3,%20121.pdf)

Abstract: Bioremediation of heavy metals remains a major challenge in environmental biotechnology. Biosorption is a novel technique for decreasing metal ion content in the waste water. Biosorption experiments for Cu(II) were investigated in this study using bacteria isolated from the industrial effluent. The results showed that the dead cells of Pseudomonas sp. were an efficient adsorbent of Cu(II). For analysis, Langmuir and Freundlich adsorption isotherm were considered. Both model fitted to the experimental data however the Langmuir model fitted the experimental data better than the Freundlich model for copper. Adsorption was influenced by various parameters, such as the initial metal concentration, pH, and contact time etc. Studies pertaining to the assessment of the best adsorption parameters and quantitative analysis of metal uptake revealed that maximum biosorption for Cu (II) obtained was 74.2% at pH 7. Citric acid was used as desorbing agents in order to recover heavy metal ions from the adsorbent.

Keywords: Adsorbent, Adsorption, Adsorption Isotherm, Analysis, Assessment, Bacteria, Biosorption, Biotechnology, Cadmium, Challenge, Chromium(VI), Citric Acid, Concentration, Copper, Cu, Data, Desorption, Environmental, Experimental, Experiments, Freundlich, Freundlich Adsorption Isotherm, Freundlich Model, Heavy Metal, Heavy Metal Ions, Heavy Metals, Industrial Effluent, Industrial Waste-Water, Ions, Isotherm, Langmuir, Langmuir Model, Lead, Metal, Metal Ions, Metal Uptake, Metals, Model, pH, Pseudomonas, Quantitative Analysis, Removal, Soil, Uptake, Waste, Waste Water, Water, Zinc

? Sahmoune, M.N., Louhab, K. and Boukhiar, A. (2009), Biosorption of Cr(III) from aqueous solutions using bacterium biomass *Streptomyces rimosus*. *International Journal of Environmental Research*, **3** (2), 229-238.

Full Text: [2009\Int J Env Res3, 229.pdf](2009/Int%20J%20Env%20Res3,%20229.pdf)

Abstract: In the present investigation, dead bacterium biomass Streptonlyces rimosus was used as an inexpensive and efficient biosorbent for Cr(III) removal from aqueous solution. The bacterial biomass was treated with 0.1 M NaOH. Sorption level of 65 mg/g was observed at pH 4.8 while precipitation effect augmented this value at higher pH range. Chromium desorption increased with decreasing desorption agents pH (including HCl and H2SO4) to a maximum value of 95% at approximately zero pH. Langmuir, Freundlich and Temkin models were applied to describe the biosorption isotherm of the metal ions by Streplomyces rimosus biomass. Langmuir model fitted the equilibrium data better than the Freundlich isotherm. Maximum metal uptake q(max) was observed as 83.33 mg g-1 indicate good biosorbents than other biomass. Experimental data were also tested in terms of biosorption kinetics using fractional power, Elovich, pseudo-first order and pseudo-second order rate expressions. The results showed that the biosorption processes followed well pseudo-second-order kinetics and the intra-particle diffusion is not the rate-limiting step for the whole reaction.

Keywords: Adsorption, Biosorption, Chromium(III), Cr(III), Equilibrium, Fungal Biomass, Heavy-Metals, Isotherm, Isotherm Models, Isotherms, Kinetics, Regression-Analysis, Removal, Sorption, *Streptomyces Rimosus*, Waste-Water

? Rahmani, K., Mahvi, A.H., Vaezi, F., Mesdaghinia, A.R., Nabizade, R. and Nazmara, S. (2009), Bioremoval of lead by use of waste activated sludge. *International Journal of Environmental Research*, **3** (3), 471-476.

Full Text: [2009\Int J Env Res3, 471.pdf](2009/Int%20J%20Env%20Res3,%20471.pdf)

Abstract: Biological removal of lead was observed in this study during treatment of synthetic solutions of this heavy metal by a sample of waste activated sludge (WAS) having MLSS concentration of 10000 mg/L. The objective was determining the capability of WAS in removal of lead in three different conditions of treatment: without any aeration and feeding, by simultaneous aeration and feeding and by aeration without feeding. Besides, the effect of initial metal concentration and contact time in these treatment stages were determined. Results showed that the efficiency of lead removal was reduced by increasing the initial metal concentration, but the changes of contact time had resulted in different responses depending to the test condition. Moreover, it was found that the effects of aeration and feeding in increasing the efficiency of treatment were more pronounced for the stage of treating lower concentrations of lead. The maximum removal of lead in the first step (without aeration and feeding) was 55.2% in contact time of 75 minutes, in the second step (without feeding and by 12 hours aeration) 63.3% and third step it was 94.2% in contact time of 48 hours. The initial lead concentration in these experiments was 5 mg/L.

Keywords: Activated Sludge, Adsorption, Adsorption Process, Aqueous-Solutions, Biomass, Cadmium Removal, Cd(II), Changes, Concentration, Efficiency, Effluents, Experiments, Feeding, First, Heavy Metal, Heavy-Metal Biosorption, Industrial Wastewaters, Ions, Lead, Lead Removal, Metal, Reactors, Recovery, Removal, Sludge, Solutions, Treatment, Waste, Waste Activated Sludge, Wastewater Treatment

? Dabhade, M.A., Saidutta, M.B. and Murthy, D.V.R. (2009), Adsorption of phenol on granular activated carbon from nutrient medium: Equilibrium and kinetic study. *International Journal of Environmental Research*, **3** (4), 557-568.

Full Text: [2009\Int J Env Res3, 557.pdf](2009/Int%20J%20Env%20Res3,%20557.pdf)

Abstract: This paper presents the adsorption of phenol on granular activated carbon (GAC) from nutrient medium suitable for microorganisms’ growth and also the subsequent biodegradation. Two parameter Langmuir and Freundlich adsorption isotherm models were studied using large range of phenol concentration (50-1000 mg/L). In low range of phenol concentration (50-300 mg/L), correlation coefficient, normalized deviation g% and separation factor were 0.9989, 2.18% and 0.38-0.78 respectively, while for higher concentration range (400-1000 mg/L), the corresponding values were 0.9719, 1.9% and 0.45-0.67. Freundlich isotherm gave correlation coefficient of 0.9984, 1/n. value of 0.7269 and normalized deviation of 4.55%. Comparison based on R-2, adjusted R-2, normalized deviation and root mean square deviation (RMSD) showed that the Redke-Prausnitz isotherm model gives better prediction compared to other models. Adsorption of phenol follows pseudo second order kinetics with correlation coefficient closer to one. Biodegradation study using immobilized cells of Nocardia hydrocarbonoxydans on GAC showed that, biodegradation begins well before GAC reaches the saturation period.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherm, Adsorption Isotherm Models, Aqueous-Solutions, Biodegradation, Bioreactor, Carbon, Concentration, Correlation, Correlation Coefficient, Degradation, Equilibrium, Freundlich, Freundlich Adsorption Isotherm, Freundlich Isotherm, GAC, Granular Activated Carbon, Growth, Immobilization, Immobilized, Immobilized Cells, Isotherm, Isotherm Model, Isotherm Models, Kinetic, Kinetics, Langmuir, Microorganisms, Model, Models, Normalized Deviation, Nutrient, Performance, Phenol, Phenol Biodegradation, Prediction, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Removal, Saturation, Second Order, Second Order Kinetics, Second-Order, Separation, Separation Factor, Value, Waste-Water

? Gaur, N. and Dhankhar, R. (2009), Removal of Zn2+ ions from aqueous solution using Anabaena variabilis: Equilibrium and kinetic studies. *International Journal of Environmental Research*, **3** (4), 605-616.

Full Text: [2009\Int J Env Res3, 605.pdf](2009/Int%20J%20Env%20Res3,%20605.pdf)

Abstract: Zinc ions are present in different types of industrial effluents, being responsible for environmental pollution. Biosorption is a process in which solids of natural origin are employed for binding heavy metals. It is a promising alternative method to treat heavy metal wastes mainly because of high metal. binding capacity. The effect of some important parameters on sorption capacity of cyanobacterial biosorbent for zinc uptake was studied. The optimum conditions pH, time, initial ion concentration, adsorbent dose; were found to be 8,90 mins, 100 ppm and 1gm/100mL respectively Immobilization of biomass was done in calcium alginate and agar matrices for reuse of biosorbent. Freundlich and Langmuir isotherms were applied to equilibrium data of zinc ions biosorption and Freundlich isotherm was found to fit the data. The maximum adsorption capacity was 71.42 mg/g for A. variabilis. The value of value of K-f and n were ranged from 0.4458 to 2.797 and 0.7726 to 2.797 for the cyanobacterial biosorbents. 0.1 M EDTA was used as an eluant and the biosorbent was reused up to five biosorption desorption cycles and percentage desorption of zinc ions was 93 to 84 from first to fifth cycle for the cyanobacterial biosorbents. Fourier transform infra-red analysis of algae with and without biosorption revealed the presence of carboxyl, hydroxyl, amino, amide and imine groups, which were responsible for biosorption of Zn2+ ions. The rate law for a pseudo-second-order model fits the experimental data with a very high correlation coefficient and it was greater than 0.9771.

Keywords: Adsorbent, Adsorbent Dose, Adsorption, Adsorption Capacity, Algae, Alginate, Alternative, Anabaena Variabilis, Analysis, Aqueous Solution, Binding, Biomass, Biosorbent, Biosorbents, Biosorption, Biosorption, Biosorption-Desorption, Cadmium, Calcium, Calcium Alginate, Capacity, Concentration, Correlation, Correlation Coefficient, Data, Desorption, EDTA, Effluents, Environmental, Environmental Pollution, Equilibrium, Experimental, First, Fourier Transform Infra-Red, Freundlich, Freundlich Isotherm, Heavy Metal, Heavy Metals, Heavy-Metals, Immobilization, Ions, Isotherm, Isotherms, Kinetic, Kinetic Studies, Langmuir, Langmuir Isotherms, Law, Lead, Metal, Metals, Model, Natural, Origin, pH, Pollution, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Rate Law, Removal, Reuse, Soils, Solution, Sorption, Sorption Capacity, Uptake, Value, Waste-Water, Zinc, Zn2+ Ions

? Gong, R., Li, N., Cai, W., Liu, Y. and Jiang, J. (2010), α-ketoglutaric acid-modified chitosan resin as sorbent for enhancing Methylene blue removal from aqueous solutions. *International Journal of Environmental Research*, **4** (1), 27-32.

Full Text: [2010\Int J Env Res4, 27.pdf](2010/Int%20J%20Env%20Res4,%2027.pdf)

Abstract: In this study, cross linked chitosan resin (CCR) was prepared by cross linking chitosan with glutaraldehyde, and then α-ketoglutaric acid-modified chitosan resin (KCR) was obtained by modifying CCR with alpha-ketoglutaric acid. The sorption behavior of methylene blue (NIB) on KCR and CCR from aqueous solution was investigated. The effect of various experimental parameters (e.g. initial pH, sorbent dose, dye concentration, contact time, and temperature) was examined. The maximal MB sorption ratio on KCR and CCR was respectively reached beyond pH 8 and at pH 8. The MB removal ratio on KCR and CCR increased with increasing sorbent dose but decreased with increasing dye concentration. The isothermal data of MB sorbed on KCR and CCR followed the Langmuir model. The MB sorption process could be described by the pseudo-second-order kinetic model. The thermodynamic study indicated that the MB sorption process was spontaneous and exothermic.

Keywords: Adsorbent, Adsorption Process, Alpha-Ketoglutaric Acid-Modified Chitosan Resin, Aqueous Solution, Behavior, Cationic Dyes, Chitosan, Concentration, Congo Red, Cross-Linked, Data, Dye, Dye Waste-Water, Exothermic, Experimental, Glutaraldehyde, Isothermal, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Model, MB, Methylene Blue, Model, pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Resin, Solution, Sorbent, Sorbent Dose, Sorption, Sorption Process, Temperature, Thermodynamic, Thermodynamics

? Nouri, J., Mahvi, A.H. and Bazrafshan, E. (2010), Application of electrocoagulation process in removal of zinc and copper from aqueous solutions by aluminum electrodes. *International Journal of Environmental Research*, **4** (2), 201-208.

Full Text: [2010\Int J Env Res4, 201.pdf](2010/Int%20J%20Env%20Res4,%20201.pdf)

Abstract: nu In this study, the performance of electro-coagulation in combination with aluminum sacrificial anode, in removal of zinc and copper has been investigated. Several parameters, such as pollutant concentration, pH, electrical potential, COD, turbidity and contact time were studied to achieve a higher removal capacity. Variable concentrations (5-50-500 ppm) of zinc and copper solutions were prepared. In order to follow the progress of the treatment, samples of 25mL were taken at 15 min intervals up to 60 min and then filtered with 0.45 (sic) diameter to eliminate sludge formed during electrolysis. The varying pH of the initial solution was also studied to measure their effects on the zinc and copper removal efficiency. Results obtained with synthetic wastewater revealed that the most effective removal capacities of studied metals could be achieved at 40 V electrical potential. In addition, the increase of electrical potential, in the range of 20-40 V, enhanced the treatment rate without affecting the charge loading required to reduce metal ion concentrations under the admissible legal levels. The process was successfully applied to the treatment of an electroplating wastewater where an effective reduction of zinc and copper concentration under legal limits was obtained, just after 15-60 min. Moreover, it can be concluded that the electro-coagulation process has the potential to be utilized for the cost-effective removal of heavy metals from water and wastewater.

Keywords: Aluminum, Aluminum Electrodes, Biosorption, Cadmium, Capacity, Charge, Cod, Concentration, Copper, Copper Removal, Cost-Effective, Efficiency, Electro-Coagulation, Electrocoagulation, Electrolysis, Flocculation, Fresh-Water, Heavy Metals, Heavy-Metals, Hexavalent Chromium, Hollow-Fiber Membrane, Intervals, Iron, Lead, Legal, Loading, Measure, Metal, Metals, Performance, Ph, Potential, Progress, Reduction, Removal, Removal Efficiency, Sludge, Solution, Solutions, Treatment, Turbidity, Waste-Water, Wastewater, Water, Zinc, Zinc and Copper Removal

? Resmi, G., Thampi, S.G. and Chandrakaran, S. (2010), *Brevundimonas vesicularis*: A novel bio-sorbent for removal of lead from wastewater. *International Journal of Environmental Research*, **4** (2), 281-288.

Full Text: [2010\Int J Env Res4, 281.pdf](2010/Int%20J%20Env%20Res4,%20281.pdf)

Abstract: In this study, a bacterial species which could remove lead from wastewater was isolated from lead contaminated soil prepared in the laboratory. Based on the biochemical and morphological characterization the bacteria were identified as Brevundimonas vesicularis. The biosorption potentiel of powdered dry biomass of B. Vesicularis was investigated by batch adsorption experiments. It was found that, the bio-sorption capacities were significantly affected by the pH and initial concentration of the solution, bio-sorbent dosage and contact time. Batch and isothermal studies were carried out at optimum pH of 4. The rate of bio-sorption was found to be fast during the initial 10min and it reached equilibrium by 60min. Langmuir isotherm model was suitable for describing the bio-sorption of lead by B. Vesicularis. The results indicated that, the dry biomass of B. Vesicularis is suitable as an efficient bio-sorbent for the removal of lead from wastewater.

Keywords: Activated Carbon, Adsorption, Aqueous-Solutions, Bacteria, Bacterial Species, Batch, Batch Adsorption, Bio-Sorption, Biomass, Biomass, Biosorbent, Biosorption, Characterization, Chromium(III), Concentration, Copper(II), Dry Biomass, Equilibrium, Experiments, Heavy Metal, Heavy-Metals, Isotherm, Isotherm Model, Isothermal, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Lead, Model, pH, Recovery, Removal, Soil, Solution, Species, Wastewater

? Dhir, B. and Kumar, R. (2010), Adsorption of heavy metals by *Salvinia* biomass and agricultural residues. *International Journal of Environmental Research*, **4** (3), 427-432.

Full Text: [2010\Int J Env Res4, 427.pdf](2010/Int%20J%20Env%20Res4,%20427.pdf)

Abstract: Batch adsorption experiments were performed to study adsorption potential of agricultural residues viz, rice straw, wheat straw and Salvinia plant biomass for removal of heavy metals such as Cr, Ni, and Cd. Plant materials were used in different combinations. Heavy metal removal efficiency was more at low metal concentration (35 mg/L). Salvinia biomass possessed higher efficiency for removing heavy metals such as Cr, Ni and Cd followed by a combination where three materials (rice straw, wheat straw, Salvinia biomass) were taken together in comparison to other combinations. The adsorption data fitted in Langmuir and Freundlich isotherm models. The present investigations revealed that agricultural residues such as rice straw and wheat straw along with Salvinia biomass can serve as low-cost alternative for removal of heavy metals from wastewaters.

Keywords: Activated Carbon, Adsorption, Agricultural, Alternative, Aqueous-Solutions, Batch Adsorption, Biomass, Cd, Ceratophyllum-Demersum, Comparison, Concentration, Data, Efficiency, Experiments, Freundlich, Freundlich Isotherm, Heavy Metal, Heavy Metal Removal, Heavy Metals, Investigations, Ions, Isotherm, Langmuir, Lead, Low Cost, Metal, Metals, Models, Nonliving Biomass, Plant, Plant Biomass, Potential, Removal, Removal Efficiency, Rice, Rice Straw, Salvinia, Sawdust, Straw, Waste-Water, Wastewaters, Wheat Bran, Wheat Straw

? Tashauoei, H.R., Attar, H.M., Kamali, M., Amin, M.M. and Aein, M.N. (2010), Removal of hexavalent chromium(VI) from aqueous solutions using surface modified Nanozeolite A. *International Journal of Environmental Research*, **4** (3), 491-500.

Full Text: [2010\Int J Env Res4, 491.pdf](2010/Int%20J%20Env%20Res4,%20491.pdf)

Abstract: Chromium(VI) adsorption behavior and capacity by surface modified nanozeolite A has been investigated. Surface modification was performed and the morphology of modified and unmodified nanozeolite was studied using Scanning Electron Microscope (SEM) and Transmission Electron Microscope (TEM). Adsorption isotherms were studied under different conditions (pH, adsorbent dose, adsorbate concentration and interaction time). The Langmuir monolayer adsorption capacity (q(m)) was found to be 14.16 mg Cr(VI) per gram at pH = 3.0 at room temperature. Chromate adsorption on surface modified nanozeolite A was found to be inversely proportional to the pH. Effect of competitive ions was studied and it was found that there is no significant competition between chromate adsorption and presence of competitive ions. Results revealed that Langmuir model is in good agreement with experimental re-sults. Results of examinations on a polluted natural sample showed that surface modified nanozeolite A could reduce chromium (VI) concentration to acceptable criteria. Based on results, surface modified nanozeolite A is an effective sorbent for removing chromate from aquatic solution and the adsorption ability is enhanced by surface modification.

Keywords: Activated Carbons, Adsorbent, Adsorbent Dose, Adsorption, Adsorption Behavior, Adsorption Capacity, Adsorption Isotherm, Adsorption Isotherms, Behavior, Birjand, Cadmium, Capacity, Chromate, Chromium, Competition, Competitive, Concentration, Cr(VI), Criteria, Experimental, Heavy-Metals, Interaction, Ion-Exchange, Ions, Isotherms, Langmuir, Langmuir Model, Mexican Clinoptilolite, Model, Modification, Modified, Modified Zeolite, Monolayer, Morphology, Nanozeolite A, Natural, Natural Clinoptilolite, pH, Removal, Room Temperature, SEM, Solution, Sorbent, Surface, Surface Modification, Synthetic Zeolites, TEM, Temperature, Waste-Water

? Smaranda, C., Gavrilescu, M. and Bulgariu, D. (2011), Studies on sorption of Congo red from aqueous solution onto soil. *International Journal of Environmental Research*, **5** (1), 177-188.

Full Text: [2011\Int J Env Res5, 177.pdf](2011/Int%20J%20Env%20Res5,%20177.pdf)

Abstract: The aim of this study was to investigate the Congo red sorption on soil from the region of Iasi (NE of Romania). The effects of contact time, temperature, sorbent dose and initial dye concentration on soil sorption were investigated. The results show that the amount adsorbed of Congo red on soil increase with increasing dye concentration, temperature and contact time. The experimental data were analyzed using the pseudo-first order Lagergren model, the pseudo-second order model and intraparticle diffusion model. Experimental results show that the dye sorption process follows the pseudo-second-order kinetic model. Intraparticle diffusion studies indicated that the adsorption mechanism was not exclusively controlled by the diffusion step. The equilibrium sorption data were interpreted using Langmuir, Freundlich and Tempkin models and the results were best described by Freundlich isotherm. It was indicative of the heterogeneity of the sorption sites on the soil particle. Thermodynamic analysis of the Congo red sorption on studied soil indicates that the system is spontaneous and exothermic in nature.

Keywords: Activated Carbon, Adsorption, Congo Red, Dye, Equilibrium, Freundlich and Tempkin Isotherms, Heavy-Metals, Intraparticle Diffusion, Kinetic Model, Kinetic Models, Langmuir, Process Design, Removal, Rice Husk, Sorption, Sorption Thermodynamic, Surface Soils, Thermodynamic, Waste-Water

? Heidari, M., Moattar, F., Naseri, S., Samadi, M.T. and Khorasani, N. (2011), Evaluation of aluminum-coated pumice as a potential Arsenic(V) adsorbent from water resources. *International Journal of Environmental Research*, **5** (2), 447-456.

Full Text: [2011\Int J Env Res5, 447.pdf](2011/Int%20J%20Env%20Res5,%20447.pdf)

Abstract: In this study, the removal of As(V) from water resources by using aluminum-coated pumice as a new adsorbent was assessed. The features of the adsorbent coating layer were observed by X-ray diffraction (XRD) and Scanning Electron Microscopy (SEM).The effects of various parameters such as adsorbent doses, pH, contact time, arsenate initial concentration and interfering ions in arsenic adsorption and achieving high removal efficiency were studied. The results showed that the adsorption of As(V) was extremely influenced by the phosphate interfering ions It was also defined that more than 98% of As(V) was removed by 10 g/L of the adsorbent with initial As(V) concentration of 250 mu g/L at pH=7 and in 160 minutes. The adsorption equilibriums were analyzed by Langmuir and Freundlich isotherm models. Such equilibriums showed that the adsorption data was well fitted with Freundlich isotherm model (R-2 > 0.99). The data achieved from the kinetic studies were processed by kinetic models of pseudo-first-order and pseudo-second-order. The results indicated that the pseudo-second-order model could describe the adsorption of As(V) by pumice coated with alum (Rb-2 > 0.92). According to achieved results, it was defined that aluminum-coated pumice not only was an inexpensive absorbent, but also a quite effective factor in removal of As(V) from water resources.

Keywords: Activated Carbon, Adsorption, Aluminum-Coated Pumice, Aqueous-Solutions, Arsenic, As(V), Drinking-Water, Electrocoagulation, Equilibrium, Freundlich, Freundlich Isotherm, Iron-Oxide, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, pH, Removal, Sorption, Water Resources

? Dekhil, A.B., Hannachi, Y., Ghorbel, A. and Boubaker, T. (2011), Removal of lead and cadmium ions from aqueous solutions using dried marine green macroalga (*Caulerpa racemosa*). *International Journal of Environmental Research*, **5** (3), 725-732.

Full Text: 2011\Int J Env Res5, 725.pdf

Abstract: In this study Caulerpa racemosa has been characterized and used for the removal of Cd(II) and Pb (II) from aqueous solutions. The effect of pH, adsorbent dosage, contact time and temperature on adsorption process was studied in batch experiments. Langmuir and Freundlich models were applied to describe the biosorption isotherm of the metal ions by C. racemosa biomass. The adsorption data can be well described by Langmuir isotherm. The monolayer biosorption capacity of C. racemosa biomass for Pb(II) and Cd(II) ions was found to be 34.5 mg/g and 29 mg/g, respectively. Kinetics data of both metal ions were best described by pseudo second order model. The thermodynamic studies indicated that the adsorption was spontaneous and exothermic in nature. The analysis with FTIR indicated that possible functional groups involved in metal sorption by this alga were O-H bending, N-H stretching, C-N stretching, C-O and S=O stretching.

Keywords: Adsorption, Biomass, Biosorption, Biosorption, Caulerpa Racemosa, Ftir Analysis, Heavy-Metals, Ions, Isotherm, Kinetic, Kinetics, Langmuir and Freundlich Models, Langmuir Isotherm, Lead, Model, Pb(II), Pseudo-Second-Order, Sorption

? Soni, A.B., Keshav, A., Verma, V. and Suresh, S. (2012), Removal of glycolic acid from aqueous solution using bagasse flyash. *International Journal of Environmental Research*, **6** (1), 297-308.

Full Text: [2012\Int J Env Res6, 297.pdf](2012/Int%20J%20Env%20Res6,%20297.pdf)

Abstract: Present study deals with the adsorption of glycolic acid (GA) from aqueous solutions by using bagasse fly ash (BFA). BFA is a solid waste generated from bagasse Fired boilers and can be used as an adsorbent. Batch adsorption studies were carried out to evaluate the effect of various parameters like adsorbent dose, contact time, initial concentration and temperature on the removal of GA from aqueous solutions. For the selected dosage, it was found that the adsorption increases with increase in BFA doses and decreases with increase in acid concentration. The effect of contact time on removal shows that the adsorption of glycolic acid on BFA is very fast. The kinetics of the sorption of GA was well represented by Elovich model, first order, pseudo-second order and Weber and Morris intra-particle diffusion model. The adsorption isotherm analyses were also carried out by using Langmuir and Freundlich isotherm equations. Freundlich equation was found satisfactory to represent the equilibrium data. Thermodynamic studies revealed that the adsorption of GA on BFA is exothermic in nature.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption, Bagasse Fly Ash, Batch, Concentration, Dye, Equilibrium, Equilibrium, Freundlich, Gases, Glycolic Acid, Isotherm, Kinetics, Kinetics, Langmuir, Removal, Sorption, Temperature, Thermodynamic, Waste, Water

# Title: International Journal of Environmental Research and Public Health

Full Journal Title: [International Journal of Environmental Research and Public Health](http://www.mdpi.com/journal/ijerph/index)

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? Srinivasan, A. and Viraraghavan, T. (2009), Perchlorate: Health effects and technologies for its removal from water resources. *International Journal of Environmental Research and Public Health*, **6** (4), 1418-1442.

Full Text: [2009\Int J Env Res Pub Hea6, 1418.pdf](2009/Int%20J%20Env%20Res%20Pub%20Hea6,%201418.pdf)

Abstract: Perchlorate has been found in drinking water and surface waters in the United States and Canada. It is primarily associated with release from defense and military operations. Natural sources include certain fertilizers and potash ores. Although it is a strong oxidant, perchlorate is very persistent in the environment. At high concentrations perchlorate can affect the thyroid gland by inhibiting the uptake of iodine. A maximum contaminant level has not been set, while a guidance value of 6 ppb has been suggested by Health Canada. Perchlorate is measured in environmental samples primarily by ion chromatography. It can be removed from water by anion exchange or membrane filtration. Biological and chemical processes are also effective in removing this species from water.

Keywords: Ammonium-Perchlorate, Breast-Milk, Chlorate, Drinking Water, Environment, Exchange, Gas-Phase, Groundwater, Health Effects, Low-Dose Perchlorate, Microbial Reduction, Nitrate, Packed-Bed Bioreactors, Perchlorate, Processes, Removal, Thyroid-Function, Toxicity, Treatment Technologies, Uptake, Water

? Kusma, B., Scutaru, C., Quarcoo, D., Welte, T., Fischer, T.C. and Groneberg-Kloft, B. (2009), Tobacco control: Visualisation of research activity using density-equalizing mapping and scientometric benchmarking procedures. *International Journal of Environmental Research and Public Health*, **6** (6), 1856-1869.

Full Text: [2009\Int J Env Res Pub Hea6, 1856.pdf](2009/Int%20J%20Env%20Res%20Pub%20Hea6,%201856.pdf)

Abstract: Background: Tobacco smoking continues to be a major preventable cause of death and disease and therefore tobacco control research is extremely important. However, research in this area is often hampered by a lack in funding and there is a need for scientometric techniques to display research efforts. Methods: The present study combines classical bibliometric tools with novel scientometric and visualizing techniques in order to analyse and categorise research in the field of tobacco control. Results: All studies related to tobacco control and listed in the ISI database since 1900 were identified by the use of defined search terms. Using bibliometric approaches, a continuous increase in qualitative markers such as collaboration numbers or citations were found for tobacco control research. The combination with density equalizing mapping revealed a distinct global pattern of research productivity and citation activity. Radar chart techniques were used to visualize bi- and multilateral research cooperation and institutional cooperation. Conclusions: The present study supplies a first scientometric approach that visualises research activity in the field of tobacco control. It provides data that can be used for funding policy and the identification of research clusters.

Keywords: Citations, Collaboration, Density Equalizing Mapping, Dependence, Impact Factors, Index, Occupational-Health, Policy, Research, Research Output, Research Productivity, Science, Scientometrics, Tobacco Control

? Schoffel, N., Vitzthum, K., Mache, S., Groneberg, D.A. and Quarcoo, D. (2009), The role of endocarditis, myocarditis and pericarditis in qualitative and quantitative data analysis. *International Journal of Environmental Research and Public Health*, **6** (12), 2919-2933.

Full Text: [2009\Int J Env Res Pub Hea6, 2919.pdf](2009/Int%20J%20Env%20Res%20Pub%20Hea6,%202919.pdf)

Abstract: The current study is the first scientometric analysis of research activity and output in the field of inflammatory disorders of the heart (endo-, myo- and pericarditis). Scientometric methods are used to compare scientific performance on national and on international scale to identify single areas of research interest. Interest and research productivity in inflammatory diseases of the heart have increased since 1990. The majority of publications about inflammatory heart disorders were published in Western Europe and North America. The United States of America had a leading position in terms of research productivity and quality; half of the most productive authors in this study came from American institutions. The analysis of international cooperation revealed research activity in countries that are less established in the field of inflammatory heart disorder research, such as Brazil, Saudi Arabia and Tunisia. These results indicate that future research of heart inflammation may no longer be influenced predominantly by a small number of countries. Furthermore, this study revealed weaknesses in currently established scientometric parameters (i.e., h-index, impact factor) that limit their suitability as measures of research quality. In this respect, self-citations should be generally excluded from calculations of h-index and impact factor.

Keywords: Coauthor Ship, Diagnosis, Disorder, Endocarditis, h Index, h-Index, Impact, Impact Factor, Infective Endocarditis, Myocarditis, Pericarditis, Publications, Research, Scientific Performance, Scientometrics, Self-Citation, Self-Citations, Treatment Options

? Sarchiapone, M., Mandelli, L., Iosue, M., Andrisano, C. and Roy, A. (2011), Controlling access to suicide means. *International Journal of Environmental Research and Public Health*, **8** (12), 4550-4562.

Full Text: [2011\Int J Env Res Pub Hea8, 4550.pdf](2011/Int%20J%20Env%20Res%20Pub%20Hea8,%204550.pdf)

Abstract: Background: Restricting access to common means of suicide, such as firearms, toxic gas, pesticides and other, has been shown to be effective in reducing rates of death in suicide. In the present review we aimed to summarize the empirical and clinical literature on controlling the access to means of suicide. Methods: This review made use of both MEDLINE, ISI Web of Science and the Cochrane library databases, identifying all English articles with the keywords “suicide means”, “suicide method”, “suicide prediction” or “suicide prevention” and other relevant keywords. Results: A number of factors may influence an individual’s decision regarding method in a suicide act, but there is substantial support that easy access influences the choice of method. In many countries, restrictions of access to common means of suicide has lead to lower overall suicide rates, particularly regarding suicide by firearms in USA, detoxification of domestic and motor vehicle gas in England and other countries, toxic pesticides in rural areas, barriers at jumping sites and hanging, by introducing “safe rooms” in prisons and hospitals. Moreover, decline in prescription of barbiturates and tricyclic antidepressants (TCAs), as well as limitation of drugs pack size for paracetamol and salicylate has reduced suicides by overdose, while increased prescription of SSRIs seems to have lowered suicidal rates. Conclusions: Restriction to means of suicide may be particularly effective in contexts where the method is popular, highly lethal, widely available, and/or not easily substituted by other similar methods. However, since there is some risk of means substitution, restriction of access should be implemented in conjunction with other suicide prevention strategies.

Keywords: Antidepressants, Availability, Barriers, Cochrane, Databases, Drugs, England, English, European-Alliance, Hospitals, Household Firearm Ownership, ISI, ISI Web of Science, Lead, Lethal Methods, Literature, Means of Suicide, Medline, Methods, Mortality, Pesticides, Preventing Suicide, Prevention, Rates, Restriction of Means, Review, Risk, Salicylate, Science, Sites, Suicide, Trends, United-States, USA, Web of Science

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? Gueu, S., Yao, B., Adouby, K. and Ado, G. (2007), Kinetics and thermodynamics study of lead adsorption on to activated carbons from coconut and seed hull of the palm tree. *International Journal of Environmental Science and Technology*, **4** (1), 11-17.

Full Text: [2007\Int J Env Sci Tec4, 11.pdf](2007/Int%20J%20Env%20Sci%20Tec4,%2011.pdf)

Abstract: The kinetic and thermodynamic of the bath sorption of lead (Pb) on to activated carbon from Coconut (CA) and Seed hull of the Palm tree (GA) have been investigated. The effects of initial Ph concentration, contact time and temperature were examined. The results showed that the adsorption capacities of the activated carbons increased with the initial lead concentration. The process sorption followed a pseudo first order kinetics and parameters such as Ea and k(0) were determined. It could be best fitted by the Langmuir and Freundlich isotherms. From the first, the equilibrium Sorption capacities of lead ion were determined and found to be respectively 4.38 and 3.77 mg/ g for CA and GA at 60°C. The thermodynamic parameters such as ΔH, ΔS and ΔG were computed from the experimental data. These values show that the adsorption is endothermic and non spontaneous. Moreover, the relative weak values of ΔH (similar to 5 kcal/mol) confirm a physical adsorption. The maximum adsorptions were obtained at 60°C, pH 4 and with a Ph initial concentration of 100 mg/L.

Keywords: Heavy Metals, Activated Carbon, Langmuir and Freundlich Isotherms, Adsorption, Kinetic, Thermodynamic, Removal

? Abdel-Ghani, N.T., Hefny, M. and El-Chagbaby, G.A.F. (2007), Removal of lead from aqueous solution using low cost abundantly available adsorbents. *International Journal of Environmental Science and Technology*, **4** (1), 67-73.

Full Text: [2007\Int J Env Sci Tec4, 67.pdf](2007/Int%20J%20Env%20Sci%20Tec4,%2067.pdf)

Abstract: The removal of poisonous Pb(II) from wastewater by different low-cost abundant adsorbents was investigated. Rice husks, maize cobs and sawdust, were used at different adsorbent, metal ion ratios. The influence of pH, contact time, metal concentration, adsorbent concentration on the selectivity and sensitivity of the removal process was investigated. The adsorption efficiencies were found to be pH dependent, increasing by increasing the solution pH in the range from 2.5 to 6.5. The equilibrium time was attained after 120 min and the maximum removal percentage was achieved at an adsorbent loading weight of 1.5 gm. The equilibrium adsorption capacity of adsorbents used for lead were measured and extrapolated using linear Freundlich, Langmuir and Temkin isotherms and tile experimental data were found to fit the Temkin isotherm model.

Keywords: Adsorption, Adsorption Capacity, Bagasse, Biosorption, Cadmium, Contact Time, Copper, Equilibrium, Freundlich, Isotherm, Isotherms, Langmuir, Lead, Lon-Cost Adsorbents, Removal, Temkin, Wastewater, Weight, Zinc

? Babel, S. and Opiso, E.M. (2007), Removal of Cr from synthetic wastewater by sorption into volcanic ash soil. *International Journal of Environmental Science and Technology*, **4** (1), 99-107.

Full Text: [2007\Int J Env Sci Tec4, 99.pdf](2007/Int%20J%20Env%20Sci%20Tec4,%2099.pdf)

Abstract: The possibility of using volcanic ash soils (VAS) or Andisols as a low-cost and natural adsorbent is investigated in this Study for the removal of Cr(VI) from synthetic wastewater. Andisols can be used as adsorbent because they are characterized by the presence of non-crystalline secondary minerals such as allophane and imogolite that show variable charge characteristics and have the ability to retain cations and anions. The adsorption of Cr oil to two VAS from Mt. Isarog and Mandalagan (B-Horizon), Philippines, was carried out at ambient temperature using batch adsorption Studies. The effects of different parameters such as amount of adsorbent, contact time, initial Cr concentration and pH of the solution were investigated. The results showed that the VAS from Isarog is more effective in the removal of Cr than in Mandalagan. The maximum removal efficiency of the Isarog soil for a Cr concentration of 10 mg, L reached 89% with a dose of 20 g, L at a moderately acidic pH of 3. The Mandalagan soil on the other hand could remove only 65% at the same pH conditions and parameters. The difference in the removal of the two soils may be attributed to their physico-chemical properties in which the Isarog soil has higher clay content, porosity and lower bulk density. Isarog soil has fine particles with higher Surface area and more active non-crystalline minerals and thus has higher removal efficiency than Mandalagan soil. Based on the results, the use of VAS from Isarog appears to be economical and an alternative to commercially available adsorbents for the removal of Cr from contaminated wastewater.

Keywords: Adsorption, Adsorption Isotherm, Andisols, Batch, Chromium, Clay, Contact Time, Phosphate, Removal, Soil, Soils, Sorption, Volcanic Ash Soil, Wastewater

? Elkhatib, E.A., Mahdy, A.M., Saleh, M.E. and Barakat, N.H. (2007), Kinetics of copper desorption from soils as affected by different organic ligands. *International Journal of Environmental Science and Technology*, **4** (3), 331-338.

Full Text: [2007\Int J Env Sci Tec4, 331.pdf](2007/Int%20J%20Env%20Sci%20Tec4,%20331.pdf)

Abstract: Desorption of Cu and low molecular weight dissolved organics are the primary factors that impact fate and transport of Cu in soils. To improve predictions of the toxicity and threat from Cu contaminated soil, it is critical that time-dependent desorption behavior be understood. In this paper, the effect of organic ligands citrate, malate, and succinate on the kinetics of Cu desorption from contaminated soils varying widely in soil characteristics was investigated at 25°C and the soils used were referred to as clay, calcareous and sandy soils. The amount of Cu released by the used organic ligands varied greatly with physicochemical properties of the soils. The rate of Cu release by different extractants was in the order citric > malic > succinic, which was consistent with the stability constants of Cu complexes with these ligands. The modified Freundlich and the Elovich and Parabolic diffusion models were used to describe dsorption of Cu2+ from the three studied soils as affected by the organic ligands. All of the models fit the data well with correlation coefficients ranging from 0.83 to 1.00 (P < 0.01). Each Model has a set of assumptions for the different physical and chemical properties of the systems to which they are being applied. The uses of these equations yield different magnitudes for the calculated variable, but the relationships between the soil + organic ligands and their effect (i.e., increase or decrease) on these variables are the same. Such information is critical, since Cu is used in a variety of industrial and manufacturing processes and is one of the most common contaminants found at hazardous waste sites.

Keywords: Acids, Adsorption, Copper, Desorption, Diffusion, Freundlich, Goethite, Kinetics, Organic Ligands, Soil, Soils, Sorption, Toxicity, Weight

? Ncibi, M.C., Mahjoub, B. and Seffen, M. (2007), Adsorptive removal of textile reactive dye using *Posidonia oceanica* (L.) fibrous biomass. *International Journal of Environmental Science and Technology*, **4** (4), 433-440.

Full Text: [2007\Int J Env Sci Tec4, 433.pdf](2007/Int%20J%20Env%20Sci%20Tec4,%20433.pdf)

Abstract: The Mediterranean seagrass Posidonia oceanica (L) leaf sheaths were used as low cost, available and renewable biological adsorbent for the removal of reactive textile dye from aqueous solutions. Batch experiments were carried out for sorption kinetics and isotherms. Operating variables studied were temperature, pH and chemical pretreatment. Biosorption capacity seems to be enhanced by increasing the temperature. Maximum colour removal was observed at pH 5. Pre-treating fibres with H3PO4 and HNO3 solutions increased the adsorption efficiency up to 80%. Experimental sorption kinetic data were fitted to both Lagergren first-order and pseudo-second-order models and the data were found to follow first-order equation for raw fibres and pseudo-second-order for pre-treated ones. Equilibrium data were well represented by the Freundlich isotherm model for all tested adsorption systems. Besides, the thermodynamic study has showed that the dye adsorption phenomenon onto P. oceanica biomass was favourable, endothermic and spontaneous.

Keywords: Adsorbent, Adsorption, Aqueous Solutions, Aqueous-Solution, Biomass, Biosorbent, Biosorption, Biosorption, Capacity, Cellulose, Chemical Treatments, Cost, Dye, Efficiency, Endothermic, Equilibrium, Experiments, Freundlich, Freundlich Isotherm, Isotherm, Isotherms, Kinetic, Kinetics, Model, Modeling, Models, pH, Posidonia Seagrass, Pretreatment, Reactive Dye, Removal, Sorption, Sorption Kinetics, Temperature, Thermodynamic, Wheat-Straw

? Abdel-Ghani, N.T. and Elchaghaby, G.A. (2007), Influence of operating conditions on the removal of Cu, Zn, Cd and Pb ions from wastewater by adsorption. *International Journal of Environmental Science and Technology*, **4** (4), 451-456.

Full Text: [2007\Int J Env Sci Tec4, 451.pdf](2007/Int%20J%20Env%20Sci%20Tec4,%20451.pdf)

Abstract: Nile Rose Plant was used to study adsorption of several cations (Cu2+ + Zn2+, Cd2+ and Pb2+) from wastewater within various experimental conditions. The dried leaves of Nile Rose Plant were used at different adsorbent, metal ion ratios. The influence of pH, contact time, metal concentration, and adsorbent loading weight on the removal process was investigated. Batch adsorption studies were carried out at room temperature. The adsorption efficiencies were found to be pH dependent, increasing by increasing the pH in the range from 2.5 to 8.5 exept for Pb. The equilibrium time was attained within 60 to 90 min. and the maximum removal percentage was achieved at an adsorbent loading weight of 1.5 g, 50 mL mixed ions solution. Isothermal studies showed that the data were best fitted to the Temkin isotherm model. The removal order was found to be Pb2+ > Zn2+ > Cu2+ > Cd2+. The surface IR-characterization of Nile rose plant showed the presence of many functional groups capable of binding to the metal cations.

Keywords: Adsorption, Aqueous-Solutions, Biomass, Cadmium, Contact Time, Equilibrium, Heavy Metals, Heavy-Metals, Isotherm, Lead, Nile Rose Plant, Operating Conditions, Operating Parameters, Removal, Sawdust, Sorption, Temkin, Wastewater, Weight

? Mumin, M.A., Khan, M.M.R., Akhter, K.F. and Uddin, M.J. (2007), Potentiality of open burnt clay as an adsorbent for the removal of Congo red from aqueous solution. *International Journal of Environmental Science and Technology*, **4** (4), 525-532.

Full Text: [2007\Int J Env Sci Tec4, 525.pdf](2007/Int%20J%20Env%20Sci%20Tec4,%20525.pdf)

Abstract: Open burnt clay was studied as a potential adsorbent for the adsorption of Congo red (a reactive dye) from aqueous solution. The effect of contact time, pH, adsorbent dosage and temperature were studied. It was observed that the amount of Congo red retained increase with decreasing pH and increasing initial concentration. Removal percentage at pH 2 and 3 are almost same. The adsorption capacity of regenerated burnt clay was showed more than 98 % recovery of the adsorption efficiency of initial virgin adsorbent. The equilibrium data were described well by both Langmuir and Freundlich isotherm model. The adsorption capacity of some natural adsorbents, namely rice husk, wood charcoal, tea waste etc. were also investigated and compared with that of open burnt clay.

Keywords: Adsorption, Adsorption, Adsorption Capacity, Color Removal, Congo Red, Contact Time, Effluent, Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Langmuir, Open Burnt Clay, Reactive Dye, Reactive Dyes, Removal, Sorbent, Textile Dyes, Wastewater

? Goyal, P., Sharma, A., Srivastava, S. and Srivastava, M.M. (2008), Saraca indica leaf powder for decontamination of Pb: Removal, recovery, adsorbent characterization and equilibrium modeling. *International Journal of Environmental Science and Technology*, **5** (1), 27-34.

Full Text: [2008\Int J Env Sci Tec5, 27.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%2027.pdf)

Abstract: The present study explores the effectiveness of Saraca indica leaf powder, a surplus low value agricultural waste, in removing Pb ions from aqueous solution. The influence of pH, biomass dosage, contact time, particle size and metal concentration on the removal process were investigated. Batch studies indicated that maximum biosorption capacity for Pb was 95.37% at the pH 6.5. The sorption process followed the first order rate kinetics, The adsorption equilibrium data fitted best to both Langmuir and Freundlich isotherms. Morphological changes observed in scanning electron micrographs of untreated and metal treated biomass confirmed the phenomenon of biosorption. Fourier transform infrared spectroscopy of native and exhausted leaf powder confirmed lead biomass interactions responsible for sorption. Acid regeneration was tried for several cycles with a view to recover the sorbed metal ion and also to restore the sorbent to its original state. The findings showed that Saroca indica leaf powder can easily be envisaged as a new, vibrant, low cost biosorbent for metal clean up operations.

Keywords: Adsorption, Agricultural Waste, Batch Studies, Biomass, Biosorption, Bosorption, Contact Time, Equilibrium, Fourier Transform Infrared, Freundlich, Isotherms, Kinetics, Langmuir, Lead, Lead Biomass Interactions, Modeling, Regeneration, Removal, Saraca Indica Leaf Powder, Sorbent, Sorption

? Dable, P.J.M.R., Adjoumani, Y.J., Yao, B. and Ado, G. (2008), Wastewater dephosphorization using crude clays. *International Journal of Environmental Science and Technology*, **5** (1), 35-42.

Full Text: [2008\Int J Env Sci Tec5, 35.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%2035.pdf)

Abstract: The present work aims to establish the possibility of using local clays to treat wastewater. Thus, three clay samples extracted from two localities in the south of Cote d’Ivoire have been studied in their crude state. The qualitative physicochemical study that consisted in measurement of pH variation and argillaceous particles zeta potential showed that the Nieki-Agneby clay and the Beige Anyama clay presented disposal to uptake phosphate ions in solution at pH 5. For each clay, it is shown that the tension accompanying the sorption of a phosphate ion could be estimated to -5 mV. Differences in their composition and in the number of hydrating molecules of water were also accessible. The quantitative study performed with the Nieki-Agneby clay thereafter consisted following the sorption kinetic. The adsorption was found to reach the maximum after 5 h. of exchange, and almost 400 mu g phosphate ions in per gram of clay were fixed. Future studies will focus on the modification of these materials in order to increase their sorption capacity.

Keywords: Adsorption, Clay, Dephosphorization, Kinetic, Kinetic Study, Ph, Phosphate, Soils, Sorption, Wastewater, Water, Zeta Potential

? Igwe, J.C., Abia, A.A. and Ibeh, C.A. (2008), Adsorption kinetics and intrap articulate diffusivities of Hg, As and Pb ions on unmodified and thiolated coconut fiber. *International Journal of Environmental Science and Technology*, **5** (1), 83-92.

Full Text: [2008\Int J Env Sci Tec5, 83.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%2083.pdf)

Abstract: As, Hg and Pb are examples of heavy metals which are present in different types of industrial effluents responsible for environmental pollution. Their removal is traditionally made by chemical precipitation, ion-exchange and so on. However, this is expensive and not completely feasible to reduce their concentrations to the levels as low as required by the environmental legislation. Biosorption is a process in which solids of natural origin are employed for binding the heavy metal. It is a promising alternative method to treat industrial effluents, mainly because of its low cost and high metal binding capacity. The kinetics was studied for biosorption experiments using coconut fiber for As(III), Hg(II) and Pb(II) ions adsorption. The specific surface area and surface charge density of the coconut fiber are 1.186×1025 (m2/g) and 5.39×1024 (meq/m2), respectively. The maximum adsorption capacity was found to be the highest for Pb(II) followed by Hg(II) and As(III). The modification of the adsorbent by thiolation affected the adsorption capacity. Equilibrium sorption was reached for the metal ions at about 60 min. The equilibrium constant and free energy of the adsorption at 30 degrees C were calculated. The mechanism of sorption was found to obey the particle-diffusion model. The kinetic studies showed that the sorption rates could be described by both pseudo first-order and pseudo second-order models. The pseudo second-order model showed a better fit with a rate constant value of 1.16×10-4/min. for all three metal ions. Therefore, the results of this study show that coconut fiber, both modified and unmodified, is an efficient adsorbent for the removal of toxic and valuable metals from industrial effluents.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Kinetics, Alternative, Aqueous-Solution, Biomass, Biosorption, Capacity, Charge, Chromium, Coconut Fiber, Cost, Environmental, Environmental Pollution, Equilibrium, Experiments, Heavy Metal, Heavy Metals, Intraparticulate Diffusivity, Ion Exchange, Ion-Exchange, Kinetic, Kinetic Studies, Kinetics, Legislation, Mechanism, Metal, Metal Ions, Metals, Model, Models, Modification, Origin, Pb, Pollution, Pseudo First-Order, Pseudo Second-Order, Removal, Sorption, Surface Area, Thiolation, Waste, Waste Management, Zn Ions

? Nameni, M., Moghadam, M.R.A. and Arami, M. (2008), Adsorption of hexavalent chromium from aqueous solutions by wheat bran. *International Journal of Environmental Science and Technology*, **5** (2), 161-168.

Full Text: [2008\Int J Env Sci Tec5, 161.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%20161.pdf)

Abstract: in this research, adsorption of chromium(VI) ions on wheat bran has been studied through using batch adsorption techniques. The main objectives of this study are to 1) investigate the chromium adsorption from aqueous solution by wheat bran, 2) study the influence of contact time, pH, adsorbent dose and initial chromium concentration on adsorption process performance and 3) determine appropriate adsorption isotherm and kinetics parameters of chromium(VI) adsorption on wheat bran. The results of this study showed that adsorption of chromium by wheat bran reached to equilibrium after 60 min and after that a little change of chromium removal efficiency was observed. Higher chromium adsorption was observed at lower pHs, and maximum chromium removal (87.8%) obtained at pH of 2. The adsorption of chromium by wheat bran decreased at the higher initial chromium concentration and lower adsorbent doses. The obtained results showed that the adsorption of chromium(VI) by wheat bran follows Langmuir isotherm equation with a correlation coefficient equal to 0.997. In addition, the kinetics of the adsorption process follows the pseudo second-order kinetics model with a rate constant value of 0.131 g/mg.min The results indicate that wheat bran can be employed as a low cost alternative to commercial adsorbents in the removal of chromium(VI) from water and wastewater.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dose, Adsorbents, Adsorption, Adsorption Isotherm, Alternative, Aqueous Solution, Aqueous Solutions, Batch Adsorption, Chromium, Cost, Efficiency, Equilibrium, Heavy Metals, Hexavalent Chromium, Isotherm, Kinetics, Kinetics Model, Langmuir, Langmuir Isotherm, Metal-Ions, Model, Natural Adsorbents, Nickel, pH, Pseudo Second-Order, Removal, Removal Efficiency, Research, Second-Order Kinetics, Solution, Techniques, Treated Sawdust, Waste-Water, Wastewater, Water

? Malakootian, M., Almasi, A. and Hossaini, H. (2008), Pb and Co removal from paint industries effluent using wood ash. *International Journal of Environmental Science and Technology*, **5** (2), 217-222.

Full Text: [2008\Int J Env Sci Tec5, 217.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%20217.pdf)

Abstract: The release of heavy metals into the environment is a worldwide major concern. Different studies have demonstrated that natural agents have a high removal capacity for divalent heavy metal ions. Wood ash is a natural adsorbent and, in comparison with others, has a very low price. In this study, the removal of heavy metals (Pb and Co) from Binalood paint industry (Kerman, Iran) effluent was investigated in batch condition. Pb and Co measurement in samples were done with atomic absorption equipment and test methods were adapted from standard methods for the examination of water and wastewater. The effect of pH and the amount of adsorbent was determined and different adsorption isotherms were also obtained. This study shows that the adsorption process follows the adsorption Langmuir isotherm. The amount of wood ash has a great role in the adsorption rate and adsorption rate increased as wood ash increased. In the study, the reactions reached equilibrium in 3 h contact time. The maximum Pb removal efficiency was 96.1% at pH 2 with a contact time of 3 h and 100 g, L wood ash and the maximum Co removal efficiency was 99% at pH 2 with a contact time of 3 h and 100 g, L wood ash. According to the results, wood ash is recommended as a low cost and available adsorbent to remove Pb and Co from municipal and industrial wastewaters.

Keywords: Adsorbents, Adsorption, Adsorption, Adsorption Isotherms, Aqueous-Solutions, Batch, Bentonite, Contact Time, Copper, Equilibrium, Heavy Metal, Heavy Metals, Heavy-Metal, Industrial Wastewaters, Ions, Iran, Isotherm, Isotherms, Langmuir, Langmuir Isotherm, Metal Ions, Metal Removal, Pb(II), pH, Removal, Waste-Water, Wastewater, Wastewater Langmuir Isotherm, Water

? Hussein, M., Amer, A.A. and Sawsan, I.I. (2008), Oil spill sorption using carbonized pith bagasse: Trial for practical application. *International Journal of Environmental Science and Technology*, **5** (2), 233-242.

Full Text: [2008\Int J Env Sci Tec5, 233.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%20233.pdf)

Abstract: in the present work, an attempt was made to provide an efficient, easily deployable method of cleaning up oil spills and recovering of the oil. Carbonized pith bagasse, a relatively abundant and inexpensive material is currently being investigated as an adsorbent to remove contaminants “oil” from water. Fibers extracted from bagasse and carbonized at 300°C were found to have a high performance for sorption and recovery of light, heavy oils and even the viscous ones. The physical properties of pith bagasse were investigated using scanning electronic microscope to show the inner and the outer surface and the cross section area of the pith bagasse and thermo gravimetric analyzer to investigate the degradation profile of the pith bagasse. The carbonized pith bagasse was packed into a polypropylene bag and its sorption behavior was studied. A comparison was made between the prepared pad and the commercial sorbents show that the pad containing carbonized pith bagasse has higher sorption capacity in comparison to the commercial sorbents. The pad exhibited high oil retention ability and a high selectivity for the oils over the water. The pad showed a possibility of reuse for eight times. The sorption capacity of the pads containing carbonized pith bagasse was found to increase with increasing the time of sorption till it reaches the maximum value at the time of sorption equal to 60 min.

Keywords: Carbonfibers, Cleanup, Degradation, Fibers, Heavy Oils, Oil Recovery, Physical Properties, Recovery, Removal, Retention, Sorbent, Sorbents, Sorption, Straw, Water

? Mahvi, A.H. (2008), Application of agricultural fibers in pollution removal from aqueous solution. *International Journal of Environmental Science and Technology*, **5** (2), 275-285.

Full Text: [2008\Int J Env Sci Tec5, 275.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%20275.pdf)

Abstract: Discharging different kinds of wastewater and polluted waters such as domestic, industrial and agricultural wastewaters into environment, especially to surface water, can cause heavy pollution of this body sources. With regard to increasing effluent discharge standards to the environment, high considerations should be made when selecting proper treatment processes. Any of chemical, biological and physical treatment processes have its own advantages and disadvantages. It should be kept in mind that economical aspects are important, too. In addition, employing environment-friendly methods for treatment is emphasized much more these days. Application of some waste products that could help in this regard, in addition to reuse of these waste materials, can be an advantage. Agricultural fibers are agricultural wastes and are generated in high amounts. The majority of such materials is generated in developing countries and, since they are very cheap, they can be employed as biosorbents in water and wastewater applications. Polluted surface waters, different wastewaters and partially treated wastewater may be contaminated by heavy metals or some organic matters and these waters should be treated to reduce pollution. The results of investigations show high efficiency of agricultural fibers in heavy metal and phenol removal. In this paper, some studies conducted by the author of this article and other investigators are reviewed.

Keywords: Activated Carbon, Adsorption, Adsorption, Aqueous Solutions, Author, Biosorption, By-Products, Cadmium Removal, Heavy Metal, Heavy Metals, Heavy-Metal Biosorption, Industrial Effluents, Industrial Waste-Water, Oxidation Processes, Phenol, Photocatalytic Degradation, Pollution, Removal, Rice Husk, Sargassum sp, Treatment, Wastewater, Water

? Nwuche, C.O. and Ugoji, E.O. (2008), Effects of heavy metal pollution on the soil microbial activity. *International Journal of Environmental Science and Technology*, **5** (3), 409-414.

Full Text: [2008\Int J Env Sci Tec5, 409.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%20409.pdf)

Abstract: The effects of heavy metals on soil microbial processes were investigated over a period of six weeks. Analytical grade (Sigma) sulphate salts of copper, zinc and nickel were added individually and in combinations to soil samples and incubated in different plastic pots. Samples were taken from the pots forthnightly and the rates of microbial carbon and nitrogen mineralization, microbial biomass carbon and respiration were measured. The results showed the effect of metals on the measured parameters were significant (P<0.05.). By the 6(th) week postreatment, the rates of carbon accumulated were high in the copper (6.03%) and copper:zinc (5.80%) treatments but low in the nickel and zinc (4.93% and 5.02% respectively). The rates of nitrogen mineralization were 0.41 and 0.44% in samples treated with copper and copper:zinc compared to 0.22%-0.24% obtained at the beginning of the experiments. Soil microbial biomass carbon declined from average value of 183.7-185.6 mu g/g before treatment to as low as 100.8 and 124.6 mu g/g in samples treated with copper:zinc and copper respectively. The rate of respiration of the soil microbial populations was equally inhibited by the metals. From an average rate of 2.51-2.56 mu g of C/g respiration of the soil microbes declined to 0.98, 1.08 and 1.61 mu g of C/g in the copper:zinc, copper and zinc treated soils by the end of the experiment. The results suggest additive or synergistic effects of the metals.

Keywords: Mineralization, Microbial Biomass Carbon, Additive, Synergistic, Heavy Metals, Thymidine Incorporation, Bacterial Communities, Forest Soils, Homogenization Centrifugation, Organic-Matter, Tolerance, Copper, Zinc, Biomass, Remediation

? Ben Hamissa, A.M., Ncibi, M.C., Malijoub, B. and Seffen, M. (2008), Biosorption of metal dye from aqueous solution onto Agave americana (L.) fibres. *International Journal of Environmental Science and Technology*, **5** (4), 501-508.

Full Text: [2008\Int J Env Sci Tec5, 501.pdf](2008/Int%20J%20Env%20Sci%20Tec5,%20501.pdf)

Abstract: remove metal dye (Alpacide yellow) from aqueous solutions. In order to optimize the biosorption process, the effect of pH, temperature, contact time and initial solution concentration was investigated in batch system. The results indicated that acidic pH=2 was favourable for metal dye removal. The increase of temperature increases the velocity of the biosorption reaction. The biosorption kinetics of alpacide yellow were closer to the pseudo-second order than to the first order model for all concentrations and temperature. The calculated thermodynamic parameters such as ΔG°, ΔH° and ΔS° indicated a spontaneous and endothermic biosorption process of metal dye onto Agave americana Fibres. The equilibrium data were analysed using the Langmuir and Freundlich isotherms and showed a good fit with Langmuir model at lower temperatures and with Freundlich model at 50°C.

Keywords: Activated Carbon, Adsorption, Batch, Biosorption, Cellulosic Biomass, Contact Time, Dyes, Equilibrium, Freundlich, Isotherms, Kinetics, Kinetics, Langmuir, Langmuir Model, Methylene-Blue Biosorption, Modeling, Pine Sawdust, Pseudo-Second Order, Reactive Dye, Removal, Rice Husk, Sorption, Waste-Water

? Shah, B.A., Shah, A.V. and Singh, R.R. (2009), Sorption isotherms and kinetics of chromium uptake from wastewater using natural sorbent material. *International Journal of Environmental Science and Technology*, **6** (1), 77-90.

Full Text: [2009\Int J Env Sci Tec6, 77.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%2077.pdf)

Abstract: Chromium(VI) which exists in many industrial wastewater is considered highly toxic. The aim of the present investigation was to study the reduction of chromium(VI) to chromium(III) and then removing it with the help of weathered basalt andesite products. Reduction of the chromium(VI) to chromium(III) by hydrazinium sulfate was investigated. The influence of hydronium ion concentration, contact time, hydrazinium sulphate dosage and temperature has been tested in batch runs. The process was found to be acid, temperature and concentration dependent. The suitability of weathered basalt andesite products as a potential sorbent was assessed for the removal of chromium(III) following batch mode of operation. The effect of various parameters such as hydronium ion concentration, shaking time, sorbent dose, initial metal ion concentration and temperature on the removal of chromium(III) front aqueous solution was studied. Thermodynamic parameters (ΔH°, ΔS° and ΔG°) for the sorption process were evaluated. Analysis of sorption obtained results showed that the sorption pattern followed the Freundlich, Langmuir and Dubinin-Kaganer-Radushkevich isotherms. The process Follows pseudo second order rate and surface diffusion is identified as the predominating mechanism. The sorption process was shown to be reversible by the recovery of sorbed chromium(III) upon extraction with 0.5 M nitric acid. The sorbent, before and after sorption, was characterized by fourier transform infrared spectrometer, X-ray diffraction, scanning electron microscope, transmision electron microscope and thermogravimetric analyse methodes. An increase in crystallanity after sorption of chromium was observed. An industrial effluent was successfully treated with the same sorbent with convincing results.

Keywords: Adsorption, Aqueous-Solutions, Batch, Batch Mode, Chelating Resin, Chromate Removal, Chromium, Contact Time, Cr(III), Diffusion, Freundlich, Hexavalent Chromium, Hydrazinium Sulfate, Iron, Isotherms, Kinetics, Langmuir, Metal-Ions, Montmorillonite, Reduction, Reduction of Chromium(VI), Removal, Sorbent, Sorption, Thermodynamic, Thermodynamic Parameters, Wastewater, Weathered Basalt Andesite Products

? Malakootian, M., Nouri, J. and Hossaini, H. (2009), Removal of heavy metals from paint industry’s wastewater using Leca as an available adsorbent. *International Journal of Environmental Science and Technology*, **6** (2), 183-190.

Full Text: [2009\Int J Env Sci Tec6, 183.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20183.pdf)

Abstract: The ability of light expanded clay aggregate to remove lead and cadmium from paint industry’s effluents was studied at different levels of adsorbent, contact time and pH in April 2008. For this purpose, lead and cadmium removal from paint industry effluents were studied in batch reactors. lead and cadmium measurements have been taken with non-flame atomic absorption techniques and test methods were adapted from 19(th) Ed. of standard methods for the examination of water and wastewater. In this study, different amounts of Leca (1, 2, 3, 4, 5, 6, 7, & 9 and 10 g, L) were investigated. The amount of adsorbed lead and cadmium exposure to Leca increased from 1.41 to 3 mg, g and 0.22 to 0.75 mg, g, respectively. The maximum removal efficiency for Pb was 93.75 % at pH = 7 and exposure to 10 g, L of Leca, while for cadmium, it was nearly 89.7 % at the same condition. In this study, adsorption process of lead and cadmium was fitted with Freundlich adsorption isotherm (R-pb(2) = 0.97 and R-Cd(2) = 0.98). The sufficient contact time was deemed 1-2 h for lead and cadmium. According to the results, Leca is recommended as a low cost and available adsorbent to remove lead and cadmium from industrial wastewater.

Keywords: Adsorption, Adsorption, Aqueous-Solution, Batch, Bentonite, Cadmium, Cadmium, Carbon, Freundlich, Heavy Metals, Ions, Isotherm, Lead, Lead, Light Expanded Clay Aggregate, Pb(II), Removal, Sorption, Wastewater, Water

? Mirbagheri, S.A. and Monfared, S.A.H. (2009), Pesticide transport and transformation modeling in soil column and groundwater contamination prediction. *International Journal of Environmental Science and Technology*, **6** (2), 233-242.

Full Text: [2009\Int J Env Sci Tec6, 233.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20233.pdf)

Abstract: Pesticide transport and transformation were modeled in soil column from the soil surface to groundwater zone. A one dimensional dynamic mathematical and computer model is formulated to simulate two types of pesticides namely 2,4-dichlorophenoxy acetic acid and 1,2-dibromo 3-chloro propane in soil column. This model predicts the behavior and persistence of these pesticides in soil column and groundwater. The model is based on mass balance equation, including convective transport, dispersive transport and chemical adsorption in the phases such as solid, liquid and gas. The mathematical solution is obtained by finite difference implicit method. The model was verified with experimental measurements and also with analytical solution. The simulation results are in good agreement with measured values. The major findings of this research are the development of the model which can calculate and predict the concentration of pesticides in soil profiles, as well as groundwater after 4, 12, 31 days of pesticide application under steady state and unsteady water flow condition. With the results of this study, the distribution of various types of pesticides in soil column to groundwater table can be predicted.

Keywords: Adsorption, California, Dbcp, Fate, Finite Difference, Fresno, Modeling, Numerical Method, Pesticide, Pesticides, Pollution, Research, Residues, Simulation, Soil, Soil System, Sorption, Subsurface, Water, Water Movement

? Abdel-Ghani, N.T., Hegazy, A.K. and El-Chaghaby, G.A. (2009), *Typha domingensis* leaf powder for decontamination of aluminium, iron, zinc and lead: Biosorption kinetics and equilibrium modeling. *International Journal of Environmental Science and Technology*, **6** (2), 243-248.

Full Text: [2009\Int J Env Sci Tec6, 243.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20243.pdf)

Abstract: The present study explores the effectiveness of Typha domingensis leaf powder for simultaneous removal of aluminium, iron, zinc and lead ions from aqueous solution. Batch experiments were carried out in laboratory at room temperature and at initial ions concentrations simulating the concentrations of these cations in real wastewater samples. The sorption process was examined applying the first and second order kinetic mechanisms. The results were best described by the second order rate kinetics. The applicability of the three equilibrium isotherm models was investigated. The obtained data follow the three investigated isothermal models in the following order: Langmuir > Freundlich > Temkin, for all the studied metal ions. The infrared spectra of native and exhausted Typha leaf powder confirmed ions-biomass interactions responsible for sorption. The results showed that Typha domingensis leaf powder can easily be envisaged as a new low cost natural biosorbent for metal clean up operations in aquatic systems.

Keywords: Adsorption, Aqueous-Solution, Batch Experiments, Biomass, Biosorption, Cadmium, Contact Time, Copper(II), Fly-Ash, Infrared Spectra, Ions, Isotherm Models, Removal, Sorption, Waste-Water

? Agunbiade, F.O. and Fawale, A.T. (2009), Use of Siam weed biomarker in assessing heavy metal contaminations in traffic and solid waste polluted areas. *International Journal of Environmental Science and Technology*, **6** (2), 267-276.

Full Text: [2009\Int J Env Sci Tec6, 267.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20267.pdf)

Abstract: The ability of Chromolaena odorata to accumulate and serve as biomarker to lead and cadmium metals pollution load had been revealed by this study. Samples of soils and Siam weed were collected to assess impacts of solid waste disposal and traffic density on the environment. Composite sample were collected from a solid waste dumpsite, three traffic polluted areas with varying traffic density and a background site distant from traffic. Concentration of eight elements: cadmium, cobalt, chromium, copper, iron, nickel, lead and zinc were determined in soil and plant samples and correlated together. Accumulative factors like pollution load index, transfer factor, contamination factor, enrichment factor were calculated for the metals in both plants and soils and used as basis for interpreting the state of the environment and ability of C. odorato to accumulate metals. The accumulative factors of plants were generally greater than that of soil samples indicating increased accumulative capacity of the plant. The accumulations of lead and cadmium in C. odorata were remarkable with contamination factor 10.51 and 23.50, respectively and mean enrichment factors 3.52 and 6.93, respectively. Other metals had lower accumulative factors. The distribution of metals and calculated factors placed solid waste disposal site as the most polluted site while the trend observed in areas with traffic pollution depicts the ability of C. odorata to clean up metal pollution by accumulating them. It can therefore be suggested that solid waste disposal negatively affects the environment more than traffic pollution subject to the volume of traffic.

Keywords: Accumulation, Cadmium, China, Chromolaena Odorata, Contamination Factor, Copper, Exposure, Heavy Metal, Industrial, Lead, Metallothionein, Metals Pollution, Nickel, Pollution, Soil, Soils, Sorption, Trace-Elements, Trend, Waste Disposal, Water, Zinc

? Zvinowanda, C.M., Okonkwo, J.O., Shabalala, P.N. and Agyei, N.M. (2009), A novel adsorbent for heavy metal remediation in aqueous environments. *International Journal of Environmental Science and Technology*, **6** (3), 425-434.

Full Text: [2009\Int J Env Sci Tec6, 425.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20425.pdf)

Abstract: The objective of this study was to investigate the possibility of using maize tassel as an alternative adsorbent for the removal of chromium(VI) and cadmium(II) ions from aqueous solutions. The effect of pH, solution temperature, contact time, initial metal ion concentration and adsorbent dose on the adsorption of chromium(VI) and cadmium(II) by tassel was investigated using batch methods. Adsorption for both chromium(VI) and cadmium(II) was found to be highly pH dependent compared to the other parameters investigated. Obtained results gave an adsorption capacity of 79.1% for chromium(VI) at pH 2, exposure time of 1h at 25°C. Maximum capacity of cadmium of 88% was obtained in the pH range of 5-6 at 25°C after exposure time of 1 h. The adsorption capacities of tassel for both chromium(VI) and cadmium(II) were found to be comparable to those of other commercial adsorbents currently in use for the removal of heavy metals from aqueous wastes. These results have demonstrated the immense potential of maize tassel as an alternative adsorbent for toxic metal ions remediation in polluted water and wastewater.

Keywords: Abundantly Available Adsorbents, Activated Carbon, Adsorption, Adsorption Capacity, Batch, Batch Studies, Cadmium, Energy Dispersive X-Ray, Fourier Transform Infrared, Heavy Metal, Heavy Metals, Hexavalent Chromium, Ions, Low-Cost Adsorbents, Maize Tassel, Maize Tassel, Metal Ions, Pb(II), Removal, Waste-Water, Wastewater, Water

? Urík, M., Littera, P., Ševc, J., Kolenčík, M. and Čerňanský, S. (2009), Removal of arsenic(V) from aqueous solutions using chemically modified sawdust of spruce (*Picea abies*): Kinetics and isotherm studies. *International Journal of Environmental Science and Technology*, **6** (3), 451-456.

Full Text: [2009\Int J Env Sci Tec6, 451.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20451.pdf)

Abstract: Arsenic is a ubiquitous element in the environment and occurs naturally in both organic and inorganic forms. Under aerobic condition, the dominant form of arsenic in waters is arsenate, which is highly mobile and toxic. Arsenic poisoning from drinking water remains a serious world health issue. There are various standard methods for arsenic removal from drinking waters (coagulation, sorption, ion-exchange reactions or methods of reverse osmosis) and alternative methods, such as biosorption. Biosorption of arsenic from natural and model waters by native or chemically modified (with urea or ferric oxyhydroxides) plant biomass prepared from sawdust of Picea abies was studied. The kinetic of the adsorption process fitted well the pseudo second order adsorption model and equilibrium was achieved after 2 h. The results showed that biosorption was well described by both Langmuir and Freundlich isotherms. The maximum biosorption capacity of the sawdust modified with ferric oxyhydroxides, evaluated by Langmuir adsorption model, was 9.259 mg/g, while the biosorption capacity of unmodified biosorbent or biosorbent modified with urea was negligible. The adsorption capacity is comparable to results published by other authors, suggesting that the prepared chemically modified biosorbent has potential in remediation of contaminated waters.

Keywords: Adsorption, Adsorption, Adsorption Capacity, Alternative, Aqueous Solutions, Arsenate, Arsenic, Arsenic Removal, As(III), As(V), Authors, Biomass, Bioremediation, Biosorbent, Biosorption, Biosorption, Capacity, Coagulation, Drinking Water, Environment, Equilibrium, Forms, Freundlich, Health, Ion Exchange, Ion-Exchange, Ionexchange, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir and Freundlich Isotherms, Mechanism, Methods, Mobile, Model, Modified, Modified Fungal Biomass, Natural, Organic, Osmosis, Picea Abies, Plant, Plant Biomass, Poisoning, Potential, Pseudo Second Order, Pseudo-Second-Order, Remediation, Removal, Reverse Osmosis, Sawdust, Second Order, Second-Order, Solutions, Sorption, Standard, Toxic, Water, Waters, World

? Gong, R., Liang, J., Chen, J. and Huang, F. (2009), Removal of bisphenol A from aqueous solution by hydrophobic sorption of hemimicelles. *International Journal of Environmental Science and Technology*, **6** (4), 539-544.

Full Text: [2009\Int J Env Sci Tec6, 539.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20539.pdf)

Abstract: In this work, the hydrophobic sorption of hemimicelles was proposed as an innovative method for removing bisphenol A from aqueous solution with esterified carboxyl cotton as sorbent and cetyl trimethyl ammonium bromide as cationic surfactant. In order to optimize the sorption process, the effect of sorbent dose, initial pH, surfactant dose, sorbate concentration, contact time and temperature was investigated in batch system. The maximum value of bisphenol A removal appeared in the pH range 4-10. The bisphenol A removal ratio came up to the maximum value beyond 12 time of surfactant/bisphenol A. The isothermal data of bisphenol A sorption conformed well to the Langmuir model and the maximum sorption capacity (*Q*m) of esterified carboxyl cotton for bisphenol A was 87.72 mg/g. The bisphenol A removal equilibrium was reached within about 4 h and the removal process could be described by the pseudo-second-order kinetic model. The thermodynamic study indicated that the bisphenol A sorption process was spontaneous and exothermic.

Keywords: Absorption, Adsorption Characteristics, Ammonium, Aqueous Solution, Batch, Batch System, Behavior, Bisphenol A, Bromide, Capacity, Carbon, Cationic Surfactant, Cells, Cetyl Trimethyl Ammonium Bromide, Concentration, Data, Degradation, Endocrine Disrupting Chemical, Equilibrium, Esterified Carboxyl Cotton, Estradiol, Exothermic, Isothermal, Kinetic, Kinetic Model, Langmuir, Langmuir Model, Model, pH, Phenols, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Solution, Sorbate, Sorbent, Sorbent Dose, Sorption, Sorption Capacity, Sorption Process, Surfactant, Temperature, Thermodynamic, Value, Waste, Water, Work

? Boldaji, M.R., Mahvi, A.H., Dobaradaran, S. and Hosseini, S.S. (2009), Evaluating the effectiveness of a hybrid sorbent resin in removing fluoride from water. *International Journal of Environmental Science and Technology*, **6** (4), 629-632.

Full Text: [2009\Int J Env Sci Tec6, 629.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20629.pdf)

Abstract: In some regions of the world, the concentration of fluoride in groundwater is high. To reduce the amount of fluoride to acceptable drinking water standard, it is highly recommended to treat the water. Fluoride adsorption in aqueous solution by a hybrid resin was studied in this research because of its functional groups likeness with goethite. Kinetic data showed that F adsorption was rapid in the beginning and maximum uptake occurred in within 10 min and equilibrium reached within 100 min. The experimental results showed that fluoride adsorption was influenced by pH of solution and optimum operating pH was in the range of 3 to 5.5. Langmuir model was applicable to the present study and F ions were exchanged with hydroxide ions in nano-scaled structure on the surface of sorbent. This adsorbent with 61% efficiency is suitable for the regions where F concentration is less than 4 mg, L.

Keywords: Activated Alumina, Adsorption, Aqueous-Solution, Dashtestan, Drinking Water, Equilibrium, F, Fluoride, Fluoride Removal, Functional Groups, Goethite, Goethite, Groundwater, Hybrid Resin, Ions, Iran, Kinetic, Kinetics, Langmuir, Langmuir Model, Research, Sorbent, Water

? Subramanyam, B. and Das, A. (2009), Linearized and non-linearized isotherm models comparative study on adsorption of aqueous phenol solution in soil. *International Journal of Environmental Science and Technology*, **6** (4), 633-640.

Full Text: [2009\Int J Env Sci Tec6, 633.pdf](2009/Int%20J%20Env%20Sci%20Tec6,%20633.pdf)

Abstract: Use of native soil in adsorption of phenol from industrial wastewater has been one of the attractive option for dephenolation, especially in view of low cost and ease in accessibility, as well as scope for regeneration (or, at least reuse). However, an effective usage of the adsorbent necessitates a deeper understanding of the adsorption characteristics. Most of the study of adsorption characteristics are confined to analysis of mono- and bi-parametric isotherm models (and rarely, linearized multi-parametric isotherm models), due to the difficulties in solving higher parametric models, as well as fairly satisfying results by lower-parametric models. In the present study, adsorption batch studies were carried out using a naturally and widely available common soil of south India (namely, Adhanur soil), for removal of phenol from the aqueous solution, with an explicit objective of comparison of linear and non-linear regression methods for finding variation in isotherm coefficients and fitness of the models. Six linearized isotherm models (including four linearized Langmuir models) and three non-linear isotherm model were discussed in this paper, and their coefficients were estimated. Although all the studied isotherm models showed fairly good fit to the experimental data, but Redlich-Peterson isotherm was found to be the best representative for phenol-sorption on the used soil adsorbent. Besides, it was observed that to determine the isotherm parameters non-linear isotherm models were found to be the best representative of adsorption characteristics, than their linearized counter-parts.

Keywords: Activated Carbon, Adhanur Soil, Adsorption, Basic Dye Adsorption, Batch, Chlorinated Phenols, Dephenolation, Fitness, Fly-Ash, India, Isotherm, Kinetics, Langmuir, Lead, Multi-Parametric Coefficients, Nonlinear Methods, Regression, Removal, Soil, Sorption Isotherm, Waste-Water, Wastewater

? Luo, Z., Wadhawan, A. and Bouwer, E.J. (2010), Sorption behavior of nine chromium(III) organic complexes in soil. *International Journal of Environmental Science and Technology*, **7** (1), 1-10.

Full Text: [2010\Int J Env Sci Tec7, 1.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%201.pdf)

Abstract: Sorption data were obtained with a Matawan soil and the following chromium(III) organic complexes: chromium(III) ascorbate, chromium(III) glutamate, chromium(III) histidine, chromium(III) mandelate, chromium(III) citrate, chromium(III) cysteine, chromium(III) serine, chromium(III) pyruvate and chromium(III) oxalate. The influence of pH (2-12), ionic strength (0.005-1 M) and concentration of sorbate (1-10 mg, L) on the extent of sorption was evaluated. The pH value did not influence the percent sorption at environmentally relevant pH 7. Ionic strength between 0.005 and 0.01 M KNO3 did not influence the sorption. Sorption and desorption data obtained at pH 7, 0.01 M KNO3 and 1-10 mg, L for each chromium(III) organic complex were analyzed using Freundlich and Langmuir models. The Freundlich model provided good fits for all of the chromium(III) organic complexes. Sorption data for chromium(III) glutamate, chromium(III) pyruvate, chromium(III) oxalate, chromium(III) cysteine, chromium(III) ascorbate and chromium(III) citrate were described well by the Langmuir model. Estimates for the saturated sorption capacities were 141, 70.9, 36.5, 35.5, 28.6 and 4.4 mu g, g, respectively. It was not possible to desorb significant amounts of the previously sorbed chromium(III) organic complexes. At the same pH, ionic strength and solid: liquid ratio, the order of the observed sorption to the Matawan soil from highest to lowest was chromium(III) mandelate, chromium(III) glutamate, chromium(III) histidine, chromium(III) cysteine, chromium(III) serine, chromium(III) pyruvate, chromium(III) oxalate, chromium(III) ascorbate and chromium(III) citrate.

Keywords: Activation, Adsorption, Chromium(III) Ascorbate, Chromium(III) Citrate, Chromium(III) Cysteine, Chromium(III) Histidine, Chromium(III) Serine, Complex, Desorption, Freundlich, Freundlich Isotherm, Geochemistry, Hexavalent, Langmuir, Organo-Chromium(III) Complexes, Pathways, Soil, Solubility, Sorption, Speciation, Toxicity, Water

? Rafati, L., Mahvi, A.H., Asgari, A.R. and Hosseini, S.S. (2010), Removal of chromium(VI) from aqueous solutions using Lewatit FO36 nano ion exchange resin. *International Journal of Environmental Science and Technology*, **7** (1), 147-156.

Full Text: [2010\Int J Env Sci Tec7, 147.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20147.pdf)

Abstract: The removal of the chromium(VI) ion from aqueous solutions with the Lewatit FO36 ion-exchange resin is described at different conditions. The effects of adsorbent dose, initial metal concentration, contact time and pH on the removal of chromium(VI) were investigated. The batch ion exchange process was relatively fast and it reached equilibrium after about 90 min of contact. The ion exchange process, which is pH dependent showed maximum removal of chromium(VI) in the pH range 5.0-8.0 for an initial chromium(VI) concentration of 0.5 mg, dm(3). The equilibrium related to Lewatit FO36 ion-exchange capacity and the amounts of the ion exchange were obtained using the plots of the Langmuir adsorption isotherm. It was observed that the maximum ion exchange capacity of 0.29 mmol of chromium(VI), g for Lewatit FO36 was achieved at optimum pH value of 6.0. The ion exchange of chromium(VI) on this cation-exchange resin followed first-order reversible kinetics.

Keywords: Abundantly Available Adsorbents, Adsorption, Adsorption Isotherm, Adsorption Properties, Batch, Cadmium(II), Cation Exchange, Chromium(VI), Copper(II), Equilibrium, Heavy-Metal Ions, Hexavalent Chromium, Ion Exchange, Ion Exchange Kinetics, Isotherm, Kinetics, Langmuir, Lewatit FO36, NANO Resin, Preconcentration, Removal, Sorbent, Sorption, Waste-Water

? Vinodhini, V. and Das, N. (2010), Relevant approach to assess the performance of sawdust as adsorbent of chromium(VI) ions from aqueous solutions. *International Journal of Environmental Science and Technology*, **7** (1), 85-92.

Full Text: [2010\Int J Env Sci Tec7, 85.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%2085.pdf)

Abstract: The biosorption of chromium(VI) ions from aqueous solutions by two adsorbents viz. mango and neem sawdust was studied under a batch mode. An initial pH of 2.0 was most favorable for chromium(VI) removal by both the adsorbents. The results obtained for the final concentration of chromium(VI) and chromium(III) at a pH range of 2-8 indicated that a combined effect of biosorption and reduction was involved in the chromium(VI) removal specially when the pH value is lower than 3. The maximum loading capacity was calculated from adsorption isotherms by applying the Langmuir model and found to be higher for neem sawdust (58.82 mg/g). Evaluation of experimental data in terms of biosorption kinetics showed that the biosorption of chromium(VI) by neem sawdust followed pseudo second-order kinetics. Therefore, the rate limiting step may be chemical sorption or chemisorption. The efficiency of this process was examined in using tannery wastewater contaminated with chromium(VI) ions in column mode.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Isotherms, Approach, Aqueous Solutions, Batch, Batch Mode, Biosorbent, Biosorption, Biosorption, Biosorption Kinetics, Capacity, Chemical, Chemisorption, Chromium, Column, Concentration, Cr(VI), Data, Desorption, Efficiency, Equilibrium, Experimental, Hexavalent Chromium, Ions, Isotherm Models, Isotherms, Kinetics, Langmuir, Langmuir Model, Loading, Mode, Model, Performance, pH, pH Value, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo Second-Order, Pseudo-Second-Order, Rate Limiting Step, Reduction, Removal, Sawdust, Second Order, Second Order Kinetics, Second-Order, Second-Order Kinetics, Solutions, Sorption, Tannery Wastewater, Treated Sawdust, Value, Waste-Water, Wastewater

? Chen, D.Z., Zhang, J.X. and Chen, J.M. (2010), Adsorption of methyl tert-butyl ether using granular activated carbon: Equilibrium and kinetic analysis. *International Journal of Environmental Science and Technology*, **7** (2), 235-242.

Full Text: [2010\Int J Env Sci Tec7, 235.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20235.pdf)

Abstract: The adsorption of methyl tert-butyl ether by granular activated carbon was investigated. The experimental data were analyzed using the Freundlich isotherm and the Langmuir isotherm. Although equilibrium data were found to follow Freundlich isotherm model, it were fitted better by the Langmuir model with a maximum adsorption capacity of 204.1 mg/g. The kinetic data obtained at different concentrations were analyzed to predict the constant rate of adsorption using three common kinetic models: pseudo-first-order, pseudo-second-order equation and intraparticle diffusion equation. The pseudo-second-order model was suitable for describing the adsorption kinetics for the removal of methyl tert-butyl ether from aqueous solution onto granular activated carbon. Both the Lagergren first-order rate constant k(1) and pseudo-second-order rate constant k(2) decrease with increasing initial concentrations of methyl tert-butyl ether and the intraparticle diffusion rate constant k(p) shows the reverse characteristic. Analysis of sorption data using a boyd plot confirmed that external mass transfer is the main rate-limiting step at the initial stage of adsorption. Results illustrate that granular activated carbon is an effective adsorbent for methyl tert-butyl ether and also provide specific guidance into adsorption of methyl tert-butyl ether on granular activated carbon in contaminated groundwater.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetics, Analysis, Aqueous Solution, Aqueous-Solution, Biodegradation, Biological Treatment, Biosorption, Capacity, Carbon, Contaminated Groundwater, Data, Degradation, Diffusion, Equilibrium, Ether, Experimental, First Order, Freundlich, Freundlich Isotherm, Freundlich Isotherm Model, Granular Activated Carbon, Groundwater, Guidance, Intraparticle Diffusion, Intraparticle Diffusion Model, Isotherm, Isotherm Model, Kinetic, Kinetic Analysis, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Model, Liquid-Phase Adsorption, Mass Transfer, Mechanism, Model, Modeling, Models, Mtbe, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Equation, Pseudo-Second-Order Model, Pseudo-Second-Order Rate, Rate Constant, Rate Limiting Step, Rate-Limiting Step, Reactive Dyes, Removal, Solution, Sorption, Water

? Pandey, P.K., Sharma, S.K. and Sambi, S.S. (2010), Kinetics and equilibrium study of chromium adsorption on zeoliteNaX. *International Journal of Environmental Science and Technology*, **7** (2), 395-404.

Full Text: [2010\Int J Env Sci Tec7, 395.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20395.pdf)

Abstract: This study aims to report Batch adsorption study of hexavalent chromium, Cr(VI) on zeoliteNaX. Kinetics of Cr (VI) adsorption and adsorption isotherms were determined by varying operating parameters such as pH, initial concentration, temperature and contact time. ZeoliteNaX was found to remove Cr (VI) in acidic solutions down to ppm level at pH of about 4. Removal rate of Cr (VI) was found to decrease as pH rises above 4.0. Langmuir, Freundlich, Temkin and Redlich-Peterson models were applied to adsorption equilibrium data to find the best amongst these models. Langmuir model with R-2 = 0.9711 best fits the adsorption data. The kinetics of adsorption was found to follow the first order reversible reaction. The separation parameter, R-L values of less than 1.0 i.e., 0.7369, 0.5834 and 0.4828 corresponding to initial concentrations of 10, 20 and 30 mg/L, respectively indicated that adsorption of Cr (VI) on zeoliteNaX is favoured. The estimated values of thermodynamic parameters such as heat of adsorption and standard gibbs free energy confirmed the exothermic nature of adsorption of Cr (VI) on zeoliteNaX.

Keywords: Activated Carbon, Adsorption, Adsorption Equilibrium, Adsorption Isotherms, Aqueous-Solutions, Batch Adsorption, Biosorption, Chromium, Chromium Adsorption, Concentration, Cr(VI), Data, Diffusion, Energy, Equilibrium, Exchange, Exothermic, First, First Order, First Order Reversible Reaction, Freundlich, Heat of Adsorption, Heavy-Metal Ions, Hexavalent Chromium, Isotherm, Isotherms, Kinetics, Kinetics of Adsorption, Langmuir, Langmuir Model, Mass Transfer, Model, Models, Ph, Reaction, Redlich-Peterson, Regeneration, Removal, Removal Rate, Separation, Soils, Solutions, Sorption, Standard, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Time, VI, Waste-Water

? Tashauoei, H.R., Attar, H.M., Amin, M.M., Kamali, M., Nikaeen, M. and Dastjerdi, M.V. (2010), Removal of cadmium and humic acid from aqueous solutions using surface modified nanozeolite A. *International Journal of Environmental Science and Technology*, **7** (3), 497-508.

Full Text: [2010\Int J Env Sci Tec7, 497.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20497.pdf)

Abstract: The sorption of cadmium and humic acids from aqueous solutions using surface-modified nanozeolite A has been investigated under various examination conditions. The morphology of untreated and treated nanozeolite was studied under scanning electron microscope and transmission electron microscope. Isotherms of cadmium adsorption onto surface-modified nanozeolite A were studied at different pH, solid to liquid ratio, adsorbate concentration and interaction time. Kinetic and equilibrium studies were conducted and the equilibrium data have been analyzed using Langmuir and Freundlich isotherm models. The study revealed that experimental results were in agreement with the Freundlich model. The Langmuir monolayer adsorption capacity was found to be 1666.67 g cadmium and 6.75 g humic acid per gram of modified nanozeolite A, which is higher than that of reported value for other zeolites. The sorption ability was enhanced by surface modification and reduction in size and enabled the zeolite to adsorb cadmium. The adsorption of cadmium and humic acid on nanozeolite was found to be the highest at pH 6 and 3, respectively. Results showed that solid to liquid ratio and pH are the most important factors for cadmium and humic acid removal, respectively. Effect of competitive ions was studied and results showed that there is no competition between cadmium and humic acid sorption and presence of these ions.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherms, Aluminum, Bentonite, Cadmium, Chromate, Competition, Equilibrium, Freundlich, Freundlich Isotherm, Heavy-Metals, Humic Acids, Ion-Exchange, Isotherm, Isotherms, Kinetic, Langmuir, Modification, Modified Zeolite, Nanozeolite, Natural Clinoptilolite, Removal, Sorption, Surface Modification, Waste-Water, Zeolite

? Nounou, M.N. and Nounou, H.N. (2010), Multiscale estimation of the Freundlich adsorption isotherm. *International Journal of Environmental Science and Technology*, **7** (3), 509-518.

Full Text: [2010\Int J Env Sci Tec7, 509.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20509.pdf)

Abstract: Adsorption plays an important role in water and wastewater treatment. The analysis and design of processes that involve adsorption rely on the availability of isotherms that describe these adsorption processes. Adsorption isotherms are usually estimated empirically from measurements of the adsorption process variables. Unfortunately, these measurements are usually contaminated with errors that degrade the accuracy of estimated isotherms. Therefore, these errors need to be filtered for improved isotherm estimation accuracy. Multiscale wavelet based filtering has been shown to be a powerful filtering tool. In this work, multiscale filtering is utilized to improve the estimation accuracy of the Freundlich adsorption isotherm in the presence of measurement noise in the data by developing a multiscale algorithm for the estimation of Freundlich isotherm parameters. The idea behind the algorithm is to use multiscale filtering to filter the data at different scales, use the filtered data from all scales to construct multiple isotherms and then select among all scales the isotherm that best represents the data based on a cross validation mean squares error criterion. The developed multiscale isotherm estimation algorithm is shown to outperform the conventional time-domain estimation method through a simulated example.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Freundlich, Freundlich Isotherm, Ions, Isotherm, Isotherms, Kinetics, Models, Multiscale Representation, Noise Filtering, Parameter Estimation, Parsimony, Removal, System-Identification, Treatment, Wastewater, Wastewater Treatment, Water, Wavelet Shrinkage

? Bidhendi, M.E., Karbassi, A.R., Baghvand, A., Saeedi, M. and Pejman, A.H. (2010), Potential of natural bed soil in adsorption of heavy metals in industrial waste landfill. *International Journal of Environmental Science and Technology*, **7** (3), 545-552.

Full Text: [2010\Int J Env Sci Tec7, 545.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20545.pdf)

Abstract: Development of higher welfare could not be realized unless by energy consumption and other natural resources. Growth of industrial complexes has shown an unprecedented trend during recent years. Many of these towns have no treatment systems for the industrial wastes leachates. Besides, the chemical composition of wastes in such complexes varies considerably due to the different kinds of industries. It is endeavored in the present work to study the natural potential of soil to treat leachate of such industrial wastes. For this purpose, the Aliabad industrial complex in Tehran - Garmsar road was selected as the study area. The potential of adsorption of elements such as nickel, copper, cadmium, zinc, chromium, lead and manganese was investigated. The results indicated that the soil potential to adsorb heavy metals (except for manganese) was very high (95 %) in the adsorption of heavy metals ( except for manganese). Further, chemical partitioning studies revealed that heavy metals are associated with various soil phases such as loosely bonded ions, sulfide and organics to various extents. Among the mentioned soil phases, one can deduce that major portion of metal contaminants is absorbed as loosely bonded ions. Organic bond and sulfide bond are in the 2(nd) and 3(rd) positions of metal contaminants adsorption, respectively. The results of the present study apparently showed that soil column had ample capacity to adsorb metal contaminants. Thus, determination of soil potential in adsorption of heavy metals during site selection is as important criteria.

Keywords: Adsorption, Aqueous-Solutions, Cadmium, Chemical Composition, Complex, Copper, Groundwater, Heavy Metal, Heavy Metals, Impact, Industry, Jordan, Leachate, Leachate, Nickel, Pollution, Removal, Sediments, Soil, Treatment, Trend, Waste Landfill, Water, Wheat Bran, Zinc

? Ashraf, M.A., Maah, M.J. and Yusoff, I. (2010), Study of mango biomass (Mangifera indica L) as a cationic biosorbent. *International Journal of Environmental Science and Technology*, **7** (3), 581-590.

Full Text: [2010\Int J Env Sci Tec7, 581.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20581.pdf)

Abstract: Unfertilizable fruiting buds of mango plant Mangifera Indica L, an agrowaste, is used as a biomass in this study. The efficacy of the biosorbent was tested for the removal of lead, copper, zinc and nickel metal ions using batch experiments in single and binary metal solution under controlled experimental conditions. It is found that metal sorption increases when the equilibrium metal concentration rises. At highest experimental solution concentration used (150 mg, L), the removal of metal ions were 82.76 % for lead, 76.60 % for copper, 63.35 % for zinc and 59.35 % for nickel while at lowest experimental solution concentration (25 mg, L), the removal of metal ions were 92.00% for lead, 86.84 % for copper, 83.96 % for zinc and 82.29 % for nickel. Biosorption equilibrium isotherms were plotted for metal uptake capacity (q) against residual metal concentrations (C-f) in solution. The q versus C f sorption isotherm relationship was mathematically expressed by Langmuir and Freundlich models. The values of separation factor were between zero and one indicating favourable sorption for four tested metals on the biosorbent. The surface coverage values were approaching unity with increasing solution concentration indicating effectiveness of biosorbent under investigation. The non-living biomass of Mangifera indica L present comparable biosorption capacity for lead, copper, zinc and nickel metal ions with other types of biosorbent materials found in literature and is effective to remove metal ions from single metal solutions as well as in the presence of other co-ions with the main metal of solution.

Keywords: Batch, Biomass, Biosorption, Cadmium, Copper, Cu, Efficacy, Equilibrium, Freundlich, Isotherm, Isotherms, Kinetics, Langmuir, Metal Ions, Multi Metal, Ni(II), Nickel, Pollution, Removal, Single Metal, Sorption, Uranium, Waste-Water, Zinc, Zn

? Alihosseini, A., Taghikhani, V., Safekordi, A.A. and Bastani, D. (2010), Equilibrium sorption of crude oil by expanded perlite using different adsorption isotherms at 298.15 K. *International Journal of Environmental Science and Technology*, **7** (3), 591-598.

Full Text: [2010\Int J Env Sci Tec7, 591.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20591.pdf)

Abstract: During the past decades, a significant increase occurred in accidental oil spill in the aquatic environments. In this regard, oil spill in Marine freshwater is still considered as a major environmental hazard. In this research, the experimental data on the sorption capacity of expanded perlite to crude oil were correlated with the equilibrium isotherm of Langmuir, Freudlich, Tempkin and the three parameter Redlich-Peterson isotherms. The results obtained from each specified isotherms were compared and accuracy of the models were favorably discussed. Accuracy of each model using the error function were evaluated. Moreover, the effect of type of objective function on the final results was investigated. To bring up the idea; the sum of square of the average squares of the errors, the sum of the squares of the errors, the hybrid fractional error function, Marquardt’s percent standard deviation and Chi-Square objective function were used and the accuracy was obtained using each objective function. The results showed that the Redlich-Peterson model can better represent the equilibrium isotherm data for the crude oil to be up taken on the expanded perlite.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Aqueous-Solution, Basic Dye Adsorption, Chromium, Crude Oil, Diffusion, Equilibrium, Expanded Perlite, Fibers, Isotherm, Isotherms, Kinetics, Langmuir, Liquid-Phase Adsorption, Methylene-Blue, Research, Sorption, Sorption Capacity

? Ifelebuegu, A.O., Theophilus, S.C. and Bateman, M.J. (2010), Mechanistic evaluation of the sorption properties of endocrine disrupting chemicals in sewage sludge biomass. *International Journal of Environmental Science and Technology*, **7** (4), 617-622.

Full Text: [2010\Int J Env Sci Tec7, 619.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20619.pdf)

Abstract: This study investigated the sorption behaviour of two endocrine disrupting chemicals; 17 beta-estradiol (E2) and 17 beta-ethinylestradiol and their thermodynamic properties in an activated sludge biomass. The partition coefficient values measured for E2 and EE2 at varying temperatures range from 245 - 604 L/kg (log K-d 2.39 -2.78) and 267 - 631 L/kg (Log K-d 2.43 - 2.80), respectively. The chemisorption K-d values were inversely related to temperature. The average percentages of E2 and EE2 adsorbed to the solid phase at 4.3 % dry solid were 87.2 % and 92.5 %, respectively. Sorption of E2 and EE2 to the activated sludge biomass was found to be spontaneous and entropy retarded with Delta G values in the range of -13 to -16 KJ/mol and Delta S value of -105.2J/mol/K and 96.7 J/mol/k for E2 and EE2, respectively. The enthalpy changes for E2 and EE2 were -45.7KJ/mol and -43.4KJ/mol respectively, demonstrating that the sorption process is exothermic. The values of the enthalpy changes also show that the mechanism of sorption is physisorption with some element of chemisorption.

Keywords: Activated Carbon, Adsorption, Biomass, Bisphenol-A, Enthalpy, Entropy, Evaluation, Municipal Waste-Water, Partitioning Coefficient, Pharmaceuticals, Removal, Retention Time, Sewage Sludge, Sludge, Sorption, Steroid Estrogens, Systems, Treatment Plant

? Vohra, M.S. (2010), Adsorption of lead, ethylenediaminetetraacetic acid and lead-ethylenediaminetetraacetic acid complex onto granular activated carbon. *International Journal of Environmental Science and Technology*, **7** (4), 687-696.

Full Text: [2010\Int J Env Sci Tec7, 687.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20687.pdf)

Abstract: This study investigated simultaneous removal of lead and ethylenediaminetetraacetic acid from synthetic wastewater samples using granular activated carbon adsorption. Data from a 1×10-4 M lead-ethylenediaminetetraacetic acid adsorption isotherm study fitted well to Freundlich isotherm. Furthermore, for the pH-dependent 1×10-4 M lead-ethylenediaminetetraacetic acid study both lead and ethylenediaminetetraacetic acid adsorptions increased reaching values of 82 % and 93 % respectively at pH 5.8. However, a further increase in pH resulted in decreasing but near equal lead and ethylenediaminetetraacetic acid removals. Results for the 2×10-4 M lead-ethylenediaminetetraacetic acid system showed a behavior that was qualitatively similar to the 1×10-4 M lead-ethylenediaminetetraacetic acid findings. However, the 1×10-3 M lead-ethylenediaminetetraacetic acid study showed only a decreasing adsorption trend. An increasing-decreasing type lead, ethylenediaminetetraacetic acid adsorption behavior was also noted for the 1×10-4 M lead, 2×10-4 M ethylenediaminetetraacetic acid system. Nevertheless for the 2×10-4 M lead, 1×10-4 M ethylenediaminetetraacetic acid system, lead removal at increased pH was comparatively higher. Furthermore, results from a continuous column study completed at 1×10-4 M lead and 0.75×10-4 M ethylenediaminetetraacetic acid showed high saturation times both for lead and ethylenediaminetetraacetic acid. Results from the present work show that a notable removal of aqueous phase lead and ethylenediaminetetraacetic acid could be achieved using activated carbon adsorption. The details related to the effect of pH and pollutants’ concentration on the overall adsorption efficiency, as reported in the present work, would be of much use for an effective carbon adsorption process design for the treatment of respective wastewaters.

Keywords: Activated Carbon, Adsorption, Aqueous-Solution, Complex, Date Pits, Edta, Equilibrium, Ethylenediaminetetraacetic Acid, Freundlich, Freundlich Isotherm, Ions, Isotherm, Kinetics, Lead, Pb(II), Removal, Simultaneous Recovery, Treatment, Trend, Waste-Water, Wastewater

? Onundi, Y.B., Mamun, A.A., Al Khatib, M.F. and Ahmed, Y.M. (2010), Adsorption of copper, nickel and lead ions from synthetic semiconductor industrial wastewater by palm shell activated carbon. *International Journal of Environmental Science and Technology*, **7** (4), 751-758.

Full Text: [2010\Int J Env Sci Tec7, 751.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20751.pdf)

Abstract: Granular activated carbon produced from palm kernel shell was used as adsorbent to remove copper, nickel and lead ions from a synthesized industrial wastewater. Laboratory experimental investigation was carried out to identify the effect of pH and contact time on adsorption of lead, copper and nickel from the mixed metals solution. Equilibrium adsorption experiments at ambient room temperature were carried out and fitted to Langmuir and Freundlich models. Results showed that pH 5 was the most suitable, while the maximum adsorbent capacity was at a dosage of 1 g, L, recording a sorption capacity of 1.337 mg, g for lead, 1.581 mg, g for copper and 0.130 mg, g for nickel. The percentage metal removal approached equilibrium within 30 min for lead, 75 min for copper and nickel, with lead recording 100 %, copper 97 % and nickel 55 % removal, having a trend of Pb2+ > Cu2+ > Ni2+. Langmuir model had higher R-2 values of 0.977, 0.817 and 0.978 for copper, nickel and lead respectively, which fitted the equilibrium adsorption process more than Freundlich model for the three metals.

Keywords: Activated Carbon, Adsorbents, Adsorption, Aqueous-Solution, Biosorption, Coconut, Copper, Equilibrium, Freundlich, Granular Activated Carbon, Heavy Metals, Iron, Isotherm, Kinetics, Langmuir, Low-Cost, Metal Removal, Metals, Nickel, Removal, Sorption, Trend, Wastewater, Zinc

? Okoye, A.I., Ejikeme, P.M. and Onukwuli, O.D. (2010), Lead removal from wastewater using fluted pumpkin seed shell activated carbon: Adsorption modeling and kinetics. *International Journal of Environmental Science and Technology*, **7** (4), 793-800.

Full Text: [2010\Int J Env Sci Tec7, 793.pdf](2010/Int%20J%20Env%20Sci%20Tec7,%20793.pdf)

Abstract: Activated carbon produced from fluted pumpkin (*Telfairia occidentalis*) seed shell was utilized for the removal of lead (II) ion from simulated wastewater. Adsorption tests were carried out in series of batch adsorption experiments. Several kinetic models (Bhattacharya-Venkobacher, Elovich, pseudo first and second order, intra-particle and film diffusion) were tasted for conformity to the experimental data obtained. The Langmuir and Freundlich adsorption models were also used to test the data. The amount of lead (II) ion adsorbed at equilibrium from a 200 mg/L solute concentration was 14.286 mg/g. The experimental data conform very well to the pseudo-second order equation where equilibrium adsorption capacities increased with increasing initial lead (II) concentration. The rate of the adsorption process was controlled by the film (boundary layer) diffusion as the film diffusion co-efficient values obtained from data analysis were of the order of 106 cm2/s. From the plots, the linear regression coefficient (R2) of the Langmuir model was higher than that of the Freundlich: the adsorption isotherm obeyed the Langmuir model better than the Freundlich model.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacities, Adsorption Isotherm, Adsorption Modeling, Analysis, Aqueous-Solutions, Batch, Batch Adsorption, Biosorption, Boundary Layer, Carbon, Chromium VI, Concentration, Data, Data Analysis, Diffusion, Diffusion Coefficient, Elovich, Equilibrium, Experimental, Experiments, Film Diffusion, First, Freundlich, Freundlich Model, Heavy-Metals, Intraparticle Diffusion, Ions, Isotherm, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Langmuir, Langmuir Model, Lead, Lead(II) Ions, Lead Removal, Linear Regression, Model, Modeling, Models, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Regression, Removal, Second Order, Second-Order, Sorbent, Sorption, Sorption, *Telfairia occidentalis*, Thermodynamics, Wastewater

? Mousavi, H.Z. and Seyedi, S.R. (2011), Nettle ash as a low cost adsorbent for the removal of nickel and cadmium from wastewater. *International Journal of Environmental Science and Technology*, **8** (1), 195-202.

Full Text: [2011\Int J Env Sci Tec8, 195.pdf](2011/Int%20J%20Env%20Sci%20Tec8,%20195.pdf)

Abstract: This study was focused on nettle ash as an alternative adsorbent for the removal of nickel(II) and cadmium(II) from wastewater. Batch experiments were conducted to determine the factors affecting adsorption of nickel(II) and cadmium(II). The adsorption process is affected by various parameters such as contact time, solution pH and adsorbent dose. The optimum pH required for maximum adsorption was found to be 6. The experimental data were tested using Langmuir, Freundlich and Tempkin equations. The data were fitted well to the Langmuir isotherm with monolayer adsorption capacity of 192.3 and 142.8 mg/g for nickel and cadmium, respectively. The adsorption kinetics were best described by the pseudo second order model. The cost of removal is expected to be quite low, as the adsorbent is cheap and easily available in large quantities. The present study showed that nettle ash was capable of removing nickel and cadmium ions from aqueous solution.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dose, Adsorption, Adsorption, Adsorption Capacity, Adsorption Kinetics, Alternative, Aqueous Solution, Aqueous-Solution, Biosorption, Cadmium, Cadmium Ions, Capacity, Cost, Data, Experimental, Experiments, Fly-Ash, Freundlich, Heavy Metal Ions, Heavy-Metal Ions, Ions, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Lead, Low Cost, Low Cost Adsorbent, Model, Monolayer, Nettle Ash, Nickel, Pb, pH, Pseudo Second Order, Pseudo-Second-Order, Removal, Second Order, Second-Order, Solid-Waste, Solution, Sorption, Wastewater

? Geethakarthi, A. and Phanikumar, B.R. (2011), Adsorption of reactive dyes from aqueous solutions by tannery sludge developed activated carbon: Kinetic and equilibrium studies. *International Journal of Environmental Science and Technology*, **8** (3), 561-570.

Full Text: [2011\Int J Env Sci Tec8, 561.pdf](2011/Int%20J%20Env%20Sci%20Tec8,%20561.pdf)

Abstract: Adsorption kinetic and equilibrium studies of two reactive dyes, namely, Reactive Red 31 and Reactive Red 2 were conducted. The equilibrium studies were conducted for various operational parameters such as initial dye concentration, pH, agitation speed, adsorbent dosage and temperature. The initial dye concentration was varied from 10 - 60 mg/L, pH from 2 - 11, agitation speed from 100-140 rpm, adsorbent dosage from 0.5 g to 2.5 g and temperature from 30ºC - 50ºC respectively. The activated carbon of particle size 600 mu m was developed from preliminary tannery sludge. The dye removal capacity of the two reactive red dyes decreased with increasing pH. The zero point charge for the sludge carbon was 9.0 and 7.0 for the two dyes, respectively. Batch kinetic data investigations on the removal of reactive dyes using tannery sludge activated carbon have been well described by the Lagergren plots. It was suggested that the Pseudo second order adsorption mechanism was predominant for the sorption of the reactive dyes onto the tannery sludge based carbon. Thus, the adsorption phenomenon was suggested as a chemical process. The adsorption data fitted well with Langmuir model than the Freundlich model. The maximum adsorption capacity(q(0)) from Langmuir isotherm were found to have increased in the range of 23.15-39.37 mg/g and 47.62-55.87 mg/g for reactive dyes reactive red 31 and reactive red 2, respectively.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Kinetic, Batch, Decolorisation, Degradation, Dye, Dye Removal, Dyes, Effluent, Equilibrium, Freundlich, Isotherm, Kinetic, Lagergren Plot, Langmuir, Langmuir Isotherm, Mechanism, Metal Hydroxide Sludge, pH, Remediation, Removal, Sawdust, Sorption, Surface Area, Temperature, Textile Waste-Water, Wastewaters, Zero Point Charge

? Dizadji, N. and Anaraki, N.A. (2011), Adsorption of chromium and copper in aqueous solutions using tea residue. *International Journal of Environmental Science and Technology*, **8** (3), 631-638.

Full Text: [2011\Int J Env Sci Tec8, 631.pdf](2011/Int%20J%20Env%20Sci%20Tec8,%20631.pdf)

Abstract: In this study, adsorption of copper and chromium was investigated by residue of brewed tea (Tea Waste) from aqueous solutions at various values of pH. It was shown that adsorbent dose, copper and chromium ion concentrations in such solutions influence the degree of these heavy metal ions’ obviation. The adsorption level of the prepared solutions was measured by visible spectrophotometer. The tea residue adsorbed copper(II) and chromium (VI) ions at initial solution pH by 25 % and 3 %, respectively. During the experiments the peak adsorption occured in hydrated copper nitrate aqueous solution at pH range of 5-6. Likewise the maximum adsorption appeared in potassium chromate aqueous solution at pH range of 2-3. In addition, tea residue adsorbed about 60 mg/g of copper(II) ion at pH=5, while chromium adsorption was registered at about 19 mg/g at pH=2. The data obtained at the equilibrium state, was compared with Langmuir and Freundlich models. Results showed that regarding the kinetics of adsorption, the uptake of copper(II) and chromium (VI) ions by tea residue was comparatively faster, with the adsorption process exhaustion completed within the first 20 min of the experiments. Furthermore, results revealed that adsorption data concerning the kinetic phase is closely correlated with a pseudo-second order model with R-2 > 0.99 for copper(II) and chromium (VI) ions.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Kinetics, Aqueous Solution, Chromate, Chromium, Copper, Equilibrium, Fly-Ash, Freundlich, Heavy Metal, Heavy-Metal Adsorption, Ions, Isotherms, Kinetic, Kinetic-Analysis, Kinetics, Langmuir, Langmuir and Freundlich Models, pH, Removal, Sorption, Uptake, VI, Waste-Water

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? Kumar, A., Bisht, B.S., Joshi, V.D. and Dhewa, T. (2011), Review on bioremediation of polluted environment: A management tool. *International Journal of Environmental Sciences*, **1** (6), 1079-1093.

Full Text: [2011\Int J Env Sci1, 1079.pdf](2011/Int%20J%20Env%20Sci1,%201079.pdf)

Abstract: The term bioremediation has been introduced to describe the process of using biological agents to remove toxic waste from environment. Bioremediation is the most effective management tool to manage the polluted environment and recover contaminated soil. Bioremediation is an attractive and successful cleaning technique for polluted environment. Bioremediation has been used at a number of sites worldwide, including Europe, with varying degrees of success. Bioremediation, both in situ and ex situ have also enjoyed strong scientific growth, in part due to the increased use of natural attenuation, since most natural attenuation is due to biodegradation. Bioremediation and natural attenuation are also seen as a solution for emerging contaminant problems, e.g. endocrine disrupters, landfill stabilization, mixed waste biotreatment and biological carbon sequestration. Microbes are very helpful to remediate the contaminated environment. Number of microbes including aerobes, anaerobes and fungi are involved in bioremediation process.

Keywords: Bioremediation, Biotechnology, Microbes, Carbon Squestration

# Title: International Journal of Environmental Studies

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? Agrawal, Y.K., Patel, M.P. and Merh, S.S. (1981), Lead in soils and plants: Its relationship to traffic volume and proximity to highway (Lalbag, Baroda-City). *International Journal of Environmental Studies*, **16** (3-4), 222-224.

Mazouak, A. and Azmani, A. (2001), A new adsorbent for the efficient elimination of heavy metals from industrial dismissals of Tetouan area. *International Journal of Environmental Studies*, **4**, 538-547.

Abstract: The mercury and the other heavy metals conventionally the most poisonous as, the mercury, the chromium, the copper, the lead, the zinc, etc., could cause some serious problems to the environment, in particular in the water of sea (fish) and of rivers (agriculture) [1], who transmits then to the man by different ways.

These metals are again very poisonous same to some weak concentrations, and their contents in the industrial dismissals are set by some international norms imposed by the WHO.

Then we tried to reduce the concentration of these metals in the industrial waste water of Tetouan area in using the adsorption method.

Adsorption of Hg(II) obeyed the Langmuir isotherm. The applicability of the Lagergren kinetic model has also been investigated. A comparative study with a commercial powder activated carbon (PAC) showed that the adsorption capacity of diatomite was 17 times larger than of PAC.

Keywords: Industrial Waste Water, Heavy Metals, Diatomite, Adsorption, Isotherms

? Li, T.C., Li, X.G. and Zhu, S.L. (2004), Biosorption of heavy metals in an aqueous solution by aerobic biofilm subjected to an external dc electric field. *International Journal of Environmental Studies*, **61** (3), 253-264.

Full Text: Int J Env Stu61, 253

Abstract: Electro biosorption is a potential technology for reclamation of wastewater laden with heavy metal ions present in low concentrations. In this study, multi-species micro-organisms in aerobic biofilms demonstrated a great capacity to adsorb, and a direct current (DC) electric field with low intensity was able to promote the directional movements of heavy metals in wastewater and strengthen the interactions between heavy metals and microbes in biofilms. A two-dimensional model was established to describe wastewater flow and the transfer and adsorption of heavy metal ions by biofilms in a weak DC electric field. The simulation results for low concentrations of Cu2 + or Cr3 + ions in outlet water were tested by an electro biosorption experiment, and the influence of the electric field intensity, the inlet concentration of heavy metal ions and the wastewater flow velocity on the equilibrium adsorption amount are discussed in detail. The equilibrium adsorption amount increased rapidly in the initial stage, and became slow afterwards, along with the increase in the electro field intensity. There was a linear relationship between the equilibrium adsorption amount and the inlet concentration of heavy metal ions. Wastewater flow velocity had an obvious effect on the equilibrium adsorption amount; the equilibrium adsorption amount decreased rapidly at first and the decrease subsequently became slow along with an increase in wastewater flow velocity.

Keywords: Electro Biosorption, External Electric Field, Langmuir, Heavy Metals

# Title: International Journal of Environmental Studies Section B Environmental Science and Technology

(Intern. J. Environmental Studies; *Int. J. Environ. Stud.*; IJES; IJEVAW; Internat. J. Environmental studied; Int. J. Environ. Studies; Int. J. Env. S.; Int’I. J. Envir. Stud.)

Full Journal Title: International Journal of Environmental Studies

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Subject Categories:

Impact Factor

Dissanayake, C.B. and Weerasooriya, S.V.R. (1981), Peat as a metal-trapping material in the purification of industrial effluents. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **17**, 233-238.

Viraraghavan, T. (1991), Use of peat in pollution control. International Journal of Environmental Studies Section B Environmental Science and Technology, **37**, 163-169.

Sharma, Y.C., Prasad, G. and Rupainwar, D.C. (1991), Removal of Ni(II) from aqueous solutions by sorption. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **37**, 183-191.

Sharma, Y.C., Prasad, G. and Rupainwar, D.C. (1992), Heavy metal pollution of river Gang in Mirzapur, India. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **40**, 41-53.

? Haribabu, E., Upadhya, Y.D. and Upadhyay, S.N. (1993), Removal of phenols from effluents by fly ash. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **43**, 38-46.

Mathur, A., Menon, V.V., Rupainwar, D.C. and Sharma, Y.C. (1993), Multiple regression analysis of data on river Ganga in Varanasi city region with special emphasis on lead(II) and Cadmium(II). *International Journal of Environmental Studies Section B Environmental Science and Technology*, **44**, 245-250.

Panchanadikar, V.V. and Das, R.P. (1993), Biorecovery of zinc from industrial effluent using native microflora. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **44**, 251-257.

Yeh, R.Y.L., Liu, R.L.H., Chiu, H.M. and Hung, Y.T. (1993), Comparative study of adsorption capacity of various adsorbents fro treating dye wastewaters. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **44**, 259-284.

Uluatam, S.S. (1994), Eckenfelder’s model in a fluidized bed. International Journal of Environmental Studies Section B Environmental Science and Technology, **46**, 1-9.

Viraraghavan, T. and Rao, G.A.K. (1994), Adsorption of cadmium and chromium from wastewater by peat. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **44**, 9-27.

Panchanadikar, V.V. and Das, R.P. (1994), Biosorption process for removing lead(II) ions from aqueous effluents using *Pseudomonas* sp. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **46**, 243-250.

Rai, S., Narayanswami, M.S., Hasan, S.H., Rupainwar, D.C. and Sharma, Y.C. (1994), Removal of cadmium from wastewater by water hyacinth. *International Journal of Environmental Studies Section B Environmental Science and Technology*, **46**, 251-262.

# Title: International Journal of Epidemiology

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? Henderson, P.L., Fontaine, R.E. and Kyeyune, G. (1988), Guinea worm disease in Northern Uganda: A major public health problem controllable through an effective water programme. *International Journal of Epidemiology*, **17** (2), 434-440.

Full Text: [1988\Int J Epi17, 434.pdf](1988/Int%20J%20Epi17,%20434.pdf)

Abstract: A modified cluster survey was conducted in northwestern Uganda in 1984 to provide descriptive epidemiological data on dracunculiasis in a water programme target area. A total of 2014 people participated from 58 randomly selected clusters. Interviewers elicited information on age and sex of household members, number, date of emergence and location of Guinea worms, and type of and distance from water source in an endemic area. The survey yielded an incidence rate of 193 cases/1000 people per year, and a prevalence rate of 43 active cases/1000. Respondents who reported using ponds, reservoirs, valley tanks or rivers as their primary water source had the highest attack rates; those using boreholes, the lowest. Adolescents and adults differed little in risk, but the disease was less common among young children. Guinea worm disease displayed a bimodal seasonal pattern. We concluded that the survey method used for determining dracunculiasis incidence was appropriate in this setting. The incidence of this disease may be significantly reduced in Uganda through the country’s commitment to the International Drinking Water Supply and Sanitation Decade.

? Esrey, S.A., Collett, J., Miliotis, M.D., Koornhof, H.J. and Makhale, P. (1989), The risk of infection from *Giardia lamblia* due to drinking water supply, use of water, and latrines among preschool children in rural Lesotho. *International Journal of Epidemiology*, **18** (1), 248-253.

Full Text: [1989\Int J Epi18, 248.pdf](1989/Int%20J%20Epi18,%20248.pdf)

Abstract: Stool samples were collected from 267 rural, preschool children in four districts in Lesotho during October-November, (1984). Sixty-three children (23.6%) were tested positive for *Giardia lamblia*, the most commonly recovered parasite from stool samples. The use of low amounts of water for personal hygiene was associated significantly with having G. lamblia (OR = 2.42), but the use of traditional, non-improved drinking water sources (OR = 1.38) or lack of latrines (OR = 0.94) was not. Although G. lamblia may be primarily waterborne in developed countries, the amount of water that is used for personal and domestic hygiene may be more important than the quality of drinking water in developing countries. Other risk factors that were identified to be associated significantly with having or not having *Giardia* were child older than 24 months (OR = 6.79), mother less than 20 years of age (OR = 5.18), residing in Mohales Hoek district (OR = 2.33), and possessing several agricultural tools (OR = 0.70).

? Paci, E. and Duffy, S.W. (1991), Modeling the analysis of breast-cancer screening programs: Sensitivity, lead time and predictive value in the florence district program (1975-1986). *International Journal of Epidemiology*, **20** (4), 852-858.

Full Text: [1991\Int J Epi20, 852.pdf](1991/Int%20J%20Epi20,%20852.pdf)

? Simchen, E., Jeeraphat, S., Shihab, S. and Fattal, B. (1991), An epidemic of waterborne Shigella gastroenteritis in Kibbutzim of western Galilee in Israel. *International Journal of Epidemiology*, **20** (4), 1081-1087.

Full Text: [1991\Int J Epi20, 1081.pdf](1991/Int%20J%20Epi20,%201081.pdf)

Abstract: In an epidemic of Shigella sonnei gastroenteritis, probably waterborne, 1216 people were affected within three weeks, 302 of them members of communal settlements, the kibbutzim. A descriptive study of the epidemic in six affected kibbutzim in the area showed that the highest rates of diarrhoea occurred in a kibbutz that received its drinking water solely from the allegedly contaminated well. People at high risk within the kibbutzim were temporary visitors from Europe and the US (the volunteers), children aged 1 to 5 years, adult women, and children and their mothers in kibbutzim where the sleeping arrangements for the children was in ‘children’s houses’.

? Lan, C.F., Lin, I.F. and Wang, S.J. (1995), Fluoride in drinking water and the bone mineral density of women in Taiwan. *International Journal of Epidemiology*, **24** (6), 1182-1187.

Full Text: [1995\Int J Epi24, 1182.pdf](1995/Int%20J%20Epi24,%201182.pdf)

: BACKGROUND: The current evidence on effect of fluoridation in drinking water on bone is inconsistent. This study was undertaken to assess the effect of fluoride concentration in drinking water on bone mineral density (BMD) in Taiwanese women.

METHODS: The study subjects included 248 women aged > or = 40 years who reside in naturally fluoridated and adjacent areas. The individual fluoride concentration of the drinking water and the BMD of the subjects’ lumbar spines were assessed.

RESULTS: Women aged 46-65 years living in areas which have fluoride levels < 0.6 mg/l (mean = 0.18 mg/l; n = 130) had slightly lower bone densities than women living in areas with levels > or = 0.6 mg/l (mean 0.98 mg/l, n = 118). Only the age groups 46-50 and 61-65 years proved to be statistically significant. After controlling for age and body mass index, the BMD of those who had a dose > or = 1.0 mg/l is notably higher than the reference group (< or = 0.6 mg/l). After stratification by menopausal status, fluoride appeared to have no association with bone density in postmenopausal women.

CONCLUSIONS: The BMD of the subjects from the area with a fluoride dose > 1 mg/l were significantly higher than those from the reference group (fluoride < 0.6 mg/l) for premenopausal women. There is no significant association between BMD and fluoride for postmenopausal women in Taiwan.

? Peters, J., Hedley, A.J., Wong, C.M., Lam, T.H., Ong, S., Liu, J.G. and Spiegelhalter, D.J. (1996), Effects of an ambient air pollution intervention and environmental tobacco smoke on children’s respiratory health in Hong Kong. *International Journal of Epidemiology*, **25** (4), 821-828.

Full Text: [1996\Int J Epi25, 821.pdf](1996/Int%20J%20Epi25,%20821.pdf)

Abstract: Background. Two-thirds of complaints received by the Hong Kong Environmental Protection Department in 1988 were related to poor air quality. In July 1990 legislation was implemented to reduce fuel sulphur levels. The objective of this study was to measure the impact of the intervention on respiratory health in primary school children. Methods. In all, 3521 children, mean age 9.51 years (SD = 0.78), from two districts with good and poor air quality respectively before intervention were followed yearly from 1989 to 1991. Children and parents reported the children’s respiratory symptoms using self-completed questionnaires. Factor analysis was used to derive independent scores from 12 symptoms. Four groups of related symptoms were identified and binary variables (presence of any symptom in each group) were treated as dependent variables in modelling using generalized estimating equations procedures. Results. In 1989 and 1990 an excess of respiratory symptoms was observed in the polluted compared with unpolluted district. The significant effects (odds ratio [OR], 95% confidence interval [Cl], P value) associated with living in the polluted district were: cough and sore throat (OR = 1.22, 95% Cl: 1.04-1.43, P < 0.01) and wheezing (OR = 1.35, 95% Cl: 1.10-1.66, P < 0.01). After the intervention, in the polluted district only, sulphur dioxide levels fell by up to 80% and sulphate concentrations in respirable particulates by 38%. Between 1989 and 1990-1991 there was a greater decline in the polluted compared with the unpolluted district for reported symptoms of cough or sore throat, phlegm and wheezing. The risks to respiratory health for children exposed to tobacco smoke in the home were higher than those for air pollution in both 1989 and 1990 and remained unchanged in 1991. Conclusions. Air quality can be improved by fuel controls but an effective intersectoral approach is required if other risks from environmental tobacco smoke are to be avoided.

? Rahlenbeck, S.I. and Kahl, H. (1996), Air pollution and mortality in East-Berlin during the winters of 1981-1989. *International Journal of Epidemiology*, **25** (6), 1220-1226.

Full Text: [1996\Int J Epi25, 1220.pdf](1996/Int%20J%20Epi25,%201220.pdf)

Abstract: Background. The relationship between air pollution and mortality in East Berlin was examined for the winters of 1981-1989. Methods. Regression analysis included daily mean levels of sulphur dioxide (SO2) and suspended particulates (SP) and was controlled for temperature, humidity, week-day, month and year. Moving averages of previous pollution were also used. Results. Each pollutant was a significant contributor to excess mortality. The strongest association was found for mortality lagged for 2 days, which depended significantly on the level of SP (beta for In SP = 0.876: P = 0.008) and SO2 (beta for In SO2 = 0.635: P = 0.012), when regressed separately, When omitting days with pollutant concentrations above 150 µg m-3, the pollutant-mortality relationship was linear and a 100 µg m-3 increase was associated with a 6.1% (SP) and 4.5% (SO2) mortality increase 2 days later, when pollutants were considered separately; this was reduced to 4.6% (SP) and 2.8% (SO2) increase, when both were considered simultaneously. Conclusions, The results show that short-term associations between air pollutants and mortality in East Berlin did exist during the winters 1981-1989. Since the coefficients for SP and SO2 dropped when controlling for the other pollutant species, a similar strength of association with mortality for both pollutants was found.

Charloux, A., Quoix, E., Wolkove, N., Small, D., Pauli, G. and Kreisman, H. (1997), The increasing incidence of lung adenocarcinoma-Reality or Artifact: A review of the epidemiology of lung adenocarcinoma. *International Journal of Epidemiology*, **26**, 14-23.

Full Text: [I\Int J Epi26, 14.pdf](I/Int%20J%20Epi26,%2014.pdf)

Abstract: Lung adenocarcinoma is the most common cell type in females (smokers or non-smokers) and in non-smoking males. Its incidence has been increasing in younger cohorts of males and females until very recent years. Changes in classification and in pathological techniques account for some of this increase. In females and non-smoker males, the increase could be partly due to a detection bias in former studies. Nevertheless, successive cohorts over time seem more likely to develop adenocarcinoma and less likely to develop squamous cell carcinoma. These differences between birth cohorts suggest that the increasing incidence of adenocarcinoma is not only due to changes in pathological diagnosis. Geographical differences are also observed: in Europe, the squamous cell type still predominates and an increase in incidence of adenocarcinoma has only been reported in the Netherlands. In Asia, in the 1960s and 1970s, the proportion of adenocarcinoma was higher than in North America or Europe and seems to be increasing, To what extent these differences are due to differences in establishing diagnosis remains unknown. Despite these biases in temporal and geographical trends detailed in this review, there has probably been a true increase in incidence of adenocarcinoma. An explanation for this should be sought in studies on detailed smoking history and passive smoking exposure, occupational exposure, diet and cooking, pollution and other environmental factors.

Ko, Y.C., Lee, C.H., Chen, M.J., Huang, C.C., Chang, W.Y., Lin, H.J., Wang, H.Z. and Chang, P.Y. (1997), Risk factors for primary lung cancer among non-smoking women in Taiwan. *International Journal of Epidemiology*, **26** (1), 24-31.

Full Text: [I\Int J Epi26, 24.pdf](I/Int%20J%20Epi26,%2024.pdf)

Abstract: Background. Although cigarette smoking is considered to be the mast important cause of lung cancer, smoking behaviour cannot fully explain the epidemiological characteristics of lung cancer in Taiwanese women, who rarely smoke but contract lung cancer relatively often, There are other causes of lung cancer that have produced variability in lung cancer incidence. Methods. A case-control study involving interviews with 117 female patients (including 106 non-smoking) suffering from lung cancer and the same number of individually matched hospital controls was conducted in Kaohsiung, Taiwan between 1992 and 1993. The questionnaire administered to cases and controls collected information on cigarette smoking and suspected risk factors for lung cancer. Multivariate logistic regression analysis was applied to assess smoking for all women and suspected risk factor; for non-smoking women. Results, The relationship between cigarette smoking and lung cancer was statistically significant although only a small proportion (9.4%) of female patients had smoked. However, the risk of contracting cancer for non-smoking women appears to be associated with certain cooking practices, especially preparing meals in kitchens not equipped with a fume extractor at cooking age of 20-40 years (odds ratio [OR] = 8.3; 95% confidence interval [CI]: 3.1-22.7. These factors and a history of pulmonary tuberculosis plus low consumption of fresh vegetables explained 78% of the summary attributable risks for non-smoking women in a multivariate logistic regression model, Conclusions. Exposure to fumes from cooking oils, when not reduced by an extractor, may be an important factor in causing lung cancer in non-smoking Taiwanese women.

van Asperen, I.A., Medema, G., Borgdorff, M.W., Sprenger, M.J. and Havelaar, A.H. (1998), Risk of gastroenteritis among triathletes in relation to faecal pollution of fresh waters. *International Journal of Epidemiology*, **27** (2), 309-315.

Full Text: [I\Int J Epi27, 307.pdf](I/Int%20J%20Epi27,%20307.pdf)

Abstract: BACKGROUND: We conducted a prospective cohort study among endurance athletes to investigate the effects of microbiological water quality on the risk of gastroenteritis after bathing in fresh waters that meet current water quality standards. We aimed to establish quantitative relationships, in order to evaluate current bathing water standards.

METHODS: The study was spread over two summers, during which 827 triathletes (swimmers) in seven Olympic distance triathlons and 773 participants in 15 run-bike-runs (non-swimming controls) participated. Intensive water quality monitoring was used to assess exposure to faecal indicator organisms and detailed questionnaires were used to collect data on the occurrence of health complaints and potential confounding factors.

RESULTS: The microbiological water quality at the time of the triathlons met current Dutch and European bathing water standards. Dependent on the case definition studied, gastroenteritis developed in 0.4-5.2% of swimmers and 0.1-2.1% of non-swimmers in the week following exposure (odds ratio [OR] = 1.6-2.3). Attack rates and burden of disease varied with the case definition used. Among swimmers, the attack rate of gastroenteritis was significantly increased when the geometric mean concentration of thermotolerant coliforms in the water at the time of exposure was > or = 220/100 ml or the geometric mean concentration of *Escherichia coli* was > or = 355/100 ml (OR comparing high versus low exposure 2.9-4.7 dependent on the case definition studied). Thermotolerant coliform concentrations at these triathlons ranged from 100/100 ml (the EU guide level) to 960/100 ml (the EU imperative level is 2000/100 ml). Below the threshold levels attack rates were comparable with attack rates among non-swimmers. A relation with other indicators of faecal pollution was not observed.

CONCLUSIONS: We observed that swimming in fresh waters that met the European imperative level for thermotolerant coliforms but failed the European guide level was associated with a significant risk of gastroenteritis among triathletes. This means that the current European imperative level for thermotolerant coliforms provides insufficient protection to gastrointestinal illness for those who are comparable with triathletes.

Hopenhayn Rich, C., Biggs, M.L. and Smith, A.H. (1998), Lung and kidney cancer mortality associated with arsenic in drinking water in Cordoba, Argentina. *International Journal of Epidemiology*, **27** (4), 561-569.

Full Text: [I\Int J Epi27, 561.pdf](I/Int%20J%20Epi27,%20561.pdf)

Abstract: Background Studies in Taiwan have found dose-response relations between arsenic ingestion from drinking water and cancers of the skin, bladder, lung, kidney and liver. To investigate these associations in another population, we conducted a study in Cordoba, Argentina, which has a well-documented history of arsenic exposure from drinking water.

Methods Mortality from lung, kidney, liver and skin cancers during the period 1986-1991 in Cordoba’s 26 counties was investigated, expanding the authors’ previous analysis of bladder cancer in the province. Counties were grouped a priori into low, medium and high arsenic exposure categories based on available data. Standardized mortality ratios (SMR) were calculated using all of Argentina as the reference population.

Results We found increasing trends for kidney and lung cancer mortality with arsenic exposure, with the following SMR, for men and women respectively: kidney cancer, 0.87, 1.33, 1.57 and 1.00, 1.36, 1.81; lung cancer, 0.92, 1.54, 1.77 and 1.24, 1.34, 2.16 (in all cases, P = 0.001 in trend test), similar to the previously reported bladder cancer results (0.80, 1.28, 2.14 for men, 1.22, 1.39, 1.81 for women). There was a small positive trend for liver cancer but mortality was increased in all three exposure groups. Skin cancer mortality was elevated for women only in the high exposure group, while men showed a puzzling increase in mortality in the low exposure group.

Conclusions The results add to the evidence that arsenic ingestion increases the risk of lung and kidney cancers. In this study, the association between arsenic and mortality from liver and skin cancers was nor clear.

Keywords: Argentina, Arsenic, Lung Neoplasm, Kidney Neoplasm, Water Pollutants, Environmental Epidemiology, Bladder-Cancer, Well Water, Malignant Neoplasms, Endemic Area, Contamination, Residents, Disease, Tobacco, Taiwan

Fleisher, J., Kay, D., Wyer, M. and Godfree, A. (1998), Estimates of the severity of illnesses associated with bathing in marine recreational waters contaminated with domestic sewage. *International Journal of Epidemiology*, **27** (4), 722-726.

Full Text: [I\Int J Epi27, 722.pdf](I/Int%20J%20Epi27,%20722.pdf)

Abstract: Background During the summers of 1989-1992 we conducted four randomized intervention trials at four separate UK bathing locations judged of acceptable quality under current USEPA and EU criteria. The results showed bathers to be at increased risk of gastroenteritis, acute febrile respiratory illness (ICD-9 461-466, 480), ear and eye infections relative to non-bathers. The pubic health significance of these findings has been questioned based upon the unproven assumption Chat these illnesses are minor in nature and thus of questionable public health significance.

Methods The severity of these illnesses or ailments in terms elf duration of illness, percentage of participants seeking medical treatment, and number of days of lost normal daily activity among study participants reporting specific illnesses or ailments were assessed. In addition the attributable proportion of illness among the exposed (bathers) was calculated for each illness or ailment.

Results Average duration of illness ranged from approximately 4 days 10 approximately 8 days depending on the specific illness reported. The percentage of study participants seeking medical treatment ranged from 4.2% to 22.2% while the percentage reporting the loss of at least one day of normal daily activity ranged from 7.0% to 25.9% depending on the illness reported. The overall percentage of each illness that can be directly attributable to exposure to marine waters contaminated with domestic sewage ranged from a low of 34.5% for gastroenteritis to a high of 65.8% for ear infections.

Conclusions To our knowledge, this is the first study to assess and report the severity of illnesses associated with bathing in recreational waters contaminated with domestic sewage. Illness associated with bathing in marine waters contaminated with domestic sewage can no longer be viewed as minor, and indeed can have a substantial impact on the public health.

Keywords: Recreational Water Quality, Indicators of Water Quality, Illness Severity, Microbiology, Sea-Water, Quality, Gastroenteritis, Pollution, Morbidity, Criteria, Exposure, Beaches, Bathers

? Mazumder, D.N.G., Haque, R., Ghosh, N., De, B.K., Santra, A., Chakraborty, D. and Smith, A.H. (1998), Arsenic levels in drinking water and the prevalence of skin lesions in West Bengal. *International Journal of Epidemiology*, **27** (5), 871-877.

Full Text: [1998\Int J Epi27, 871.pdf](1998/Int%20J%20Epi27,%20871.pdf)

Abstract: Background A cross-sectional survey was conducted between April 1995 and March 1996 to investigate arsenic-associated skin lesions of keratosis and hyperpigmentation in West Bengal, India, and to determine their relationship to arsenic water levels. Methods In all, 7683 participants were examined and interviewed, and the arsenic levels in their drinking water measured. Results Although water concentrations ranged up to 3400 μg/l of arsenic, over 80% of participants were consuming water containing <500 μg/l. The age-adjusted prevalence of keratosis was strongly related to water arsenic levels, rising from zero in the lowest exposure level (<50 μg/l) to 8.3 per 100 for females drinking water containing >800 μg/l, and increasing from 0.2 per 100 in the lowest exposure category to 10.7 per 100 for males in the highest exposure level (greater than or equal to 800 μg/l) However, 12 cases with keratosis (2 females and 10 males) were drinking water containing < 100 mu g/l of arsenic. Findings were similar for hyperpigmentation, with strong dose-response relationships. Among those with hyperpigmentation, 29 cases were exposed to drinking water containing <100 μg/l. Calculation by dose per body weight showed that men had roughly two to three times the prevalence of both keratosis and hyperpigmentation compared to women apparently ingesting the same dose of arsenic from drinking water. Subjects who were below 80% of the standard body weight for their age and sex had a 1.6 fold increase in the prevalence of keratoses, suggesting that malnutrition may play a small role in increasing susceptibility. Conclusion The surprising finding of cases who had arsenic-associated skin lesions with apparently low exposure to arsenic in drinking water needs to be confirmed in studies with more detailed exposure assessment. Further research is also needed concerning susceptibility factors which might be present in the exposed population.

Keywords: Arsenic, Keratosis, Hyperpigmentation, India, Cross-Sectional Study, Drinking Water 6 Districts, Affected People, Tubewell Water, Ground-Water, Calamity, World, Contamination, Urine, Liver

Hijar, M., Chu, L.D. and Kraus, J.F. (2000), Cross-national comparison of injury mortality: Los Angeles County, California and Mexico City, Mexico. *International Journal of Epidemiology*, **29** (4), 715-721.

Full Text: [I\Int J Epi29, 715.pdf](I/Int%20J%20Epi29,%20715.pdf)

Abstract: Background Cross-national comparisons of injury mortality can suggest possible causal explanations for injuries across different countries and cultures. This study identifies differences in injury mortality between Los Angeles (LA) County, California and Mexico City DF, Mexico.

Methods Using LA County and Mexico City death certificate data for 1994 and 1995, injury deaths were classified according to the International Classification of Diseases Ninth Revision-Clinical Modification external cause of injury codes. Crude, gender-, and age-adjusted annual fatality rates were calculated and comparisons were made between the two regions.

Results Overall and age-adjusted injury death rates were higher for Mexico City than for LA County. Injury death rates were found to be higher for young adults in LA County and for elderly residents of Mexico City. Death rates for motor vehicle crashes, falls, and undetermined causes were higher in Mexico City, and relatively high rates of poisoning, homicide, and suicide were found for LA County. Motor vehicle crash and fall death rates in Mexico City increased beginning at about age 55, while homicide death rates were dramatically higher among young adults in LA County. The largest proportion of motor vehicle crash deaths was to motor vehicle occupants in LA County and to pedestrians in Mexico City.

Conclusions These findings illustrate the importance of primary injury prevention in countries having underdeveloped trauma care systems and should aid in setting priorities for future work. The high frequency of pedestrian fatalities in Mexico City may be related to migration of rural populations, differing vehicle characteristics and traffic patterns, and lack of safety knowledge. Mexico City’s higher rate of fall-related deaths may be due to concurrent morbidity from chronic conditions, high-risk environments, and delay in seeking medical treatment.

Keywords: Mortality, Injury Deaths, External Cause, Rates, United-States, New-Zealand

? Mazumder, D.N.G., Haque, R., Ghosh, N., De, B.K., Santra, A., Chakraborti, D. and Smith, A.H. (2000), Arsenic in drinking water and the prevalence of respiratory effects in West Bengal, India. *International Journal of Epidemiology*, **29** (6), 1047-1052.

Full Text: [2000\Int J Epi29, 1047.pdf](2000/Int%20J%20Epi29,%201047.pdf)

Abstract: Background A large population in West Bengal, India has been exposed to naturally occurring inorganic arsenic through their drinking water. A cross-sectional survey involving 7683 participants of all ages was conducted in an arsenic-affected region between April 1995 and March 1996. The main focus of the study was skin keratoses and pigmentation alterations, two characteristic signs of ingested inorganic arsenic. Strong exposure-response gradients were found for these skin lesions. The study also collected limited information concerning respiratory system signs and symptoms, which we report here because increasing evidence suggests that arsenic ingestion also causes pulmonary effects.

Methods Participants were clinically examined and interviewed, and the arsenic content in their current primary drinking water source was measured. There were few smokers and analyses were confined to non-smokers (N = 6864 participants).

Results Among both males and females, the prevalence of cough, shortness of breath, and chest sounds (crepitations and/or rhonchi) in the lungs rose with increasing arsenic concentrations in drinking water. These respiratory effects were most pronounced in individuals with high arsenic water concentrations who also had skin lesions. Prevalence odds ratio (POR) estimates were markedly increased for participants with arsenic-induced skin lesions who also had high levels of arsenic in their current drinking water source (greater than or equal to 500 mug/l) compared with individuals who had normal skin and were exposed to low levels of arsenic (<50 <mu>g/l). In participants with skin lesions, the age-adjusted FOR estimates for cough were 7.8 for females (95% CI:3.1-19.5) and 5.0 for males (95% CI:2.6-9.9); for chest sounds FOR for females was 9.6 (95% CI:4.0-22.9) and for males 6.9 (95% CI:3.1-15.0). The FOR for shortness of breath in females was 23.2 (95% CI: 5.8-92.8) and in males 3.7 (95% CI: 1.3-10.6).

Conclusion These results add to evidence that long-term ingestion of inorganic arsenic can cause respiratory effects.

Keywords: Arsenic, Respiratory Disease, Keratoses, Hyperpigmentation, Cross-Sectional Study, Drinking Water, India, Internal Cancers, 6 Districts, Well Water, Mortality, Calamity, Taiwan, World, Lung

? Robinson, K.A. and Dickersin, K. (2002), Development of a highly sensitive search strategy for the retrieval of reports of controlled trials using PubMed. *International Journal of Epidemiology*, **31** (1), 150-153.

Full Text: [2002\Int J Epi31, 150.pdf](2002/Int%20J%20Epi31,%20150.pdf)

Abstract: Objective To develop, through revision of the Cochrane Collaboration search strategy for OVID-MEDLINE, a highly sensitive search strategy to retrieve reports of controlled trials using PubMed.

Methods The original highly sensitive Cochrane strategy was revised to take into account additional Medical Subject Headings (MeSH) and other terminology as well as the current unique features of PubMed. We compared the retrieval of the revised strategy with that of the original Cochrane strategy before and after translation of the strategies into PubMed format. Finally, we used a gold standard database of reports of controlled trials identified by electronic and hand search of selected journals to test the revised strategy in PubMed format.

Results The revised Strategy included a search statement modified for increased precision, and added ‘Cross-over Studies’ as a MeSH term and the term ‘latin square’ as a text word. Compared to the original Cochrane strategy, the revised strategy identified 53 additional reports of controlled trials accessing MEDLINE through OVID. When the revised strategy and original Cochrane strategy were translated into PubMed format, the revised strategy retrieved 90 reports of controlled trials not identified by the original strategy. Finally, the revised strategy in PubMed format retrieved all of the reports of controlled trials in the gold standard database. Ninety-eight per cent of the gold standard reports of controlled trials were retrieved by Phase 1 of the optimal PubMed search strategy.

Conclusions Failure to identify all relevant trials for systematic review could result in bias. We developed a highly sensitive search strategy for the retrieval of reports of controlled trials for use with PubMed that retrieves more relevant citations (greater sensitivity) and fewer non-relevant citations (greater precision) than the original Cochrane search strategy.

Keywords: Search Strategies, Controlled Trials, Systematic Reviews, Medline, Pubmed, Cochrane Collaboration

? Lauren, L., Jarvelin, M.R., Elliott, P., Sovio, U., Spellman, A., McCarthy, M., Emmett, P., Rogers, I., Hartikainen, A.L., Pouta, A., Hardy, R., Wadsworth, M., Helmsdal, G., Olsen, S., Bakoula, C., Lekea, V. and Millwood, I. (2003), Relationship between birthweight and blood lipid concentrations in later life: Evidence from the existing literature. *International Journal of Epidemiology*, **32** (5), 862-876.

Full Text: [2003\Int J Epi32, 862.pdf](2003/Int%20J%20Epi32,%20862.pdf)

Abstract: Background It has been suggested that there is a link between fetal growth and chronic diseases later in life. Several studies have shown a negative association between birthweight and cardiovascular diseases, as well as cardiovascular disease risk factors, such as blood pressure and type 2 diabetes. Far fewer studies have focused on the association between size at birth and blood lipid concentrations. We have conducted a qualitative assessment of the direction and consistency of the relationship between size at birth and blood lipid concentrations to see whether the suggested relationship between intrauterine growth and cardiovascular diseases is mediated by lipid metabolism. Methods A literature search covering the period January 1966 to January 2003 was performed using MEDLINE, EMBASE, and Web of Science. All papers written in English and reporting the relationship between size at birth and lipid levels in humans were assessed. Bibliographies were searched for further publications. Results From an initial screen of 1198 references, 39 papers were included involving 28 578 individuals. There was no consistent relationship between size at birth and blood lipid levels; the one exception being triglyceride concentration, which showed statistically significant negative or U-shaped, but not positive, relationships with birthweight. Conclusion This review does not strongly support a link between birthweight and blood lipid levels in later life. However, the research in this area is limited and in order to make any definitive conclusions, longitudinal studies with sufficient power, data, and prospective follow-up are needed.

Keywords: Assessment, Bibliographies, Birth Length, Birthweight, Blood, Blood Pressure, Cardiovascular, Cardiovascular Disease, Cardiovascular Diseases, Cardiovascular Risk-Factors, Childhood Growth, Diabetes, Disease, Disease Risk, Fetal Growth, Fetal-Growth, Follow-Up, For-Gestational-Age, Hdl, Humans, Hyperlipidaemia, Impaired Glucose-Tolerance, Insulin-Resistance Syndrome, Ischemic-Heart-Disease, Ldl, Lipid, Literature, Longitudinal Studies, Methods, Papers, Pressure, Publications, Research, Review, Risk, Risk Factors, Science, Serum-Lipids, Swedish Men, Total Cholesterol, Triglyceride, Type 2, Type 2 Diabetes, Web of Science, Young-Adults

? Critchley, J. and Bates, I. (2005), Haemoglobin colour scale for Anaemia diagnosis where there is no laboratory: A systematic review. *International Journal of Epidemiology*, **34** (6), 1425-1434.

Full Text: [2005\Int J Epi34, 1425.pdf](2005/Int%20J%20Epi34,%201425.pdf)

Abstract: Background Anaemia is a major public health problem, in poor countries most of the cases are diagnosed clinically. This is inaccurate and the haemoglobin colour scale (HCS) has been developed as an inexpensive, simple alternative for assessing anaemia. Laboratory and community studies have assessed its diagnostic accuracy, but controversy over its validity and usefulness remains. We carried out a systematic review to identify and summarize studies, explain heterogeneity, and make recommendations for future research. Methods We searched electronic databases (MEDLINE, EMBASE, CINAHL, and Science Citation Index), checked documents and references, and contacted experts. We included all the studies comparing HCS diagnostic accuracy with a reference standard. Both reviewers independently screened titles and abstracts, assessed studies for inclusion, appraised quality, and extracted data. Results We included 14 studies, mostly from sub-Saharan Africa. Studies had heterogeneous populations, health care settings, anaemia prevalence, and findings. HCS sensitivity for detecting anaemia was high in most of the studies (75-97%); specificity was generally lower (41-98%). Sensitivity and specificity were higher for laboratory-based studies compared with more pragmatic ‘real-life’ studies, and the ‘study setting’ appeared to explain some of the heterogeneity. Five studies compared the HCS with clinical diagnosis; sensitivity was higher for the HCS in four studies, but specificity was often higher with clinical diagnosis. A few studies evaluated the HCS in situations where there was no laboratory. Conclusions The HCS may improve anaemia diagnosis where there is no laboratory, but there is a need for policy-relevant diagnostic research which is pragmatic, implementation-focused and assesses clinical outcomes. This requires a different approach and research skill-mix from efficacy studies.

Keywords: Anaemia, Burden, Children, Citation, Critique, Databases, Developing Countries, Diagnosis, Haemoglobin, Haemoglobinometry, Health Plan Implementation, Malawi, Mortality, Performance, Pregnant-Women, Prevalence, Public Health, Research, Review, Systematic Review, Tool, Validity

? Johnson, C.Y. and Little, J. (2008), Folate intake, markers of folate status and oral clefts: Is the evidence converging. *International Journal of Epidemiology*, **37** (5), 1041-1058.

Full Text: [2008\Int J Epi37, 1041.pdf](2008/Int%20J%20Epi37,%201041.pdf)

Abstract: Background The ability of folic acid in the periconceptional period to prevent the occurrence of neural tube defects has stimulated tremendous interest in its effects on other health outcomes. Its possible effect on oral clefts has generated considerable debate. The purpose of this systematic review and meta-analysis was to assemble evidence on the role of folate in the aetiology of cleft lip with or without cleft palate (CL/P) and cleft palate only (CPO). Methods Medline, PubMed, Embase, Science Citation Index and the HuGE Published Literature Database were searched to February 2007 for articles related to oral clefts and multivitamin use, dietary folate, folic acid fortification, biochemical markers of folate status and polymorphisms in 5,10-methylenetetrahydrofolate reductase (MTHFR) and other genes involved in folate metabolism. Random effects meta-analysis was conducted when appropriate. Results Maternal multivitamin use was inversely associated with CL/P [odds ratio (OR) 0.75, 95% CI 0.65-0.88, based on 5717 cases and 59 784 controls] but to a lesser extent CPO (OR 0.88, 95% CI 0.76-1.01, 2586 cases and 59 684 controls). The volume of evidence on dietary folate, fortification and biochemical and genetic measures of folate status is substantially less; in aggregate, the evidence suggests that no association exists but there is substantial heterogeneity between studies. Conclusions The evidence is not converging and there is no strong evidence for an association between oral clefts and folic acid intake alone. Multivitamin use in early pregnancy, however, may protect against oral clefts, especially CL/P although this association may be confounded by other lifestyle factors associated with multivitamin use.

Keywords: Birth-Defects, C.844INS68 Gene Variant, Citation, Cleft Lip, Cleft Palate, Folic Acid, Folic-Acid Fortification, Infant C677T Mutation, Life-Style Factors, Meta-Analysis, Methylenetetrahydrofolate Reductase (NADPH2), Methylenetetrahydrofolate Reductase Polymorphisms, Neural-Tube Defects, Nonsyndromic Orofacial Clefts, Periconceptional Vitamin Use, Pregnancy, Pubmed, Review, Risk-Factor, Systematic Review

? Cook, M.B., Akre, O., Forman, D., Madigan, M.P., Richiardi, L. and McGlynn, K.A. (2009), A systematic review and meta-analysis of perinatal variables in relation to the risk of testicular cancer-experiences of the mother. *International Journal of Epidemiology*, **38** (6), 1532-1542.

Full Text: [2009\Int J Epi38, 1532.pdf](2009/Int%20J%20Epi38,%201532.pdf)

Abstract: Methods EMBASE, PUBMED, Scopus and Web of Science databases were searched using sensitive search strategies. Meta-analysis was undertaken using STATA 10. Results A total of 5865 references were retrieved, of which 67 met the inclusion criteria and contributed data to at least one perinatal analysis. Random effects meta-analysis found maternal bleeding during pregnancy [odds ratio (OR) 1.33, 95% confidence interval (CI) 1.02-1.73], birth order (primiparous vs not, 1.08, 95% CI 1.01-1.16; second vs first, OR 0.94, 95% CI 0.88-0.99; third vs first, OR 0.91, 95% CI 0.83-1.01; fourth vs first, OR 0.80, 95% CI 0.69-0.94) and sibship size (2 vs 1, OR 0.93, 95% CI 0.75-1.15; 3 vs 1, OR 0.89, 95% CI 0.74-1.07; 4 vs 1, OR 0.75, 95% CI 0.62-0.90) to be associated with testicular cancer risk. Meta-analyses that produced summary estimates which indicated no association included maternal age, maternal nausea, maternal hypertension, pre-eclampsia, breech delivery and caesarean section. Meta-regression provided evidence that continent of study is important in the relationship between caesarean section and testicular cancer (P = 0.035), and a meta-analysis restricted to the three studies from the USA was suggestive of association (OR 1.67, 95% CI 1.07-2.56). Conclusions This systematic review and meta-analysis has found evidence for associations of maternal bleeding, birth order, sibship size and possibly caesarean section with risk of testicular cancer.

Keywords: Analysis, Birth-Order, Cancer, Carcinoma-Insitu, Databases, Embase, Epidemiology, Germ-Cell Tumors, Hypertension, Males Born, Maternal Age, Meta Analysis, Meta-Analysis, Methods, Perinatal, Population, Pre-Eclampsia, Pregnancy, Pregnancy, Pubmed, Ratio, Review, Risk, Science, Scopus, Search Strategies, Sibship Size, Systematic, Systematic Review, Testicular Cancer, Testicular Neoplasms, Testis Cancer, United-States, Web of Science

? Cook, M.B., Akre, O., Forman, D., Madigan, M.P., Richiardi, L. and McGlynn, K.A. (2010), A systematic review and meta-analysis of perinatal variables in relation to the risk of testicular cancer-experiences of the son. *International Journal of Epidemiology*, **39** (6), 1605-1618.

Full Text: [2010\Int J Epi39, 1605.pdf](2010/Int%20J%20Epi39,%201605.pdf)

Abstract: Background We undertook a systematic review and meta-analysis of perinatal variables in relation to testicular cancer risk, with a specific focus upon characteristics of the son. Methods Literature databases Scopus, EMBASE, PUBMED and Web of Science were searched using highly sensitive search strategies. of 5865 references retrieved, 67 articles met the inclusion criteria, each of which was included in at least one perinatal analysis. Results Random effects meta-analysis produced the following results for association with testicular cancer risk: birth weight [per kilogram, odds ratio (OR) = 0.94, 95% confidence interval (CI) 0.88-1.01, I(2) = 12%], low birth weight (OR = 1.34, 95% CI 1.08-1.67, I(2) = 51%), high birth weight (OR = 1.05, 95% CI 0.96-1.14, I(2) = 0%), gestational age (per week, OR = 0.95, 95% CI 0.92-0.98, I(2) = 38%; low vs not, OR = 1.31, 95% CI 1.07-1.59, I(2) = 49%), cryptorchidism (OR = 4.30, 95% CI 3.62-5.11, I(2) = 44%), inguinal hernia (OR = 1.63, 95% CI 1.37-1.94, I(2) = 38%) and twinning (OR = 1.22, 95% CI 1.03-1.44, I(2) = 22%). Meta-analyses of the variables birth length, breastfeeding and neonatal jaundice did not provide evidence for an association with testicular cancer risk. When low birth weight was stratified by data ascertainment (record/registry vs self-report), only the category of self-report was indicative of an association. Meta-regression of data ascertainment (record/registry vs self-report) inferred that record-/registry-based studies were less supportive of an association with gestational age (per week = 0.97, 95% CI 0.94-1.00, I(2) = 29%; low vs not = 1.08, 95% CI 0.91-1.28, I(2) = 32%). Conclusion In conclusion, this systematic review and meta-analysis finds evidence that cryptorchidism, inguinal hernia and twinning, and tentative evidence that birth weight and gestational age, are associated with risk of testicular cancer.

Keywords: Analysis, Birth Length, Birth-Weight, Cancer, Cryptorchidism, Databases, Embase, Epidemiology, Germ-Cell Tumors, Gestational-Age, Inguinal-Hernia, Males Born, Maternal Recall, Meta-Analysis, Methods, Perinatal, Pregnancy, Pubmed, Ratio, Review, Risk, Science, Scopus, Search Strategies, Systematic, Systematic Review, Testicular Cancer, Testicular Neoplasms, Testis, United-States, Web of Science, Young Men

? Woodcock, J., Franco, O.H., Orsini, N. and Roberts, I. (2011), Non-vigorous physical activity and all-cause mortality: Systematic review and meta-analysis of cohort studies. *International Journal of Epidemiology*, **40** (1), 121-138.

Full Text: [2011\Int J Epi40, 121.pdf](2011/Int%20J%20Epi40,%20121.pdf)

Abstract: Background Although previous studies have found physical activity to be associated with lower mortality, the dose response relationship remains unclear. In this systematic review and meta-analysis we quantify the dose-response relationship of non-vigorous physical activity and all-cause mortality. Methods We aimed to include all cohort studies in adult populations with a sample size of more than 10 000 participants that estimated the effect of different levels of light or moderate physical activity on all-cause mortality. We searched MEDLINE, EMBASE, Cochrane (DARE), Web of Science and Global Health (June 2009). We used dose-response meta-regression models to estimate the relation between non-vigorous physical activity and mortality. Results We identified 22 studies that met our inclusion criteria, containing 977 925 (334 738 men and 643 187 women) people. There was considerable variation between the studies in their categorization of physical activity and adjustment for potential confounders. We found that 2.5 h/week (equivalent to 30 min daily of moderate intensity activity on 5 days a week) compared with no activity was associated with a reduction in mortality risk of 19% [95% confidence interval (CI) 15-24], while 7h/week of moderate activity compared with no activity reduced the mortality risk by 24% (95% CI 19-29). We found a smaller effect in studies that looked at walking alone. Conclusion Being physically active reduces the risk of all-cause mortality. The largest benefit was found from moving from no activity to low levels of activity, but even at high levels of activity benefits accrue from additional activity.

Keywords: Adult, Body-Mass Index, Cardiovascular Risk-Factors, Cochrane, Cohort Studies, Cohort Study, Coronary-Heart-Disease, Dose-Response, Dose-Response Data, Exercise, Factor Intervention Trial, Follow-Up, Harvard Alumni Health, Health, Leisure-Time, Life-Style, Meta-Analysis, Methods, Mortality, Physical Activity, Review, Risk, Science, Systematic, Systematic Review, Trend Estimation, Walking, Web of Science, Women

? Dumith, S.C., Gigante, D.P., Domingues, M.R. and Kohl, H.W. (2011), Physical activity change during adolescence: A systematic review and a pooled analysis. *International Journal of Epidemiology*, **40** (3), 685-698.

Full Text: [2011\Int J Epi40, 685.pdf](2011/Int%20J%20Epi40,%20685.pdf)

Abstract: Background It is presumed that physical activity (PA) level declines during the lifespan, particularly in adolescence. However, currently, there is no study that quantifies these changes and pools results for a common interpretation. Therefore, the purpose was to systematically review the international literature regarding PA change during adolescence, and to quantify that change according to a series of study variables, exploring gender-and-age differences. Methods An electronic search was conducted in the MEDLINE/PUBMED and Web of Science databases. Longitudinal studies with, at least, two PA measures throughout adolescence (10-19 years old) or the first PA measure during childhood and the second one during adolescence were selected. From each article, study project name, country, year of the first data collection, sample size, baseline age, follow-up duration, characteristics of the instrument (type, recall time, PA intensity and PA domain), unit of PA measure and report of statistical significance were collected. Results Overall, 26 studies matched the inclusion criteria. Most were carried out in the USA, assessed PA by questionnaire, and found a decline in PA levels during the adolescence. On average, the mean percentage PA change per year, across all studies, was -7.0 (95% confidence interval: -8.8 to -5.2), ranging from -18.8 to 7.8. The decline was significant according to most sub-groups of variables analysed. Although earlier studies revealed a higher PA decline in boys, the decline has been greater in girls in more recent studies (commenced after 1997). Moreover, although the decline among girls was higher in younger ages at baseline (9-12 years), it was higher in older ages (13-16 years) among boys. Conclusions The decline of PA during adolescence is a consistent finding in the literature. Differences between boys and girls were observed and should be explored in future studies. Interventions that attempt to attenuate the PA decline, even without an increase in PA levels, could be considered as effective.

Keywords: 3-Year Follow-Up, Adolescent, Aerobic Fitness, Age-Related Decline, Analysis, Child, Childhood, Data Collection, Databases, Disease Risk-Factors, Exercise, Follow-Up, Girls, Interpretation, Literature, Longitudinal Studies, Methods, Motor Activity, Physical Activity, Pooled Analysis, Questionnaire, Review, Science, Sedentary Behavior, Self-Perceptions, Sports, Statistical, Systematic, Systematic Review, Tracking, Web of Science, Young Adulthood

? Blakely, T., Pega, F., Nakamura, Y., Beaglehole, R., Lee, L. and Tukuitonga, C.F. (2011), Health status and epidemiological capacity and prospects: WHO Western Pacific Region. *International Journal of Epidemiology*, **40** (4), 1109-1121.

Full Text: [2011\Int J Epi40, 1109.pdf](2011/Int%20J%20Epi40,%201109.pdf)

Abstract: Methods Global mortality and disease data were used to summarize the burden of mortality, disease, risk factor and patterns of inequalities in the region. Medline bibliometrics were used to estimate epidemiological publication output by country. Key informant surveys, Internet and literature searches and author knowledge and networks were used to elicit perspectives on epidemiological training, research, funding and workforce. Findings The WPR has the lowest age-standardized disability-adjusted life-years (DALY) rate per 1000 of the six WHO regions, with non-communicable disease making the largest percentage contributions in both low- and middle-income countries (LMICs, 68%) and high-income countries (HICs, 84%) in the WPR. The number of Medline-indexed epidemiological research publications per year was greatest for Japan, Australia and China. However, the rate per head of population was greatest for Micronesia and New Zealand. The substantive focus of research roughly equated with burden of disease patterns. Research capacity (staff, funding, infrastructure) varies hugely between countries. Epidemiology training embedded within academic Masters of Public Health programmes is the dominant vehicle for training in most countries. Field epidemiology and in-service training are also common. The Pacific Island countries and territories, because of sparse populations over large distances and chronic workforce and funding capacity problems, rely on outside agencies (e.g. WHO, universities) for provision of training. Cross-national networks and collaborations are increasing. Conclusion Communicable disease surveillance and research need consolidation (especially in eastern Asian WPR countries), and non-communicable disease epidemiological capacity requires strengthening to match disease trends. Capacity and sustainability of both training and research within LMICs in WPR are ongoing priorities. China in particular is advancing quickly. One role for the IEA in building capacity is facilitating collaborative networks within WPR.

Keywords: Author, Bibliometrics, Burden, Capacity, China, Disease, Epidemiology, Field, Funding, Health, Inequalities, Internet, Japan, Knowledge, Literature, Low- and Middle-Income Countries, Methods, Mortality, New Zealand, New-Zealand, Priorities, Public Health, Publication, Publications, Research, Risk, Risk Factor, Service, Surveillance, Systematic Analysis, Training, Trends, Western Pacific, Western Pacific Region, Who, Workforce

# Title: International Journal of Food Microbiology

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Leclerc, H., Mossel, D.A.A. and Savage, C. (1985), Monitoring non-carbonated (still) mineral waters for aerobic colonization. *International Journal of Food Microbiology*, **2** (6), 341-347.

Full Text: [I\Int J Foo Mic2, 341.pdf](I/Int%20J%20Foo%20Mic2,%20341.pdf)

Abstract: Fifty samples each of two leading brands of French, non-carbonated (‘still’) mineral waters, packed in plastic bottles, were stored in the dark for one month at approximately 20°C to allow marked proliferation of their autotrophic microbial flora. Upon completion of this challenge test 1250 ml per bottle were filtered through five membranes, which were subsequently cultured on 1/10 strength nutrient agar for 48 h at a temperature favouring the growth of thermotrophic organisms only, i.e. 42 ± 0.5°C. The numbers of colonies per one litre were below 103 in all samples and did not exceed 200 in 56–80%, depending on the brand. Identification of the isolates demonstrated strong inhibition of the psychrotrophic. Gram-negative types, predominating in the association flora of stored still waters and preponderance of Gram-positive, catalase-positive, facultatively anaerobic cocci. Consequently, a Reference Value for the thermotrophic autotrophic colony count per 1 ml in still, commercial mineral waters of the order *m* = 1 and *M* = 5 seems justified. It is emphasized that, besides examining for these trivial organism, the usual tests for marker bacteria (*Escherichia coli* and Lancefield group D streptococci) and *Pseudomonas aeruginosa* should always be carried out.

Keywords: Mineral Water, Non-Carbonated, Autotrophic Bacteria, Thermotrophic Bacteria, Bacteriological Reference Values

Beuchat, L.R. (1991), Behavior of *Aeromonas* species at refrigeration temperatures. *International Journal of Food Microbiology*, **13** (3), 217-224.

Full Text: [I\Int J Foo Mic13, 217.pdf](I/Int%20J%20Foo%20Mic13,%20217.pdf)

Abstract: The ability of many strains of Aeromonas hydrophila and A. sobria to produce several types of virulence factors has been documented. The presence of Aeromonas in drinking water, as well as in river and saline waters and on various finfish and shellfish taken from them, has caused some concern relative to the role this bacterium plays as a causative agent of human gastroenteritis. The fairly common occurrence of Aeromonas on red meats, poultry and fresh produce and its ability to grow at 4 degrees C gives rise to further concern over public health risks which may be associated with consumption of these foods. A brief overview of the behavior of Aeromonas species at refrigeration temperatures is presented.

Macler, B.A. and Regli, S. (1993), Use of microbial risk assessment in setting united-states drinking-water standards. *International Journal of Food Microbiology*, **18** (4), 245-256.

Full Text: [I\Int J Foo Mic18, 245.pdf](I/Int%20J%20Foo%20Mic18,%20245.pdf)

Keywords: Water-Borne Infectious Disease, Risk Assessment and Management, Water Treatment Regulation, Maximum Contaminant Level Goals, Infection, *Giardia*, *Cryptosporidium*, Volunteers, Disease

Kirov, S.M. (1993), The public health significance of *Aeromonas* spp. in foods. *International Journal of Food Microbiology*, **20** (4), 179-198.

Full Text: [I\Int J Foo Mic20, 179.pdf](I/Int%20J%20Foo%20Mic20,%20179.pdf)

Abstract: There is now evidence that some strains of Aeromonas species are enteropathogens. Such strains possess virulence properties, such as the ability to produce enterotoxins, cytotoxins, haemolysins and/or the ability to invade epithelial cells. Strains with these properties are common contaminants of drinking water and a wide range of foods. Contact or consumption of contaminated water, especially in summer, is a major risk factor in Aeromonas-associated gastroenteritis. Aeromonas-contaminated foods may also be vehicles of infection. Given the properties of strains that have been described in foods it has been suggested that food-borne illness could result not only from colonization and in vivo expression of virulence factors, but possibly also by intoxication following ingestion of foods that have been stored for a period of time, even under refrigeration. This paper reviews what is known about Aeromonas spp. in foods, their expression of virulence determinants, particularly at refrigeration temperatures, and the questions remaining to be answered to evaluate the risk they pose, so that an appropriate public health response can be determined.

Dalsgaard, A., Huss, H.H., Hkittikun, A. and Larsen, J.L. (1995), Prevalence of *Vibrio cholerae* and *Salmonella* in a major shrimp production area in Thailand. *International Journal of Food Microbiology*, **28** (1), 101-113.

Full Text: [I\Int J Foo Mic28, 101.pdf](I/Int%20J%20Foo%20Mic28,%20101.pdf)

Abstract: In 1992 and 1993, a 7 months study was carried out in a major shrimp-producing area in Southern Thailand to study the prevalence of *Vibrio cholerae* and Salmonella. A total of 158 samples were examined including water, sediment, shrimp, pelleted feed, shrimp gut, and chicken manure. Salmonella was not recovered from any sample type studied. *V. cholerae* O1 was isolated from 2 (2%) and *V. cholerae* non-O1 was isolated from 35 (33%) of 107 samples examined. The occurrence of *V. cholerae* was not significantly influenced by water salinity, temperature, dissolved oxygen or pH. There was no correlation between fecal coliform counts and the prevalence of *V. cholerae*. The results indicate that *V. cholerae* non-O1 is ubiquitous in aquatic environments where shrimp culture is practised under a variety of environmental conditions. The public health significance of non-O1 *V. cholerae* in shrimp culture remains to be determined. *V. cholerae* O1 and Salmonella do not appear to constitute a hygienic problem even if chicken manure was used as fertilizer.

Crockett, C.S., Haas, C.N., Fazil, A., Rose, J.B. and Gerba, C.P. (1996), Prevalence of shigellosis in the US: Consistency with dose-response information. *International Journal of Food Microbiology*, **30** (1-2), 87-99.

Full Text: [I\Int J Foo Mic30, 87.pdf](I/Int%20J%20Foo%20Mic30,%2087.pdf)

Abstract: Every year there are estimated 300 000 cases of Shigella in the United States-(Bennett et al., 1987, Am. J. Prev. Med. 3, 102-114). A beta-poisson model was fit to human dose-response information on pathogenic Shigella using the Maximum Likelihood Estimation technique (Haast 1983, Am. J. Epidemiol. 118, 573-582). Pooled and separate data sets for the Shigella species were fit to the beta-Poisson model and 95% confidence limits and regions were calculated. Shigella dysentariae and Shigella flexneri confidence regions and limits overlapped with each other and with the pooled data set, suggesting that this model can describe Shigella in general. The pooled Shigella model as well as the upper and lower confidence limits of the three data sets showed average exposures based on the estimated U.S. caseload of pathogenic Shigella of 0.01 to 0.014 organisms (confidence limits 0.001-0.05) for a 7-day per annum period of exposure and ranges from 0.07 to 0.1 organisms (confidence limits 0.006-0.4). for a 1-day per annum period of exposure. The plausibility of the pooled dose-response model was then evaluated by comparison with two known cruise ship outbreaks. The pooled model estimated that the two outbreaks studied could have been due to ingestion of 344 (confidence limits 72-915) Shigella cells per meal and 10.5-12 (confidence limits 1-44) Shigella cells per glass of water by passengers.

Keywords: Shigella, Dose-Response, Infectious Dose, Shigellosis, Risk Assessment, Drinking-Water, Outbreak, Risk

Medema, G.J., Teunis, P.F., Havelaar, A.H. and Haas, C.N. (1996), Assessment of the dose-response relationship of *Campylobacter* jejuni. *International Journal of Food Microbiology*, **30** (1-2), 101-111.

Full Text: [I\Int J Foo Mic30, 101.pdf](I/Int%20J%20Foo%20Mic30,%20101.pdf)

Abstract: Mathematical relations describing the risk of infection after exposure to enteropathogens are important tools for the evaluation of the potential health risk from exposure via food and water. A quantitative description of the dose-response relation for *Campylobacter* jejuni with the Beta-Poisson model was fitted to experimental data of infection with *Campylobacter* jejuni (as determined by shedding of C. jejuni) obtained in human feeding studies performed by Black et al. (1988). The maximum likelihood estimates for the Beta-Poisson model parameters based on these data are: alpha = 0.145 and beta = 7.59. The fit of the model on the experimental data was good: the difference between the likelihood obtained with the Beta-Poisson model and the maximum possible likelihood was not significant. The occurrence of symptoms of intestinal illness did not follow a similar dose-related trend. Overall, 22% of the infected volunteers developed symptoms (diarrhea, fever). The highest illness-to-infection ratio was found at an intermediate dose (9×104). The dose-response relation and the illness-to-infection ratio appeared to differ between different C. jejuni isolates. The dose-response relation derived from feeding studies with a single isolate should therefore be considered indicative. The absence of experimental data in the low dose range resulted in a relatively large confidence interval at low doses. However, in cases where the dose-response relation has been applied so far to estimate the health risk of exposure to C. jejuni in water, the uncertainty in the dose-response relation was insignificant compared to the uncertainty in the exposure estimate.

In’t Veld, P.H. (1998), The use of reference materials in quality assurance programmes in food microbiology laboratories. *International Journal of Food Microbiology*, **45** (1), 35-41.

Full Text: [I\Int J Foo Mic45, 35.pdf](I/Int%20J%20Foo%20Mic45,%2035.pdf)

Abstract: Nine different reference materials (RMs) for use in food and water microbiology have been developed with the support of the European Commission (EC). The production process of RMs is based on spray drying bacteria suspended in milk. The highly contaminated milk powder (HCMP) obtained is mixed with sterile milk powder to achieve the desired level of contamination and is subsequently filled into gelatine capsules. The HCMP may need to be stabilised by storage for more than a year before a stable RM can be prepared. The HCMP are mixed with sterile milk powder using a pestle and mortar in order to produce homogeneous RMs. For routine use of RMs Shewhart control charts can be produced. Based on log10 transformed counts, control limits are calculated. Rules for the interpretation of results facilitate the detection of out of control situations. Besides RMs there are also CRMs (Certified Reference Materials) that are certified by the EC Community Bureau of Reference (BCR) and are intended for occasional use. Based on the BCR certificate, user tables are produced presenting the 95% confidence limits for the number of capsules likely to be examined in practice. Also power analysis is made to indicate the minimum difference between the certified value and the observed geometric mean value in relation to the number of capsules examined.

# Title: International Journal of Food Science and Technology

Full Journal Title: International Journal of Food Science and Technology

ISO Abbreviated Title: Int. J. Food Sci. Technol.

JCR Abbreviated Title: Int J Food Sci Tech

ISSN: 0950-5423

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Language: English

Journal Country/Territory: England

Publisher: Blackwell Publishing

Publisher Address: 9600 Garsington Rd, Oxford OX4 2DQ, Oxon, England

Subject Categories:

Food Science & Technology: Impact Factor 0.832, 50/96 (2006)

? Navas, P.B. and Carrasquero-Duran, A. (2003), The dependence of Ca2+ adsorption by rice bran on surface charge. *International Journal of Food Science and Technology*, **38** (6), 687-692.

Abstract: The calcium binding capacity of rice bran was evaluated by using adsorption isotherms at several pH values. Adsorption increased with pH and was associated with an increase in negative surface charges in plant fibres. At pH 4.4, the release of endogenous calcium was the main process, while adsorption determined Ca availability at higher pH. The Ca concentrations, at which neither adsorption nor release occurs were as follows: 7.86×10-3 m (pH 4.4), 4.14×10-3 m (pH 5.0), 2.31×10-3 m (pH 6.0) and 0.85×10-3 m (pH 7.5). When using NaCl as the electrolyte, the results showed that competition of Na+-Ca2+ for binding sites seemed to be the determinant of the rate of Ca adsorption. Negative electric charges in bran are produced by ionization reactions which depend on solution pH and were evaluated by using the Gouy-Chapman double-layer model. The value of pH(0), at which the surface charge is zero was found to be 5.5.

Keywords: Binding Sites, Calcium Chloride, Gouy-Chapman, pH, Sodium Chloride, Fractions, Binding, Fiber, Zinc, Iron

? Silem, A., Gunter, H.O., Einfeldt, J. and Boualia, A. (2006), The occurrence of mass transport processes during the leaching of amygdalin from bitter apricot kernels: detoxification and flavour improvement. *International Journal of Food Science and Technology*, **41** (2), 201-213.

Abstract: Because of their appreciable protein content apricot kernels could be used as a good source of food. However, their wide use for human or animal nutrition is dependent on their adequate detoxification. This is because apricot kernels have a strong bitter flavour that is caused by the presence of amygdalin, a toxic cyanogenic glycoside. The aim of the present work was to investigate an unusual method of detoxifying apricot kernels by soaking them in water. The method was energetically relatively inexpensive as uncrushed kernels and cold water were used. Furthermore, the use of intact kernels minimized the loss of nutritious soluble matter during the detoxification. On the basis of a simple but adequate mechanistic model, a mathematical description of the extractive detoxification of apricot kernels is proposed. The two-resistance mass transfer system is based on external film mass transfer and an effective solid diffusion. A linear equilibrium curve arises from the assumption that the concentration profile inside the solid phase can be well approximated with a second order polynomial calculation, this then leads to an analytical formulation of the mathematical model. The liquid-phase mass transfer coefficient and the internal diffusion coefficient in the kernels can be then determined. Finally, the model is used to describe extractor behaviour and predict process performance under real operation conditions.

Keywords: Batch Extraction, Cyanogenic Glycosides, Mathematical Modeling, Semi-Continuous Extraction, Soaking, Adsorption, Cyanide

# Title: International Journal of Forecasting

Full Journal Title: [International Journal of Forecasting](http://www.sciencedirect.com/science/journal/01692070)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Benda, W.G.G. and Engels, T.C.E. (2011), The predictive validity of peer review: A selective review of the judgmental forecasting qualities of peers, and implications for innovation in science. *International Journal of Forecasting*, **27** (1), 166-182.

Full Text: [2011\Int J For27, 166.pdf](2011/Int%20J%20For27,%20166.pdf)

Abstract: In this review we investigate what the available data on the predictive validity of peer review can add to our understanding of judgmental forecasting. We found that peer review attests to the relative success of judgmental forecasting by experts. Both manuscript and group-based peer review allow, on average, for accurate decisions to be made. However, tension exists between peer review and innovative ideas, even though the latter underlie scientific advance. This points to the danger of biases and preconceptions in judgments. We therefore formulate two proposals for enhancing the likelihood of innovative work. (C) 2010 International Institute of Forecasters. Published by Elsevier B.V. All rights reserved.

Keywords: Advance, Advice Taking, Authors, Bias, Bibliometric Indicators, Citation Analysis, Cognitive Bias, CUM Laude Doctorates, Data, Decision-Making, Decision-Making, Expert Advice, Experts, Forecasting, Grant Applications, Group Decision Making, Innovation, Journal Impact, Peer Review, Peer-Review, Predictive, Reliability, Reliability, Review, Rights, Science, Scientific Excellence, SI, Understanding, Validity, Work

# Title: International Journal of Geriatric Psychiatry

Full Journal Title: [International Journal of Geriatric Psychiatry](http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=4294)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0885-6230

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Baldwin, C., Hughes, J., Hope, T., Jacoby, R. and Ziebland, S. (2003), Ethics and dementia: Mapping the literature by bibliometric analysis. *International Journal of Geriatric Psychiatry*, **18** (1), 41-54.

Full Text: [I\Int J Ger Psy18, 41.pdf](I/Int%20J%20Ger%20Psy18,%2041.pdf)

Abstract: Objectives This paper reports on a bibliometric analysis of keywords in the literature on ethics and dementia during the period 1980-2000.

Methods Keywords were drawn from titles, abstracts and keyword fields of 14 bibliographic databases and clustered in to 19 categories. These categories were then examined for their frequency and co-occurrences. The strength of relationships between these categories is mapped using the metaphor of the ‘night sky’ showing constellations of issues and changes over time.

Results Four categories appear consistently and frequently in the literature: professional care, end-of-life issues, decision-making and treatment. Other issues come and go (such as quality-of-life issues) while others appear to respond to outside events (e.g. feeding issues). The research literature is based predominantly on surveys or studies soliciting responses to pre-defined issues. Little research has been undertaken to establish the range of ethical issues for either family members or professionals. Discussion We discuss the domination of the literature by four categories of ethical issues, the new and emerging areas of ethical interest and those areas that are triggered by external events such as legal cases. We also discuss some of the limitations of the study and note some omissions in the literature.

Conclusion During the period 1980-2000 the research literature has been dominated by surveys and studies soliciting views on predefined issues with relatively few in-depth, open-ended qualitative studies. Copyright (C) 2002 John Wiley Sons, Ltd.

Keywords: Ethics, Dementia, Bibliometric Analysis, Co-Word Analysis, Science, Health, Care, Experience, Guidelines, Caregivers, Dilemmas, Service, Disease

? Mitchell, A. and Brindle, N. (2003), CSF phosphorylated tau - does it constitute an accurate biological test for Alzheimer’s disease? *International Journal of Geriatric Psychiatry*, **18** (5), 407-411.

Full Text: 2003\Int J Ger Psy18, 407.pdf

Abstract: Introduction There is considerable interest in developing a diagnostic test which could differentiate between early Alzheimer’s disease (AD) and other causes of memory impairment with more than 80% sensitivity and 80% specificity. Objective To review the studies that have examined CSF phosphorylated tau as diagnostic test of AD vs clinically representative comparison groups. Method A critical review of the literature using EMBASE, Web of Science, MEDLINE and Psychinfo databases supplemented by handsearching and contact with experts in the field. Results CSF phosphorylated tau is a marker of AD that improves upon the utility of CSF total tau and clinical examination alone. Studies have found high levels of tau phosphorylated at Threonine 231 and/or Serine 199 in AD but not in other causes of dementia, in depression or in healthy elderly controls. of particular interest, the test appears equally valid in cases of early AD as in moderate or late stages and may also be of use in predicting future decline in subjects with mild cognitive impairment. Conclusion CSF phosphorylated tau is a promising diagnostic test for AD but this requires replication using pathologically confirmed cases. Copyright (C) 2003 John Wiley Sons, Ltd.

Keywords: Alzheimer’s Disease, Cerebrospinal Fluid, Cerebrospinal-Fluid Tau, Clinical Examination, Copyright, Databases, Degeneration, Dementia, Depression, Diagnosis, Diagnostic Test, Disease, Disorders, Elderly, Interest, Large-Scale, Literature, Memory, Mild Cognitive Impairment, Mild Cognitive Impairment, Multicenter, Pathology, Phosphorylated Tau, Protein, Review, Science, Tau, Web of Science

? Bamford, C., Lamont, S., Eccles, M., Robinson, L., May, C. and Bond, J. (2004), Disclosing a diagnosis of dementia: A systematic review. *International Journal of Geriatric Psychiatry*, **19** (2), 151-169.

Full Text: 2004\Int J Ger Psy19, 151.pdf

Abstract: Background The issue of diagnostic disclosure in dementia has been debated extensively in professional journals, but empirical data concerning disclosure in dementia has not previously been systematically reviewed. Objective To review empirical data regarding diagnostic disclosure in dementia. Methods Five electronic databases were searched up to September 2003 (MEDLINE, EMBASE, Cinahl, Sociological Abstracts, Web of Science). Additional references were identified through hand searches of selected journals and bibliographies of relevant articles and books. The title and abstract of each identified paper were reviewed independently by two reviewers against pre-determined inclusion criteria: original data about disclosure were presented and the paper was in English. Any disagreements were resolved by discussion until consensus was reached. Data were extracted independently by two reviewers using a structured abstraction form. Data quality were not formally assessed although each study was critically reviewed in terms of methodology, sampling criteria, response rates and appropriateness of analysis. Results Fifty-nine papers met the inclusion criteria for detailed review. Many of the studies had methodological shortcomings. The studies reported wide variability in all areas of beliefs and attitudes to diagnostic disclosure and reported practice. Studies of the impact of disclosure indicate both negative and positive consequences of diagnostic disclosure for people with dementia and their carets. Conclusions Existing evidence regarding diagnostic disclosure in dementia is both inconsistent and limited with the perspectives of people with dementia being largely neglected. This state of knowledge seems at variance with current guidance about disclosure. Copyright (C) 2004 John Wiley Sons, Ltd.

Keywords: Alzheimer’s Disease, Alzheimers-Disease, Analysis, Attitudes, Cancer-Patients, Copyright, Databases, Dementia, Diagnosis, Disclosure, Families, General-Practitioners, Impact, Information Needs, Journals, Knowledge, Methodology, Methods, Multiple-Sclerosis, Papers, Patient, Practice, Primary-Care Physicians, Professional, Review, Science, Systematic, Systematic Review, Telling Patients, Variability, Web of Science

# Title: International Journal of Green Energy

Full Journal Title: International Journal of Green Energy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kumar, A.V.A., Al Hashimi, S. and Hilal, N. (2008), Investigation of kinetics and mechanism involved in the biosorption of heavy metals on activated sludge. *International Journal of Green Energy*, **5** (4), 313-321.

Abstract: An investigation has been undertaken to determine the removal of heavy metals (Cd2+, Cu2+, Ni2+ and Zn2+) of high environmental priority due to their toxicity from dilute aqueous solutions by biosorption using inexpensive biomaterials like activated sludge. Activated sludge is used widely in water treatment plants and is easily available. Each experiment was performed over a period of time to determine the biosorption of heavy metals from the aqueous phase to the solid phase. The maximum sorption uptake of the studied metal ions by activated sludge showed the following order: Cd2+ > Cu2+ > Ni2+ > Zn2+. The pseudo first- and second-order kinetic models were used to describe the kinetic data. The experimental data fit with the second-order kinetic model very well. The type of mechanism involved is analyzed in terms of the intraparticle diffusion model. Other models are also reviewed. Quantification of metal-biomass interactions, nature of adsorption, kinetics, ion-exchange as well as models used to characterize activated sludge biosorption are reviewed. All solutions are analyzed using inductively coupled plasma (ICP).

Keywords: Activated Sludge, Adsorption, Aqueous Phase, Aqueous Solutions, Biomaterials, Biosorption, Cd2+, Cu2+, Data, Diffusion, Diffusion Model, Environmental, Experiment, Experimental, First, Heavy Metals, Inductively Coupled Plasma, Intraparticle Diffusion, Intraparticle Diffusion Model, Investigation, Ion Exchange, Ion-Exchange, Ionexchange, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Mechanism, Metal, Metal Ions, Metals, Model, Models, Ni2+, Plants, Plasma, Pseudo First Order, Pseudo Second Order, Removal, Second Order, Second-Order, Sludge, Solutions, Sorption, Thermodynamics, Toxicity, Treatment, Uptake, Waste-Water, Water, Water Treatment, Zn2+

# Title: International Journal of Group Tensions

Full Journal Title: International Journal of Group Tensions

ISO Abbreviated Title:

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ISSN: 0047-0732

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Publisher Address:

Subject Categories:

: Impact Factor

Hernández-Guzmán, L., Montero y López Lena M. and Macías, O.C. (2002), Latin American productivity from 1990 to 1998 in the *Mexican Journal of Psychology*. *International Journal of Group Tensions*, **31** (4), 317-337.

Full Text: [I\Int J Gro Ten31, 317.pdf](I/Int%20J%20Gro%20Ten31,%20317.pdf)

Abstract: Published uninterruptedly since 1984, the *Mexican Journal of Psychology* (*MJP*) has been recognized as one of the most important periodicals in Spanish-language psychology. After coping with financial impediments and a lack of scientific contributions, the significance of the *MJP* emerged. The journal remains vital in the development of Latin American psychology. It is today recognized as having the highest impact of all Latin American psychology journals as well as having the second highest impact of all psychology journals in the Spanish language. The goal of the present study was to review the profiles of the *MJP* from 1990 to 1998 by using a bibliometric classification procedure. Four indicators were employed in the present analysis of the articles including measurement techniques, methodology, field of psychology, and main results.

Keywords: Periodical, Double-Blind, Peer Review, Basic Research, Applied

# Title: International Journal of Gynecological Cancer

Full Journal Title: [International Journal of Gynecological Cancer](http://journals.lww.com/ijgc/pages/issuelist.aspx); [International Journal of Gynecological Cancer](http://www3.interscience.wiley.com/journal/118544021/home?CRETRY=1&SRETRY=0); [International Journal of Gynecological Cancer](http://ovidsp.tx.ovid.com/sp-2.3.1b/ovidweb.cgi?QS2=434f4e1a73d37e8c01e9bb09ab15b39240ab4e8d8141bc6abe2090a0a7667ebc46855b6b4e6532689baf9303fab4afcbfd4359d57741daa8ae4298e6cf2d842c85e341bf292c63221a0b7afb6ce69c078e24831e585d25b492ac00bb9157e4c1538eca2c3825)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Klar, M., Foldi, M., Denschlag, D., Stickeler, E. and Gitsch, G. (2009), Estimates of global research productivity in gynecologic oncology. *International Journal of Gynecological Cancer*, **19** (4), 489-493.

Full Text: 2009\Int J Gyn Can19, 489.pdf

Abstract: Background: Societies worldwide invest considerably in research oil oncological diseases of women. However, Current literature lacks estimating this research production. We therefore evaluated quality and quantity of publications in gynecologic oncology. Methods: Revisit of 6119 peer-reviewed articles published in Gynecologic Oncology and the International Journal Gynecological Cancer from January 1996 to December 2006. Descriptive data oil disease origin, main topic, and Country of origin were collected and analyzed separately. Research productivity was adjusted to the national Population and nominal gross domestic product per capita. Results: Research production and international cooperative teamwork in the 2 main journals of gynecologic oncology increased within the 10 last years; 65.3% of all published articles dealt either with epithelial ovarian cancer, cervical cancer, or endometrial cancer. Endometrial cancer had the worst ratio number Of publications to estimated national incidence (United States, 2007). The United States (41.15%) and Europe (29.72%) make up a striking 70.87% of the world’s research production in the field of gynecologic oncology. However, the highest rate of increase shows in Turkey (22.5), the People’s Republic or China (6.87), and South Korea (5.83). Adjusted to the national GDP per capita and population for the year 2006, research productivity seems best in Israel, Austria, and Turkey. Conclusion: Quantitatively, Most publications come from the presumed countries. Within the limits of the methodology used In this Study, adjustment to population and GDP per capita provides information on research Output. The scientific Output Oil endometrial cancer is comparably low.

Keywords: Bibliometric Analysis, Bibliometrics, Cancer, Europe, Global Trends, Gynecologic Oncology, Impact, Lacks, Productivity, Publications, Quality, Research, Research Production, Research Productivity, Science

? Jeurissen, S. and Makar, A. (2009), Epidemiological and economic impact of human papillomavirus vaccines. *International Journal of Gynecological Cancer*, **19** (4), 761-771.

Full Text: 2009\Int J Gyn Can19, 761.pdf

Abstract: Background: Despite screening, cervical cancer (CC) remains a serious health care problem. Because human papillomavirus (HPV) is the necessary cause of CC, the development of 2 new vaccines can have a tremendous impact oil CC and other HPV-related conditions. In this systematic review, the epidemiological and economic impacts of HPV are evaluated. Methods: A literature search was conducted through MEDLINE, Web of Science, Cochrane Library, and Cumulative Index to Nursing and Allied Health Literature. Articles were selected based on inclusion and exclusion criteria. Economic evaluations were submitted to a quality assessment. Results: Sixteen articles were selected to review the epidemiological impact of HPV vaccines, and 11 were selected to review the economic impact. The studies were very heterogeneous because of different assumptions. Nevertheless, a substantial reduction in CC is reported consistently and a (smaller) reduction in precancerous lesions and HPV prevalence. Cost-effectiveness ratios are also very diverse and dependent oil the assumptions made. An HPV vaccine can be profitable if duration of vaccine-related immunity is high, efficacy is high, price is low, screening is reduced, administration is before sexual activity, discount rate is not too high, or if there is herd immunity. Conclusions: Human papillomavirus vaccines have the potential to reduce CC by at least approximately half of its current incidence, and this might be cost-effective if there is high efficacy with a long-lasting immunity.

Keywords: Articles, Assessment, Cancer, Cervical Cancer, Cervical-Cancer, Cochrane, Cost-Effectiveness, Cost-Effectiveness Analysis, Development, Efficacy, Health, Health Care, Hpv, Human, Human Papillomavirus, Impact, Literature, Medline, Methods, Nursing, Particle Vaccine, Population-Level Impact, Prevalence, Programs, Review, Science, Screening, Strategies, Systematic, Systematic Review, Trial, Type-16, Vaccine, Vaccines, Web of Science

? Polyzos, N.P., Mauri, D., Tsioras, S., Messini, C.I., Valachis, A. and Messinis, I.E. (2010), Intraperitoneal dissemination of endometrial cancer cells after hysteroscopy: A systematic review and meta-analysis. *International Journal of Gynecological Cancer*, **20** (2), 261-267.

Full Text: 2010\Int J Gyn Can20, 261.pdf

Abstract: Introduction: Hysteroscopy is a diagnostic procedure with a high accuracy in diagnosing endometrial cancer. Because of the increase of intrauterine pressure during distention media inflation, several retrospective studies postulated that it may result in cancer cell dissemination within the peritoneal cavity through the fallopian tubes. We therefore set to estimate whether hysteroscopy increases the risk for intraperitoneal cancer cell dissemination in patients with endometrial cancer and the risk of disease upstaging in patients with clinically early-stage disease. Methods: We searched the PUBMED, the ISI Web of Science, and the Cochrane Library through July 2009. Eligible trials were all controlled clinical trials in which patients were allocated to hysteroscopy (alone or after other diagnostic procedure, eg, dilation and curettage and biopsy) versus any other diagnostic procedure except hysteroscopy or no procedure before surgery for endometrial carcinoma. Results: Nine trials were included in our analysis. One thousand fifteen patients with histologically proven endometrial carcinoma were allocated to hysteroscopy or no hysteroscopy before surgery. Hysteroscopy resulted in a significantly higher rate of malignant peritoneal cytology (odds ratio [OR], 1.78; 95% confidence interval [CI], 1.13-2.79; P = 0.013) and significantly higher disease upstaging owing solely to the presence of malignant cells in the peritoneal cavity (OR, 2.61; 95% CI, 1.47-4.63; P = 0.001) compared with no hysteroscopy. When isotonic sodium chloride was used as distention medium, hysteroscopy resulted in a statistically significant higher rate of malignant peritoneal cytology (OR, 2.89; 95% CI, 1.48-5.64; P = 0.002), whereas a nonsignificant trend for higher malignant cells was observed in patients allocated to the hysteroscopy group (OR, 3.23; 95% CI, 0.94-11.09; P = 0.062) when inflated media pressure reached or exceeded 100 mm Hg. Conclusions: Hysteroscopy in patients with endometrial cancer hints a risk for cancer cell dissemination within the peritoneal cavity. Prospective and sufficiently powered trials are needed to clarify whether the risk of cancer cell spreading is correlated with worse prognosis.

Keywords: Accuracy, Analysis, Cancer, Cancer Cell Dissemination, Carcinoma, Clinical Trials, Cochrane, Controlled Clinical Trials, Diagnostic Hysteroscopy, Disease, Dissemination, Endometrial Cancer, Hysteroscopy, Increase, ISI, Meta-Analysis, Methods, Microscopic Extrauterine Spread, Pressure, Prognosis, Pubmed, Ratio, Review, Risk, Science, Stage, Surgery, Survival, Systematic, Systematic Review, Trend, Web of Science

# Title: International Journal of Gynecology & Obstetrics

Full Journal Title: [International Journal of Gynecology & Obstetrics](http://www.sciencedirect.com/science/journal/00207292)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Journal Country/Territory:

Language:

Publisher:

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Subject Categories:

: Impact Factor

? Oyelola, O.O., Olusi, S.O. and Ayangade, S.O. (1991), A comparative-study of oral glucose-tolerance tests in Nigerian women on 3 types of steroidal contraceptives. *International Journal of Gynecology & Obstetrics*, **36** (3), 233-237.

Full Text: [1991\Int J Gyn Obs36, 233.pdf](1991/Int%20J%20Gyn%20Obs36,%20233.pdf)

Abstract: Oral glucose tolerance tests (OGTT) were performed on 146 Nigerian women volunteers using one of three types of steroidal contraceptives: high-dose combined pills; low-dose combined pills and injectable progesterone. Twenty-six appropriately matched nonusers served as controls. The OGTT curves were analysed using the h-index (HI). Women on injectable progesterone and high-dose combined pills, respectively, had significantly higher (P < 0.05) mean HI than the controls. The low-dose combined pills had the least effect on carbohydrate metabolism.

Keywords: Carbohydrate Metabolism, Carbohydrate-Metabolism, Glucose, h-Index, High Dose, Low-Dose, Metabolism, Oral Glucose Tolerance Tests, P, Progesterone, Steroidal Contraceptives, Tolerance, Women

? Zheng, A.X. and Anderson, F.W.J. (2009), Obstetric fistula in low-income countries. *International Journal of Gynecology & Obstetrics*, **104** (2), 85-89.

Full Text: [2009\Int J Gyn Obs104, 85.pdf](2009/Int%20J%20Gyn%20Obs104,%2085.pdf)

Abstract: Objective: To identify, survey, and systematically review the current knowledge regarding obstetric fistula as a public health problem in low-income countries from the peer-reviewed literature. Methods: The Medline and Science Citation Index databases were searched to identify public health articles on obstetric fistula in low-income countries. Quantitative evidence-based papers were reviewed. Results: Thirty-three articles met the criteria for inclusion: 18 hospital-based reviews; 6 on risk factors/prevention; 4 on prevalence/incidence measurement; 3 on consequences of obstetric fistula; and 2 on community-based assessments. Conclusion: Obstetric fistula has received increased international attention as a public health problem, but reliable research on the burden of disease and interventions is lacking. (C) 2008 Published by Elsevier Ireland Ltd. on behalf of International Federation of Gynecology and Obstetrics.

Keywords: Africa, Citation, Evidence-Based Research, Fistula, Health, Knowledge, Maternal Morbidity, Medline, Nigeria, Obstetric Fistula, Obstructed Labor, Public Health, Research, Review, Risk-Factors, Science, Vesicovaginal Fistula, Women

# Title: International Journal of Health Geographics

Full Journal Title: [International Journal of Health Geographics](http://www.ij-healthgeographics.com/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1476-072X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Uthman, O.A. and Uthman, M.B. (2007), Geography of Africa biomedical publications: An analysis of 1996-2005 PubMed papers. *International Journal of Health Geographics*, **6**, Article Number 46.

Full Text: [2007\Int J Hea Geo6, 46.pdf](2007/Int%20J%20Hea%20Geo6,%2046.pdf)

Abstract: Background: Scientific publications play an important role in scientific process providing a key linkage between knowledge production and use. Scientific publishing activity worldwide over the past decades shows that most countries in Africa have low levels of publication. We sought to examine trends and contribution of different Africa subregions and individual countries as represented by the articles indexed by PubMed between 1996 and 2005. Results: Research production in Africa is highly skewed; South Africa, Egypt, and Nigeria make up a striking 60% of the total number of articles indexed by PubMed between 1996 and 2005. When adjusted for population size smaller countries, such as The Gambia, Gabon and Botswana, were more productive than Nigeria and Kenya. The Gambia and Eritrea had better records when total production was adjusted for gross domestic product. The contribution of Africa to global research production was persistently low through the period studied. Conclusion: In this study, we found that most populous and rich countries (such as South Africa, Egypt, and Nigeria) have correspondingly higher research production; but smaller countries can be productive. We noted continuous increases and reassuring trends in the production of research articles from all African subregions during the period 1996-2005. However, contribution of Africa to global research production was limited.

Keywords: Africa, Analysis, Bibliometric Analysis, Biomedical, Developing-Countries, Different World Regions, Egypt, Gross Domestic Product, Health, Indicators, Kenya, Knowledge, Linkage, Medical Journals, Nigeria, Papers, Population, Publication, Publications, Publishing, Pubmed, Records, Research, Research Capacity, Research Productivity, Role, Science, Size, South Africa, Trends

? Groneberg, D.A., Schilling, U., Scutaru, C., Uibel, S., Zitnik, S., Mueller, D., Klingelhoefer, D. and Kloft, B. (2011), Drowning - a scientometric analysis and data acquisition of a constant global problem employing density equalizing mapping and scientometric benchmarking procedures. *International Journal of Health Geographics*, **10**, Article Number 55.

Full Text: [2011\Int J Hea Geo10, 55.pdf](2011/Int%20J%20Hea%20Geo10,%2055.pdf)

Abstract: Background: Drowning is a constant global problem which claims approximately half a million victims worldwide each year, whereas the number of near-drowning victims is considerably higher. Public health strategies to reduce the burden of death are still limited. While research activities in the subject drowning grow constantly, yet there is no scientometric evaluation of the existing literature at the present time. Methods: The current study uses classical bibliometric tools and visualizing techniques such as density equalizing mapping to analyse and evaluate the scientific research in the field of drowning. The interpretation of the achieved results is also implemented in the context of the data collection of the WHO. Results: All studies related to drowning and listed in the ISI-Web of Science database since 1900 were identified using the search term “drowning”. Implementing bibliometric methods, a constant increase in quantitative markers such as number of publications per state, publication language or collaborations as well as qualitative markers such as citations were observed for research in the field of drowning. The combination with density equalizing mapping exposed different global patterns for research productivity and the total number of drowning deaths and drowning rates respectively. Chart techniques were used to illustrate bi- and multilateral research cooperation. Conclusions: The present study provides the first scientometric approach that visualizes research activity on the subject of drowning. It can be assumed that the scientific approach to this topic will achieve even greater dimensions because of its continuing actuality.

Keywords: Activities, Analysis, Bibliometric, Bibliometric Methods, Burden, Children, Citations, Collaborations, Cooperation, Data Collection, Density Equalizing Mapping, Disease, Drowning, Evaluation, Health, Impact Factors, Interpretation, ISI Web of Science, Language, Literature, Mapping, Medicine, Methods, Near-Drowning, Occupational Medicine, Prevention, Productivity, Public, Public Health, Publication, Publications, Qualitative, Quantitative, Research, Research Productivity, Science, Scientific Research, Scientometric Analysis, Scientometrics, WHO

# Title: International Journal of Health Services

Full Journal Title: International Journal of Health Services

ISO Abbreviated Title: Int. J. Health Serv.

JCR Abbreviated Title: Int J Health Serv

ISSN: 0020-7314

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Baywood Publ Co Inc

Publisher Address: 26 Austin Ave, Amityville, NY 11701

Subject Categories:

Health Care Sciences & Services: Impact Factor

? Epstein, S.S. (1990), Losing the war against cancer: Who’s to blame and what to do about it. *International Journal of Health Services*, **20** (1), 53-71.

Abstract: In 1971, the U.S. Congress launched a War on Cancer. Eighteen years and billions of dollars later, the United States is still in the grips of a cancer epidemic-and the number of victims grows every year. Much of the money has been squandered on a fruitless search for cancer “cures”. Little has been done to prevent exposure to carcinogenic chemicals in the environment, despite ample evidence that chemical pollution of our air, water, food, and the workplace is the major cause of cancer. On the contrary, government, industry, and a small coterie of scientists have combined to stymie efforts to introduce preventive measures, such as strict pollution control standards. But cancer remains a preventable disease. It is up to citizens to push for action.

# Title: International Journal of Heat and Mass Transfer

Full Journal Title: International Journal of Heat and Mass Transfer

ISO Abbreviated Title:

JCR Abbreviated Title:

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Issues/Year:

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Subject Categories:

: Impact Factor

Notes: highly cited

? Wang, B.X., Zhou, L.P. and Peng, X.F. (2003), A fractal model for predicting the effective thermal conductivity of liquid with suspension of nanoparticles. *International Journal of Heat and Mass Transfer*, **46** (14), 2665-2672.

Full Text: [2003\Int J Hea Mas Tra46, 2665.pdf](2003/Int%20J%20Hea%20Mas%20Tra46,%202665.pdf)

Abstract: Based on the effective medium approximation and the fractal theory for the description of nanoparticle cluster and its radial distribution, a method for modeling the effective thermal conductivity of “nanofluid” is established. The size effect and the surface adsorption of nanoparticles are taken into considerations. The proposed fractal model is discussed in detail for its application, and it predicts quite well with our recent measuring data for dilute suspensions of metallic oxide nanoparticles. (C) 2003 Elsevier Science Ltd. All rights reserved.

Keywords: Effective Thermal Conductivity, Nanoparticles, Clustering, Fractal Model, Surface Adsorption, Size Effect, Nonlinear Response, Dielectric-Constant, Composites, Clusters, Films

? Yang, T.S., Wu, C.H. and Yeh, C.F. (2006), Analysis of moisture purge in high purity gas distribution systems. *International Journal of Heat and Mass Transfer*, **49** (9-10), 1753-1759.

Full Text: [2006\Int J Hea Mas Tra49, 1753.pdf](2006/Int%20J%20Hea%20Mas%20Tra49,%201753.pdf)

Abstract: Moisture can easily adsorb on the inner surface of high purity gas distribution systems for semiconductor manufacturing processes, when the inner surface is exposed to the ambient air during regular or troubleshooting services. Before restarting the equipment, the adsorbed moisture has to be removed, typically by purging the gas distribution system with a high purity gas. An important system design issue therefore is to minimize the required moisture drydown time, so as to increase the productivity of the equipment. Here, the moisture purge/drydown process is analyzed using a simple phenomenological model, in which the moisture desorption kinetics is extracted from experimental data for moisture drydown in a single straight pipe. Based on that model, we also propose to minimize the overall moisture drydown time of a gas distribution system by properly allocating the purging gas flowrates in all branches of the system. It is demonstrated by a case study that, without altering the piping network design and total flowrate, our flowrate allocation scheme substantially reduces the overall moisture drydown time of the gas distribution system. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Desorption, Desorption Kinetics, Drydown, Drydown Time Minimization, Gas Distribution Systems, Kinetics, Moisture Adsorption, Purge

# Title: International Journal of High Performance Computing Applications

Full Journal Title: International Journal of High Performance Computing Applications

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Subject Categories:

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? Kandaswamy, M.A. and Kandemir, M.T. (1998), An experimental study to analyze and optimize Hartree-Fock application’s I/O with passion. *International Journal of High Performance Computing Applications*, **12** (4), 411-439.

Full Txet: [1998\Int J Hig Per Com App12, 411. pdf](1998/Int%20J%20Hig%20Per%20Com%20App12,%20411.%20pdf)

Abstract: Many scientific applications tend to perform high-volume data storage, data retrieval, and data processing, all of which demand high performance from the I/O subsystem. The focus and contribution of this work is to study the I/O behavior of the Hartree-Fock (HF) method using PASSION. HF’s I/O phases can contribute up to 62.34% of the total execution time. The authors reduce the execution time and I/O time up to 54% and 6%, respectively, of that of the original case through PASSION and its optimizations. Additionally, the authors categorize the factors that affect the I/O performance of HF into key application-related parameters and key system-related parameters. Based on extensive empirical results and within the experimental space presented in this paper, the authors order the parameters according to the their impact on HF’s I/O performance as follows: efficient interface, prefetching, buffering, number of I/O nodes, striping factor, and striping unit. The authors conclude that application-related factors have a more significant effect on HF’s I/O performance than the system-related factors within the experimental space presented in this paper.

Keywords: Authors, Behavior, Contribution, Experimental, Impact

# Title: International Journal of Human-Computer Studies

Full Journal Title: [International Journal of Human-Computer Studies](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6829&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=ea8cfb5a71b783b9a9bf7f5165d414b4)

ISO Abbreviated Title:

JCR Abbreviated Title:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Uren, V., Shum, S.B., Bachler, M. and Li, G.M. (2006), Sensemaking tools for understanding research literatures: Design, implementation and user evaluation. *International Journal of Human-Computer Studies*, **64** (5), 420-445.

Full Text: [2006\Int J Hum-Com Stu64, 420.pdf](2006/Int%20J%20Hum-Com%20Stu64,%20420.pdf)

Abstract: This paper describes the work undertaken in the Scholarly Ontologies Project. The aim of the project has been to develop a computational approach to support scholarly sensemaking, through interpretation and argumentation, enabling researchers to make claims: to describe and debate their view of a document’s key contributions and relationships to the literature. The project has investigated the technicalities and practicalities of capturing conceptual relations, within and between conventional documents in terms of abstract ontological structures. In this way, we have developed a new kind of index to distributed digital library systems. This paper reports a case study undertaken to test the sensemaking tools developed by the Scholarly Ontologies project. The tools used were ClaiMapper, which allows the user to sketch argument maps of individual papers and their connections, ClaiMaker, a server on which Such models can be stored and saved, which provides interpretative services to assist the querying of argument maps across multiple papers and ClaimFinder, a novice interface to the search services in ClaiMaker. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Bibliometrics, Evaluation, Modelling Interfaces, Research, Search Interfaces, User Studies, Web

? Reid, E.F. and Chen, H.C. (2007), Mapping the contemporary terrorism research domain. *International Journal of Human-Computer Studies*, **65** (1), 42-56.

Full Text: [2007\Int J Hum-Com Stu65, 42.pdf](2007/Int%20J%20Hum-Com%20Stu65,%2042.pdf)

Abstract: A systematic view of terrorism research to reveal the intellectual structure of the field and empirically discern the distinct set of core researchers, institutional affiliations, publications, and conceptual areas can help us gain a deeper understanding of approaches to terrorism. This paper responds to this need by using an integrated knowledge-mapping framework that we developed to identify the core researchers and knowledge creation approaches in terrorism. The framework uses three types of analysis: (a) basic analysis of scientific output using citation, bibliometric, and social network analyses, (b) content map analysis of large corpora of literature, and (c) co-citation analysis to analyse linkages among pairs of researchers. We applied domain visualization techniques such as content map analysis, block-modeling, and co-citation analysis to the literature and author citation data from the years 1965 to 2003. The data were gathered from ten databases such as the ISI Web of Science. The results reveal: (1) the names of the top 42 core terrorism researchers (e.g., Brian Jenkins, Bruce Hoffman, and Paul Wilkinson) as well as their institutional affiliations; (2) their influential publications; (3) clusters of terrorism researchers who work in similar areas; and (4) that the research focus has shifted from terrorism as a low-intensity conflict to a strategic threat to world powers with increased focus on Osama Bin Laden.

Keywords: Analysis, Author Cocitation Analysis, Bibliometric, Bibliometrics, Citation, Clusters, Co-Citation, Co-Citation Analysis, Cocitation, Core, Creation, Databases, Domain Visualization, Intellectual Structure, ISI, Knowledge, Output, Paper, Publications, Research, Scientific Output, Social, Social Network, Structure, Techniques, Terrorism, Visualization, Web of Science

? Hornbaek, K. (2009), “Most cited paper award” for the *International Journal of Human-Computer Studies* Kasper Hornbaek. *International Journal of Human-Computer Studies*, **67** (6), 483.

Full Text: [2009\Int J Hum-Com Stu67, 483.pdf](2009/Int%20J%20Hum-Com%20Stu67,%20483.pdf)

Keywords: International, Journal

? (2010), “Most cited paper award” for the *International Journal of Human-Computer Studies*. *International Journal of Human-Computer Studies*, **68** (4), 183-184.

Full Text: [2010\Int J Hum-Com Stu68, 183.pdf](2010/Int%20J%20Hum-Com%20Stu68,%20183.pdf)

# Title: International Journal of Hydrogen Energy

Full Journal Title: [International Journal of Hydrogen Energy](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5729&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=e6e18bac11598124043768bd72517b0b)

ISO Abbreviated Title:

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ISSN:

Issues/Year:

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Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Goltsova, L.F., Garkusheva, V.A., Alimova, R.F. and Goltsov, V.A. (1990), Scientometric studies of the problem of “hydrogen energy and technology” in the world. *International Journal of Hydrogen Energy*, **15** (9), 655-661.

Full Text: [1990\Int J Hyd Ene15, 655.pdf](1990/Int%20J%20Hyd%20Ene15,%20655.pdf)

Abstract: Scientific information structure and the subject classification of the problem “hydrogen energy and technology” have been worked out. An investigation on hydrogen energy and technology is carried out in 39 countries of the world and papers are published in 21 languages. The growth in the number of publications on hydrogen energy and technology for 1977–1987 has been analysed and the core and zones of publications distribution have been assessed. There is shown a necessity to take into account publications of the 2nd and 3rd zones concentrating more than 50% of the total publications.

Notes: highly cited

? Das, D. and Veziroğlu, T.N. (2001), Hydrogen production by biological processes: A survey of literature. *International Journal of Hydrogen Energy*, **26** (1), 13-28.

Full Text: [2001\Int J Hyd Ene26, 13.pdf](2001/Int%20J%20Hyd%20Ene26,%2013.pdf)

Abstract: Hydrogen is the fuel of the future mainly due to its high conversion efficiency, recyclability and nonpolluting nature. Biological hydrogen production processes are found to be more environment friendly and less energy intensive as compared to thermochemical and electrochemical processes. They are mostly controlled by either photosynthetic or fermentative organisms. Till today, more emphasis has been given on the former processes. Nitrogenase and hydrogenase play very important role. Genetic manipulation of cyanobacteria (hydrogenase negative gene) improves the hydrogen generation. The paper presents a survey of biological hydrogen production processes. The microorganisms and biochemical pathways involved in hydrogen generation processes are presented in some detail. Several developmental works are discussed. Immobilized system is found suitable for the continuous hydrogen production. About 28% of energy can be recovered in the form of hydrogen using sucrose as substrate. Fermentative hydrogen production processes have some edge over the other biological processes. (C) 2000 International Association for Hydrogen Energy. Published by Elsevier Science Ltd. All rights reserved.

Keywords: Hydrogen, Photosynthesis, Fermentative, Hybrid Bioreactions, Blue-Green-Algae, Rhodobacter-Sphaeroides Ou-001, Photosynthetic Bacterium, Enterobacter-Aerogenes, Waste-Water, Rhodopseudomonas-Capsulata, Phormidium-Valderianum, Halobacterium-Halobium, Anabaena-Cylindrica, Nitrogen-Fixation

? Celiktas, M.S. and Kocar, G. (2010), Hydrogen is not an utopia for Turkey. *International Journal of Hydrogen Energy*, **35** (1), 9-18.

Full Text: [2010\Int J Hyd Ene35, 9.pdf](2010/Int%20J%20Hyd%20Ene35,%209.pdf)

Abstract: The aim of this study was to explore how the future of technological developments in hydrogen will be shaped in Turkey by using a two-round Delphi method undertaken to determine and measure the expectations of the sector representatives through online surveys where a total of 60 experts responded from 18 different locations. The article discusses not only the expert sights on hydrogen technologies but also all bibliometrical approaches. The results showed that the hydrogen economy will enhance innovations as well as economic prosperities with the support of appropriate policies. Formulating such policies requires a timely and detailed understanding of the latest R&D trends and developments in science and technology policy in all developed countries, and the comprehensive analysis of these developments to enable accurate predictions of future science and technology trends. Therefore, we hope that this study can shed a light on the future use of hydrogen technologies, especially for policy makers.

Keywords: Hydrogen Energy, Delphi, Technology Foresight, Energy, Technology, R&D

? Chen, Y.H., Chen, C.Y. and Lee, S.C. (2011), Technology forecasting and patent strategy of hydrogen energy and fuel cell technologies. *International Journal of Hydrogen Energy*, **36** (12), 6957-6969.

Full Text: [2011\Int J Hyd Ene36, 6957.pdf](2011/Int%20J%20Hyd%20Ene36,%206957.pdf)

Abstract: This study presents the technological S-curves that integrates the Bibliometric and patent analysis into the Logistic growth curve model for hydrogen energy and fuel cell technologies and identifies the optimal patent strategy for the fuel cell industry, including PEMFC, SOFC, and DMFC/DAFC. Empirical analysis is via an expert survey and Co-word analysis using the United States Patent and Trademark Office database to obtain useful data. Analytical results demonstrate that the S-curves is a highly effective means of quantifying how technology forecasting of cumulative publication patent number. Analytical results also indicate that technologies for generating and storing hydrogen have not yet reached technological maturity; thus, additional R&D funding is needed to accelerate the development of hydrogen technology. Conversely, fuel cell technologies have reached technological maturity, and related patent strategies include freedom to operate, licensing, and niche inventions. The proposed model can be applied to all high-technology cases, and particularly to new clean technologies. The study concludes by outlining the limitations of the proposed model and directions for further research. Copyright (C) 2011, Hydrogen Energy Publications, LLC. Published by Elsevier Ltd. All rights reserved.

Keywords: Bibliometric, Copyright, Databases, Development, Diffusion, Energy, Example, Fuel Cell, Gasification, Growth, Hydrogen Energy, Industry, Logistic Growth Curve, Model, Patent Strategy, Publication, Publications, Research, S-Curves, Substitution, Survey

? Morsy, F.M. (2011), Hydrogen production from acid hydrolyzed molasses by the hydrogen overproducing *Escherichia coli* strain HD701 and subsequent use of the waste bacterial biomass for biosorption of Cd(II) and Zn(II). *International Journal of Hydrogen Energy*, **36** (22), 14381-14390.

Full Text: [2011\Int J Hyd Ene36, 14381.pdf](2011/Int%20J%20Hyd%20Ene36,%2014381.pdf)

Abstract: This study was devoted to investigate production of hydrogen gas from acid hydrolyzed molasses by Escherichia coil HD701 and to explore the possible use of the waste bacterial biomass in biosorption technology. In variable substrate concentration experiments (1, 2.5, 5, 10 and 15 g L-1), the highest cumulative hydrogen gas (570 ml H2 L-1) and formation rate (19 ml H2 h-1 L-1) were obtained from 10 g L-1 reducing sugars. However, the highest yield (132 ml H2 g-1 reducing sugars) was obtained at a moderate hydrogen formation rate (11 ml H2 h-1 L-1) from 2.5 g L-1 reducing sugars. Subsequent to H2 production, the waste E. coil biomass was collected and its biosorption efficiency for Cd2+ and Zn2+ was investigated. The biosorption kinetics of both heavy metals fitted well with the pseudo second-order kinetic model. Based on the Langmuir biosorption isotherm, the maximum biosorption capacities (*q*max) of E. coli waste biomass for Cd2+ and Zn2+ were 162.1 and 137.9 (mg/g), respectively. These qmax values are higher than those of many other previously studied biosorbents and were around three times more than that of aerobically grown *E*. *coli*. The FTIR spectra showed an appearance of strong peaks for the amine groups and an increase in the intensity of many other functional groups in the waste biomass of E. coli after hydrogen production in comparison to that of aerobically grown E. coli which explain the higher biosorption capacity for Cd2+ or Zn2+ by the waste biomass of E. coil after hydrogen production. These results indicate that E. coli waste biomass after hydrogen production can be efficiently used in biosorption technology. Interlinking such biotechnologies is potentially possible in future applications to reduce the cost of the biosorption technology and duplicate the benefits of biological H2 production technology. Copyright (C) 2011, Hydrogen Energy Publications, LLC. Published by Elsevier Ltd. All rights reserved.

Keywords: Algal Biomass, Aqueous-Solutions, Biosorption, Cadmium, Cd2+, Cd(II), Copper, FTIR, Heavy Metals, Heavy-Metals, Hydrogen Production, Isotherm, Kinetic, Kinetics, Langmuir, Lead, Lyophilized Cells, Metals, Penicillium Biomass, Pseudomonas-Aeruginosa, Removal, Waste Escherichia Coli Biomass

# Title: International Journal of Hygiene and Environmental Health

Full Journal Title: [International Journal of Hygiene and Environmental Health](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=20443&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=333ede8ac2ac40418c7f5a12b6889436)

ISO Abbreviated Title: Int. J. Hyg. Environ. Health.

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Subject Categories:

Public, Environmental & Occupational Health: Impact Factor 0.480, / (2001)

Infectious Diseases: Impact Factor 0.480, / (2001)

? Alumaa, P., Kirso, U., Petersell, V. and Steinnes, E. (2002), Sorption of toxic heavy metals to soil. *International Journal of Hygiene and Environmental Health*, **204** (5-6), 375-376.

Abstract: The surface soil is a major recipient of pollutants, including heavy metals, through atmospheric deposition, agricultural practices, and waste disposal. In the present work the sorption capacity of different types of soils to toxic heavy metals, i.e. chromium, copper, cadmium and lead has been studied. Experimental adsorption data for metals to the soil obtained by the batch method were fitted by linear isotherm. The various soils showed a very different behaviour in sorption of heavy metals. The distribution coefficient K-d, which is an indication of the adsorbing capacity of the substrate, varies within a wide range, from 57 to 53 000 1 kg-1. Desorption of metals from the solid phase was found to be small, indicating that the soil matrix is affecting the metal mobility by modifying the bonding of pollutants to the soil system consequently affecting the potential for soil remediation processes.

Keywords: Soil, Heavy Metals, Sorption, Distribution Coefficients

# Title: International Journal of Immunogenetics

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: Impact Factor

? Hu, W. and Ren, H. (2011), A meta-analysis of the association of IRF5 polymorphism with systemic lupus erythematosus. *International Journal of Immunogenetics*, **38** (5), 411-417.

Full Text: [2011\Int J Imm38, 411.pdf](2011/Int%20J%20Imm38,%20411.pdf)

Abstract: To more precisely estimate the association between interferon regulatory factor 5 (IRF5) polymorphisms and systemic lupus erythematosus (SLE) risk, we surveyed studies on the association of IRF5 rs2204640, rs10954213, rs729302 or rs2280714 with SLE using PubMed, Embase and Web of Science up to February 2011. Two investigators independently assessed the data quality and extracted the data. A total of 17 comparisons from ten relevant studies involving 6403 patients and 7475 controls were included to analyse the association between IRF5 rs2004640 and SLE risk (odds ratio, OR = 1.41, 95% confidence interval (CI) 1.34-1.49, P = 0.000). As for rs10954213, there were ten comparisons from six relevant studies involving 3461 patients and 3692 controls were included to analyse the association between IRF5 rs10954213 and SLE risk (OR = 1.23, 95% CI 1.08-1.39, P = 0.002). and this meta-analysis also showed a significant association of rs729302 (OR = 0.78, 95% CI 0.74-0.83, P = 0.000), rs2280714 (OR = 0.90, 95% CI 0.83-0.98, P = 0.021) with SLE. In a subgroup analysis by ethnicity, significantly increased SLE risk was associated with IRF5 rs2004640 T allele in populations of European, Asian and Latin American origin, and the rs10954213 A allele is significantly associated with SLE in European origin but not in Asian origin. This meta-analysis suggested that IRF5 gene polymorphism was associated with SLE in multiple ethnic populations.

Keywords: Analysis, Ethnicity, Expression, Functional Polymorphism, Gene Polymorphism, Genetic Association, Haplotype, I Interferon System, Increased Risk, Japanese Population, Latin American, Meta Analysis, Meta-Analysis, Patients, Polymorphism, Polymorphisms, Pubmed, Ratio, Regulatory Factor 5, Risk, Science, SLE, Susceptibility, Systemic Lupus Erythematosus, Variants, Web of Science

# Title: International Journal of Industrial Ergonomics

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Subject Categories:

: Impact Factor

? Mani, R., Milosavljevic, S. and Sullivan, S.J. (2010), The effect of occupational whole-body vibration on standing balance: A systematic review. *International Journal of Industrial Ergonomics*, **40** (6), 698-709.

Abstract: Adverse health effects from exposure to occupational whole-body vibration (WBV) are common among drivers. in particular some researchers consider that there is kinaesthetic and balance disturbance from WBV exposure in the workplace and this might be one of the aetiological factors responsible for occupational low back pain in drivers. The purpose of this study was to undertake a critical review of the literature to determine whether exposure to seated occupational WBV can affect standing balance performance in an actual or simulated occupational environment. Specific keywords and MeSH terms for three major areas included WBV, balance and occupation. These were used to conduct a systematic search of the following databases; Pub Med, EMBASE (Ovid), Med line (Ovid), CINAHL (EBSCO), Academic Search Complete (ASC), AMED, Scopus, Web of Science, Science Direct, Proquest, Cochrane library(OVID), IEEExplore and Pro Quest Dissertations and thesis, Google Scholar, World Cat and related conference proceedings. Five articles met the inclusion criteria and were assessed for quality. Two were field studies conducted on actual vehicles (a long haul freight truck and a bulldozer), while the other three were laboratory studies simulating the characteristics of the following vehicles; long-haul-dump vehicle, underground mine shuttle car, and helicopter. The systematic review scored the methodological quality of the included articles with an average and standard deviation of 76 +/- 12.3% (range 59- 93%) indicative of high quality. Three of the five studies (two field and one laboratory) found evidence for seated WBV decreasing standing balance performance while two laboratory studies did not find such effects. Thus there is modest evidence to suggest there is a decrease in standing balance performance following exposure to seated occupational WBV. Relevance to industry: This systematic review suggests that balance deficits may exist immediately following exposure to occupational seated WBV and may predispose driver/operator to low back injury during manual material handling tasks immediately post driving. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: All-Terrain Vehicles, Balance, Clinical Utility, Cochrane, Databases, Disc Degeneration, Dissertations, Driving, Embase, Environment, Exposure, Foot Placement, Google Scholar, Healthy-Young, Industry, Injury, Injury Prevention, Literature, Low-Back-Pain, Occupation, Occupational, Of-Pressure Trajectories, Pain, Postural Control, Postural Control, Pub Med, Researchers, Review, Science, Scopus, Seated, Systematic, Systematic Review, Trunk, Vehicle Driving, Vibration, Web of Science, Whole-Body Vibration

# Title: International Journal of Industrial Organization

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Subject Categories:

: Impact Factor

? Deng, Y. (2008), The value of knowledge spillovers in the U.S. semiconductor industry. *International Journal of Industrial Organization*, **26** (4), 1044-1058.

Full Text: [2008\Int J Ind Org26, 1044.pdf](2008/Int%20J%20Ind%20Org26,%201044.pdf)

Abstract: This paper aims at quantifying the economic value of knowledge spillovers by exploring information contained in patent citations. We estimate a market valuation equation of the U.S. semiconductor firms during the 1980s and 1990s, and find an average value of $0.6 to 1.2 million “R&D-equivalent” dollars for knowledge spillovers embodied in one patent citation. For an average semiconductor firm, such an estimate implies that the total value of knowledge spillovers the firm received during the sample period can be as high as half of its actual total R&D expenditures in the same period. This provides a direct measure of the economic value of social returns or externalities of relevant technological innovations. We also find that the value of knowledge spillovers declines as the size of firm’s patent portfolio increases, and that self citations are more valuable than external citations, indicating a significant amount of tacit knowledge or know-how spillovers that occur within the firm. 2007 Published by Elsevier B.V.

Keywords: Citation, Citations, Knowledge Spillovers, Patent Citations, Patented Inventions, R&D, Self-Citations, Semiconductor Industry, US

# Title: International Journal of Infectious Diseases

Full Journal Title: [International Journal of Infectious Diseases](http://www.sciencedirect.com/science/journal/12019712)

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Guerrant, R.L., Moore, S.R. and Lima, A.A. (2000), Safe drinking water: An attainable goal, key to health and development, appears farther away. *International Journal of Infectious Diseases*, **4** (1), 1-2.

Full Text: [2000\Int J Inf Dis4, 1.pdf](2000/Int%20J%20Inf%20Dis4,%201.pdf)

? Welch, T.P. (2000), Risk of giardiasis from consumption of wilderness water in North America: A systematic review of epidemiologic data. *International Journal of Infectious Diseases*, **4** (2), 100-103.

Full Text: [2000\Int J Inf Dis4, 100.pdf](2000/Int%20J%20Inf%20Dis4,%20100.pdf)

Abstract: OBJECTIVES: A meta-analytic study was conducted to test the hypothesis that consumption of water from North American backcountry sources poses a statistically significant risk for acquisition of Giardiasis.

METHODS: The biomedical literature was surveyed by accessing Medline, and identified studies were supplemented with references in current reviews, published dissertations, and prior communications with state health departments. Studies were classified by methodologic design and subjected to predetermined inclusion criteria. Odds ratios with 95% confidence intervals, chi-squares, and P-values for epidemiologic surveys were either computed from raw data or abstracted directly from the included studies.

RESULTS: Of 104 articles identified in the initial screening, nine met the inclusion criteria. Neither of two case reports met the criteria of the Centers for Disease Control and Prevention (CDC) for waterborne disease outbreak. Two prospective studies were identified, but neither showed a significant association. of four case-control studies providing data, three reported an odds ratio of greater than one.

CONCLUSIONS: Published reports of confirmed *Giardia*sis among outdoor recreationalists clearly demonstrate a high incidence among this population. However, the evidence for an association between drinking backcountry water and acquiring *Giardia*sis is minimal. Education efforts aimed at outdoor recreationalists should place more emphasis on handwashing than on water purification. Further studies should attempt to separate the specific risk factor of drinking water from backcountry sources from other behaviors among this group that may contribute to the risk.

? Tuon, F.F., Amato, V.S. and Penteado, S.R. (2009), Bladder irrigation with amphotericin B and fungal urinary tract infection-systematic review with meta-analysis. *International Journal of Infectious Diseases*, **13** (6), 701-706.

Full Text: [2009\Int J Inf Dis13, 701.pdf](2009/Int%20J%20Inf%20Dis13,%20701.pdf)

Abstract: Background: Candiduria is a hospital-associated infection and a daily problem in the intensive care unit. The treatment of asymptomatic candiduria is not well established and the use of amphotericin B bladder irrigation (ABBI) is controversial. The aim of this systematic review was to determine the best place for this therapy in practice. Methods: The databases searched in this study included MEDLINE, EMBASE, Web of Science, and LILACS (January 1960-June 2007). We included manuscripts with data on the treatment of candiduria using ABBI. The studies were classified as comparative, dose-finding, or non-comparative. Results: From 213 studies, nine articles (377 patients) met our inclusion criteria. ABBI showed a higher clearance of the candiduria 24 hours after the end of therapy than fluconazole (odds ratio (OR) 0.57, 95% confidence interval (CI) 0.32-1.00). Fungal culture 5 days after the end of both therapies showed a similar response (OR 1.51, 95% CI 0.81-2.80). The evaluation of ABBI using an intermittent or continuous system of delivery showed an early candiduria clearance (24 hours after therapy) of 80% and 82%, respectively (OR 0.87, 95% CI 0.52-1.36). Candiduria clearance at >5 days after the therapy showed a superior response using continuous bladder irrigation with amphotericin B (OR 0.52, 95% CI 0.29-0.94). The use of continuous ABBI for more than 5 days showed a better result (88% vs. 78%) than ABBI for less than 5 days, but without significance (OR 0.55, 95% CI 0.34-1.04). Conclusion: Although the strength of the results in the underlying literature is not sufficient to allow the drawing of definitive conclusions, ABBI appears to be as effective as fluconazole, but it does not offer systemic antifungal therapy and should only be used for asymptomatic candiduria. (C) 2008 International Society for Infectious Diseases. Published by Elsevier Ltd. All rights reserved.

Keywords: Amphotericin B, Bladder, Candida, Candidemia, Candiduria, Candiduria, Clearance, Cystitis, Diagnosis, Fluconazole, Funguria, Funguria, International, Management, Meta-Analysis, Urinary Tract Infection

? Chen, T.C., Lu, P.L., Lin, C.Y., Lin, W.R. and Chen, Y.H. (2011), Fluoroquinolones are associated with delayed treatment and resistance in tuberculosis: A systematic review and meta-analysis. *International Journal of Infectious Diseases*, **15** (3), E211-E216.

Abstract: Background: Current guidelines for treating community-acquired pneumonia recommend the use of fluoroquinolones for high-risk patients. Previous studies have reported controversial results as to whether fluoroquinolones are associated with delayed diagnosis and treatment of pulmonary tuberculosis (TB) and the development of fluoroquinolone-resistant Mycobacterium tuberculosis. We performed a systematic review and meta-analysis to clarify these issues. Methods: The following databases were searched through September 30, 2010: PUBMED, EMBASE, CINAHL, Cochrane Library, Web of Science, BIOSIS Previews, and the ACP Journal Club. We considered studies that addressed the issues of delay in diagnosis and treatment of TB and the development of resistance. Results: Nine eligible studies (four for delays and five for resistance issues) were included in the meta-analysis from the 770 articles originally identified in the database search. The mean duration of delayed diagnosis and treatment of pulmonary TB in the fluoroquinolone prescription group was 19.03 days, significantly longer than that in the non-fluoroquinolone group (95% confidence interval (CI) 10.87 to 27.18, p < 0.001). The pooled odds ratio of developing a fluoroquinolone-resistant M. tuberculosis strain was 2.70 (95% CI 1.30 to 5.60, p = 0.008). No significant heterogeneity was found among studies in the meta-analysis. Conclusions: Empirical fluoroquinolone prescriptions for pneumonia are associated with longer delays in diagnosis and treatment of pulmonary TB and a higher risk of developing fluoroquinolone-resistant M. tuberculosis. (C) 2010 International Society for Infectious Diseases. Published by Elsevier Ltd. All rights reserved.

Keywords: 1st-Line Antibiotics, Cochrane, Community-Acquired Pneumonia, Databases, Development, Diagnosis, Embase, Empiric Treatment, Exposure, Fluoroquinolone, Guidelines, High-Risk Patients, Impact, Journal, Management, Meta-Analysis, Methods, Mycobacterium-Tuberculosis, Pubmed, Pulmonary Tuberculosis, Ratio, Resistance, Review, Risk, Science, Systematic, Systematic Review, Tb, Treatment, Tuberculosis, Web of Science

# Title: International Journal of Information Management

Full Journal Title: [International Journal of Information Management](http://www.sciencedirect.com/science/journal/02684012)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Peritz, B.C. (1986), The periodical literature of demography and Bradford’s law. *International Journal of Information Management*, **6** (3), 145-155.

Full Text: [1986\Int J Inf Man6, 145.pdf](1986/Int%20J%20Inf%20Man6,%20145.pdf)

Abstract: This paper presents a statistical analysis of the journals and papers abstracted in *Population Index*, 1984. A Bradford distribution is fitted to the papers in all the journals regularly scanned by *Population Index*, as well as in the journals specifically designated as demography. The fit of these distributions, and in particular the second one, is remarkably close. A core of journals for demography is identified. A breakdown of the journals and the papers published in them by the journal’s field is presented and discussed. Data on the distribution of journals by country of publication are also given. An attempt is made to correlate the journal’s productivity according to *Population Index* with the citation impact according to *Social Sciences Citation Index*.

? Wallace, D.P., Van Fleet, C. and Downs, L.J. (2011), The research core of the knowledge management literature. *International Journal of Information Management*, **31** (1), 14-20.

Full Text: [2011\Int J Inf Man31, 14.pdf](2011/Int%20J%20Inf%20Man31,%2014.pdf)

Abstract: A bibliometric analysis and a content analysis were conducted to explore the nature of the knowledge management literature. For the bibliometric analysis, three levels of Bradford analysis were used to examine the shape of the knowledge management literature based on 21,596 references from 2771 source publications. Each of the three analyses conformed to the typical curve of the Bradford distribution. For the content analysis, the texts of 630 knowledge management articles were analyzed to address the question of what research methodologies are used in the knowledge management literature. It was found that 27.8 percent of knowledge management-related articles in knowledge management journals used no identifiable research method. Of the remaining 455 refereed articles, 60 percent employed mainstream social sciences research methodologies. The remaining 40 percent of the articles using an identifiable methodology were characterized by the use of “provisional methods” that appeared to substitute for more formally defined or scientifically based research methodologies. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Analyses, Analysis, Bibliometric, Bibliometric Analysis, Bibliometrics, Bradford Law, Content Analysis, Discipline, Discourses, Distribution, Journals, Knowledge, Knowledge Management, Literature, Management, Methodologies, Methodology, Professional Literature, Publications, References, Research, Research Method, Research Methodologies, Research Methods, Rights, Sciences, Social, Social Sciences, Source, Systems

# Title: International Journal of Intelligent Systems

Full Journal Title: International Journal of Intelligent Systems

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Nowakowska, M. (1990), Cluster-Analysis, graphs, and branching-processes as new methodologies for intelligent systems on example of bibliometric and social network data. *International Journal of Intelligent Systems*, **5** (3), 247-263

Keywords: Bibliometric

# Title: International Journal of Language & Communication Disorders

Full Journal Title: International Journal of Language & Communication Disorders

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1368-2822

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Lewison, G. and Carding, P. (2003), Evaluating UK research in speech and language therapy. *International Journal of Language & Communication Disorders*, **38** (1), 65-84.

Full Text: [I\Int J Lan Com Dis38, 65.pdf](I/Int%20J%20Lan%20Com%20Dis38,%2065.pdf)

Abstract: Background: There has been a steady growth in recent years in British higher-degree training in speech and language therapy. But what is the standing of UK research in the subject and its component areas which should underpin and inform such training? How can such research be evaluated?

Aims: The intention was to compare UK publications relevant to speech and language therapy with those of other countries, both quantitatively and qualitatively. We sought then to examine the UK papers in more detail to analyse their sources of funding, their geographical distribution and the ways in which they could appropriately be evaluated.

Methods & Procedures: Papers were selectively retrieved from the Science Citation Index and the Social Sciences Citation Index for 1991-2000 by means of a filter based on journal names and paper title words. They were subsequently checked to remove many false positives. The papers were classified into one of seven subject areas and by their research level (from clinical to basic). Their importance was estimated through their potential impact on other researchers, as determined by the citation score of their journals, by the numbers of citations they actually received and by the subjective esteem in which the various journals were held by UK speech and language researchers.

Outcomes & Results: World output of speech and language therapy papers has averaged 1000 papers per year during the 1990s, and has grown by half over the period. UK output has been about 12% of the total, compared with 10% in biomedicine, and is published in high impact journals relative to the norm for the field, which is quite a low rate compared with biomedicine overall. Almost half the UK papers had no funding acknowledgements, with the private-non-profit and industrial sectors playing less of a role than in other biomedical areas. Papers in seven subject areas showed substantial differences in their performance on the four criteria selected.

Conclusions: The state of British speech and language research appears to be satisfactory, with an above average output in both quantity and quality. However, it is not attracting funding from some types of sponsors and is not being published in general medical journals where it might have a wider influence on general clinical practice. It is also not clear how best such research can be evaluated, although conventional citation counts may be relevant for some subject areas.

Keywords: Bibliometrics, Biomedical-Research, Citations, Evaluation, Funding, Journals, Research, Subfields

# Title: International Journal of Legal Medicine

Full Journal Title: [International Journal of Legal Medicine](http://www.springerlink.com/app/home/contribution.asp?wasp=7cdbb931ec104d8fb772dd1eb9064225&referrer=parent&backto=issue,1,16;journal,4,54;searchpublicationsresults,1,2;)

ISO Abbreviated Title: Int. J. Legal. Med.

JCR Abbreviated Title:

ISSN: 0937-9827

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Jones, A.W. (2005), Creme de la creme in forensic science and legal medicine - The most highly cited articles, authors and journals 1981-2003. *International Journal of Legal Medicine*, **119** (2), 59-65.

Full Text: [2005\Int J Leg Med119, 59.pdf](2005/Int%20J%20Leg%20Med119,%2059.pdf)

Abstract: The importance and prestige of a scientific journal is increasingly being judged by the number of times the articles it publishes are cited or referenced in articles published in other scientific journals. Citation counting is also used to assess the merits of individual scientists when academic promotion and tenure are decided. With the help of Thomson, Institute for Scientific Information (Thomson ISI) a citation database was created for six leading forensic science and legal medicine journals. This database was used to determine the most highly cited articles, authors, journals and the most prolific authors of articles in the forensic sciences. The forensic science and legal medicine journals evaluated were: Journal of Forensic Sciences (JFS), Forensic Science International (FSI), International Journal of Legal Medicine (IJLM), Medicine, Science and the Law (MSL), American Journal of Forensic Medicine and Pathology (AJFMP), and Science and Justice (S&J). The resulting forensics database contained 14,210 papers published between 1981 and 2003. This in-depth bibliometric analysis has identified the creme de la creme in forensic science and legal medicine in a quantitative and objective way by citation analysis with focus on articles, authors and journals.

Keywords: Academic Promotion, Bibliometric, Bibliometric Analysis, Bibliometrics, Citation, Citation Analysis, Citation-Classics, Citations, Forensic Science, Impact Factors, Impact Factors, Indicators, Institute for Scientific Information, ISI, Journal, Journals, Legal Medicine, Promotion, Promotion and Tenure, Quality, Sciences, Scientists, Tenure

? Ferrara, S.D., Bajanowski, T., Cecchi, R., Boscolo-Berto, R. and Viel, G. (2011), Bio-medicolegal scientific research in Europe: A comprehensive bibliometric overview. *International Journal of Legal Medicine*, **125** (3), 393-402.

Full Text: [2011\Int J Leg Med125, 393.pdf](2011/Int%20J%20Leg%20Med125,%20393.pdf)

Abstract: In times of globalisation, the future of bio-medicolegal sciences in Europe depends on the scientific community’s ability to develop new strategies for research, to introduce new and generally accepted standards, to develop new analytical methods, all in order to draw up inter-site, multidisciplinary and interdisciplinary long-term research projects, eligible for European Union (EU) funding. To analyse the scientific output and to identify the topics of greatest interest and appeal in these sciences, an innovative method has been developed to select and analyse publications. This method has been applied to analyse a total of 21,176 records from PubMed out of which 5,826 papers were suitable for further analysis because they were published in national and international journals in the time between January 1, 2005 and June 1, 2010 by European authors in the field of interest. In 69% of all manuscripts, authors presented results of systematic research (original articles); 84% of the papers were written in English language. The cumulative impact factor increased from 1,670 points in 2005 to 1,878 in 2009, and extrapolated 2,812 points in 2010. The most frequent topics were the description of new analytical methods in forensic toxicology (5.7% of all papers), the analysis of short tandem repeat systems (STR, 5.6%) as well as the analysis of injury mechanisms in forensic pathology and clinical forensic medicine (4.9%). If the impact factor related potential of different topics is calculated (ratio of frequency of papers and frequency of impact points achieved), SIDS research reaches 1.64 points, followed by studies on mtDNA (1.59) and the development of new analytical methods in forensic toxicology (1.49). The findings made in the present bibliometric analysis reveal a clear and interesting overall picture of the European scientific production and productivity and could be used to identify the most innovative research lines.

Keywords: Analysis, Analytical Strategies, Articles, Authors, Authorship, Bibliometric, Bibliometric Analysis, Citation, Clinical, Clinical Forensic Medicine, Cumulative, Cumulative Impact, Development, EU, Europe, European Union, Field, Forensic, Forensic Medicine, Forensic Pathology, Forensic Toxicology, Funding, Future, Impact, Impact Factor, Injury, Interdisciplinary, International, Journals, Legal-Medicine, Long Term, Long-Term, Mechanisms, Medicine, Methods, Multidisciplinary, Papers, Pathology, Potential, Productivity, Publications, Pubmed, Quality, Records, Research, Research in Bio-Medicolegal Sciences, Sciences, Scientific Output, Scientific Production, Scientific Research, SIDS, Standards, Systems, Topics, Toxicology

? Viel, G., Boscolo-Berto, R., Cecchi, R., Bajanowski, T., Vieira, N.D. and Ferrara, S.D. (2011), Bio-medicolegal scientific research in Europe. A country-based analysis. *International Journal of Legal Medicine*, **125** (5), 717-725.

Full Text: [2011\Int J Leg Med125, 717.pdf](2011/Int%20J%20Leg%20Med125,%20717.pdf)

Abstract: The European mosaic of socio-cultural, economic and legal realities is reflected in forensic and legal medicine, in which a great variety of operational modes of forensic medical services, organisational systems, structures, functional competences and scientific research strategies can be observed. The present work analyses the European bio-medicolegal scientific output of the last 5.5 years (exact time window, January 1, 2005-June 1, 2010), categorising papers by nationality of the corresponding author and forensic sub-discipline in question, in order to identify the peculiarities of national sub-specialised competences and to build up international research projects. This country-based bibliometric analysis, based on the number of articles and the impact factor produced by each European country, also considering its economic profile (gross domestic product and per capita gross domestic product), highlights the prevailing productive role of Western and Southern Europe (Germany, Great Britain, Italy, Switzerland, Spain and France). Categorising scientific output by forensic sub-discipline and branch, significant in terms of impact factor are contributions from Germany (coming first in Pathology, Toxicology, Genetics, Anthropology and Biological Criminalistics), Great Britain (first in Clinical Forensic Medicine, Malpractice and Invalidity-Social Insurance), Switzerland (first in Criminology), Italy (second in Toxicology, Anthropology and Invalidity-Social Insurance), The Netherlands (third in Clinical Forensic Medicine and Medical Law and Ethics), Spain (third in Genetics, Criminalistics and Invalidity-Social Insurance) and France (third in Toxicology and Malpractice). Interestingly, several countries with low gross domestic product, such as Poland, Turkey and other Eastern European nations, show notable scientific production in specific sub-disciplines such as Pathology, Toxicology and Forensic Genetics, suggesting that fruitful international cooperation could be planned and be of interest to funding sources within the European Community, also taking into account funds reserved for depressed areas undergoing development.

Keywords: Analysis, Articles, Author, Bibliometric, Bibliometric Analysis, Biliometry, Bio-Medicolegal Sciences, Development, Ethics, Europe, Forensic Medicine, Forensic Medicine, France, Functional, Funding, Future, Genetics, Germany, Impact, Impact Factor, Interest, Italy, Journals, Law, Legal-Medicine, Medical, Medicine, Papers, Profile, Research, Sciences, Scientific Output, Scientific Production, Scientific Research, Spain, Turkey

? Boscolo-Berto, R., Viel, G., Cecchi, R., Terranova, C., Vogliardi, S., Bajanowski, T. and Ferrara, S.D. (2012), Journals publishing bio-medicolegal research in Europe. *International Journal of Legal Medicine*, **126** (1), 129-137.

Full Text: [2012\Int J Leg Med126, 129.pdf](2012/Int%20J%20Leg%20Med126,%20129.pdf)

Abstract: Fragmentation of bio-medicolegal knowledge has led to a proliferation of ultra-specialised sub-disciplines and branches, often published in ‘field-oriented’ scientific journals.The aim of this work is to provide an in-depth analytical picture of bio-medicolegal sources of publication, within and outside the traditional conception of legal medicine. An extensive search of bio-medicolegal articles published in the last five and a half years was performed on the MEDLINE database according to MeSH terms combined with free-text protocols. We performed a systematic analysis of targeted journals after merging, selecting and categorising all retrieved records, taking into account data from the 2009 JCR Science Edition (released on June 2010); 1,037 different journals were identified, of which only 48 (4.6%) focus specifically on bio-medicolegal matters, and of which only seven (14.6%) have an impact factor (IF). Despite this apparent dispersion, 47% of articles were published in bio-medicolegal journals (BML), of which 70.2% were in journals with IF (BML-IF). Articles published in BML-IF journals (33% of total papers) reach almost 50%, mainly in “Forensic Science International”, “International Journal of Legal Medicine” and “Journal of Forensic Sciences”. Instead, publications in not specifically bio-medicolegal journals (Not BML-IF) are greatly scattered and even fragmented in about 650 journals.The sub-disciplines that appear most frequently in Not BML-IF rather than BML-IF journals are Forensic Psychiatry (48.2% vs. 5.1%), Criminology (37.1% vs. 8.3%), Malpractice (50.7% vs. 4.0%), Medical Law and Ethics (46.4% vs. 6.9%) and Clinical Forensic Medicine (39.5% vs. 21.3%). The proposed bibliometric analysis revealed the preference of Forensic Pathology, Criminalistics (Biological), Forensic Genetics, Forensic Anthropology and Forensic Entomology for journals traditionally considered pertinent to the medico-legal discipline, with a considerable dispersion involving Toxicology, Psychiatry, Criminology and Malpractice, which were published in less well-known journals. This dispersion could be reduced adapting specialised forensic sections and increasing the IF of forensic journals, in order to respond suitably to the present demand for visibility by bio-medicolegal scientists, clearly oriented towards enhancing the objective impact of their curricula and attempting to attract funding to their research projects.

Keywords: Analysis, Articles, Bibliometric, Bibliometric Analysis, Bibliometry, Bio-Medicolegal Sciences, Dispersion, Ethics, Europe, Forensic Sciences, Fragmentation, Funding, Future, Genetics, Impact, Impact Factor, Impact Factor, JCR, Journal, Journals, Knowledge, Law, Legal Medicine, Medicine, Medline, Papers, Psychiatry, Publication, Publications, Publishing, Quality, Research, Research Assessment Exercise, Science, Systematic, Toxicology, Traditional, Visibility

# Title: International Journal of Lexicography

Full Journal Title: [International Journal of Lexicography](http://ijl.oxfordjournals.org/archive/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? de Schryver, G.M. (2009), Bibliometrics in lexicography. *International Journal of Lexicography*, **22** (4), 423-465.

Full Text: Int J Lex22, 423.pdf

Abstract: Bibliometric methods may be used to study the impact of a field, the impact of certain trends and researchers within that field, and of course the impact of particular research articles. This is no different for the field of lexicography, and the output of both metalexicographers and dictionary makers alike is increasingly being measured and quantified. Analysing such data enables one (a) to track the growing and waning popularity of certain lexicographic sub-fields, (b) to pinpoint the new directions heralded by specific lexicographic papers or by new types of dictionaries, and (c) to map the lexicographic schools of thought that have formed around some of the pioneering or most productive scholars. In this article, bibliometrics in lexicography are investigated by taking the International Journal of Lexicography as the centre piece. In the first half of the article, various bibliometric tools relevant to lexicography are introduced, and in the second half these tools are used to show that lexicography has truly become an independent discipline. In the process, comparisons are also made with two other lexicographic journals (Dictionaries and Lexikos), as well as with two journals from other disciplines (Linguistics and Applied Linguistics).

Keywords: Bibliometrics, Impact, International, Research

# Title: International Journal of Library and Information Science

Full Journal Title: [International Journal of Library and Information Science](http://www.academicjournals.org/IJLIS/Archive.htm)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Nattar, S. (2009), Indian journal of physics: A scientometric analysis. *International Journal of Library and Information Science*, **1** (4), 55-61.

Full Text: [2009\Int J Lib Inf Sci1, 55.pdf](2009/Int%20J%20Lib%20Inf%20Sci1,%2055.pdf)

Abstract: Scientometric analysis of 829 articles published in the Indian Journal of physics during the year 2004-2008 are taken up to observe the distribution of contributions, authorship pattern, geographical distribution of contributions and the number of pages used in each volume. Results indicate that highest numbers of papers have been written by co- authors. The contributions in this journal from India are slightly more than those from the other countries. The growth and popularity of this journal is found to show an upward trend.

Keywords: Scientometrics, Distribution of Contributions, Geographical Distribution, Indian Journal of Physics

# Title: International Journal of Life Cycle Assessment

Full Journal Title: International Journal of Life Cycle Assessment

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? de Souza, C.G. and Barbastefano, R.G. (2011), Knowledge diffusion and collaboration networks on life cycle assessment. *International Journal of Life Cycle Assessment*, **16** (6), 561-568.

Full Text: [2011\Int J Lif Cyc Ass16, 561.pdf](2011/Int%20J%20Lif%20Cyc%20Ass16,%20561.pdf)

Abstract: The interest in life cycle assessment (LCA) studies has increased over the years, and one of the main ways of disseminating these studies is through the publication of articles in scientific journals. Coauthorship relations form a social network where it is possible to identify how research is organized and structured in a specific field of knowledge. This paper aims to show the spread of these studies and the configuration of a collaboration network based on coauthorship relations between researchers of LCA considering some properties of social networks. The research was based on a bibliometric approach of 1,386 articles related to LCA and published in journals indexed in the ISI/Web of Science until 2008. A free software, Pajek, which has been largely used for the representation and analysis of social networks, was employed in this work. The properties of social networks analyzed in this study were power law, degrees of separation, giant component, and clustering. The research showed a social network formed by 2,598 authors from 60 countries, 88% of coauthored articles, a mean of 1.87 authors per article; the distribution of articles per author follows a power law (f (z) = 2,134.3 x z (-2.544)) with a high regression coefficient (R (2) = 0.9704), a degree of separation of 6.5, a giant component embracing 37% of the authors, and a clustering coefficient of 0.75. The LCA coauthorship network has properties following power law patterns similar to other nets such as WWW. The community forms a giant component which is still small, but which, nevertheless, might experience considerable growth in the near future. The average distance between authors follows the small-world hypothesis. The clustering degree was also coherent with other scientific communities. In spite of being an area with less than 20 years of publications registered in the ISI/Web of Science, LCA is now experiencing fast dissemination involving a large number of articles, authors, and institutions. The LCA’s coauthorship network can be characterized as a scientific community with properties verified in other networks of more consolidated academic collaboration.

Keywords: Assessment, Authors, Bibliometric, Bibliometrics, Co-Authorship, Coauthorship, Collaboration, Journals, Knowledge, Life Cycle Assessment, Productivity, Publication, Publications, Research, Small-World, Social Network Analysis, Web

# Title: International Journal of Management and Enterprise Development

Full Journal Title: [International Journal of Management and Enterprise Development](http://www.inderscience.com/browse/index.php?journalID=89&year=2007&vol=4&issue=4)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chao, C.C., Jen, W.Y., Chi, Y.P. and Lin, B.S. (2007), Determining technology trends and forecasts of CRM through a historical review and bibliometric analysis of data from 1991 to 2005. *International Journal of Management and Enterprise Development*, **4** (4), 415-427.

Abstract: Customer relationship management (CRM) has been identified as one of the greatest technological contributions to enterprises in the 21st century. This technology surged into the market rapidly. More and more enterprises are applying CRM to improve efficiency of operation and gain competitive advantage. In light of the awareness of the CRM trend’s contribution, a historical review and bibliometric methods are applied in this research. CRM is examined using the bibliometric analysis technique on SCI and SSCI journals from 1991 to 2005. Also, the historical review method was applied to analyse CRM innovation, organisations’ adoption, and diffusion. Moreover, from retrospective analysis findings, business, the health industry and privacy are the major trends and issues of adoption by enterprises. Furthermore, the contribution of CRM and forecast of the technology trend are also analysed. CRM will diffuse and be assimilated into our daily lives in the near future.

Keywords: Adoption, Analysis, Bibliometric, Bibliometric Analysis, Bibliometric Methods, Business, Data, Diffusion, Efficiency, Enterprises, Forecast, Health, Historical Review, Innovation, Journals, Management, Market, Methods, Operation, Privacy, Research, Retrospective Analysis, Review, SCI, SSCI, Technology, Trend, Trends

# Title: International Journal of Management Reviews

Full Journal Title: [International Journal of Management Reviews](http://www3.interscience.wiley.com/journal/118498732/home)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Verbeek, A., Debackere, K., Luwel, M. and Zimmermann, E. (2002), Measuring progress and evolution in science and technology. I: The multiple uses of bibliometric indicators. *International Journal of Management Reviews*, **4** (2), 179-211.

Full Text: [I\Int J Man Rev4, 179.pdf](I/Int%20J%20Man%20Rev4,%20179.pdf)

Abstract: Science and technology development have become critical instruments in the public policy arena given their demonstrated impact on economic progress. As a consequence, a vast array of indicators for measuring and mapping scientific and technological activity, their progress and their outcomes, has been developed over recent decades (see for instance, the EU Commission, 2nd Report on S&T Indicators 1997). The majority of them relate to measuring and mapping the published journal and patent literature. The first part of this review paper focuses on a state-of-the-art overview of bibliometric: indicators and their multiple uses in supporting the development of science and technology policy, The limitations and the pitfalls related to their use are also discussed.

Keywords: University-Research Performance, Citation Analysis, Basic Research, Co-Citation, Economics, Flanders, Policy, Field

# Title: International Journal of Mass Spectrometry

Full Journal Title: International Journal of Mass Spectrometry

ISO Abbreviated Title: Int. J. Mass Spectrom.

JCR Abbreviated Title: Int J Mass Spectrom

ISSN: 1387-3806

Issues/Year: 12

Journal Country/Territory: Netherlands

Language: Multi-Language

Publisher: Elsevier Science BV

Publisher Address: PO Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Physics, Atomic, Molecular & Chemical Spectroscopy: Impact Factor

# Title: International Journal of Mass Spectrometry and Ion Processes

Full Journal Title: [International Journal of Mass Spectrometry and Ion Processes](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5246&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=5aaf1dc705a1c0c20b4a66c1b011a05b)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0168-1176

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Elsevier Science BV, Amsterdam

Publisher Address:

Subject Categories:

: Impact Factor

Gelpi, E. (1992), Trends in biochemical and biomedical applications of mass spectrometry. *International Journal of Mass Spectrometry and Ion Processes*, **118** (2), 683-721.

Full Text: [I\Int J Mas Spe Ion Pro118-119, 683.pdf](I/Int%20J%20Mas%20Spe%20Ion%20Pro118-119,%20683.pdf)

Abstract: This review attempts an in-depth evaluation of progress and achievements made since the last 11th International Mass Spectrometry Conference in the application of mass spectrometric techniques to biochemistry and biomedicine. For this purpose, scientific contributions in this field at major international meetings have been monitored, together with an extensive appraisal of literature data covering the period from 1988 to 1991. A bibliometric evaluation of the MEDLINE database for this period provides a total of almost 4000 entries for mass spectrometry. This allows a detailed study of literature and geographical sources of the most frequent applications, of disciplines where mass spectrometry is most active and of types of sample and instrumentation most commonly used. In this regard major efforts according to number of publications (over 100 literature reports) are concentrated in countries like Canada, France, Germany, Italy, Japan, Sweden, UK and the USA. Also, most of the work using mass spectrometry in biochemistry and biomedicine is centred on studies on biotransformation, metabolism, pharmacology, pharmacokinetics and toxicology, which have been carried out on samples of blood, urine, plasma and tissue, by order of frequency of use. Human and animal studies appear to be evenly distributed in terms of the number of reports published in the literature in which the authors make use of experimental animals or describe work on human samples. Along these lines, special attention is given to the real usefulness of mass spectrometry (MS) technology in routine medical practice. Thus the review concentrates on evaluating the progress made in disease diagnosis and overall patient care. As regards prevailing techniques, GC-MS continues to be the mainstay of the state of the art methods for multicomponent analysis, stable isotope tracer studies and metabolic profiling, while HPLC––MS and tandem MS are becoming increasingly important in biomedical research. However, despite the relatively large number of mass spectrometry reports in the biomedical sciences very few true routine applications are described, and recent technological innovations in instrumentation such as FAB-MS, electrospray, plasma or laser desorption have contributed relatively much more to structural biology, especially in biopolymer studies of macromolecules rather than to real life biomedical applications on patients and clinical problems.

Keywords: Fast-Atom-Bombardment, Performance Liquid-Chromatography, Stable-Isotope-Dilution, Supercritical-Fluid Chromatography, Bile-Acid Metabolism, O-Linked Polylactosaminoglycans, Fetal Gastrointestinal Mucins, Quadrupole Ion Trap, Chain Fatty-Acids, Skim Milk Mucins

# Title: International Journal of Materials Research

Full Journal Title: International Journal of Materials Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Marx, W. (2009), The anatomy of the *International Journal of Materials Research* in the light of bibliometry. *International Journal of Materials Research*, **100** (1), 11-23.

Abstract: Bibliometric methods, in particular citation analysis, are used to evaluate the International Journal of Materials Research (IJMR) and its two predecessor journals Zeitschrift far Metallkunde (ZfM) and Internationale Zeitschrift fur Metallographie (IZfM). Firstly, the coverage of the journals by the various literature databases is discussed, and the number of articles per year is determined. The time evolution of the publications with respect to German and English as original languages is established and the language dependent impact is analyzed. A ranking of the most important countries of authors is given. Furthermore, the ensemble of ZfM and IJMR articles is analyzed with respect to the occurrence of substances (metals, alloys, compounds) and some subject specific terms (diffusion, microstructure, recrystallization, mechanical properties). A listing of the twenty most frequently cited articles and the citation time evolution (citation history) of the top three articles are presented. Moreover, the distribution of the citations on the articles is determined and the amount of simultaneous citations with other journals (co-citations) is given. The citing papers of the IJMR and ZfM articles are analyzed with respect to the most frequently appearing countries of authors and journals. Finally, the Journal Impact Factor (JIF), the Cited Half-Life and the Citing Half-Life as bibliometric indicators of a journal as a whole are analyzed. The meaning of the widely used JIF is discussed and hints for its careful and cautious use are given.

Keywords: Alloys, Analysis, Anatomy, Authors, Bibliometric, Bibliometric Indicators, Bibliometry, Citation, Citation Analysis, Citations, Coverage, Databases, Diffusion, Distribution, Evolution, FUR, History, History of Science, Impact, Impact Factor, Index, Indicators, Journal, Journal Impact Factor, Journals, Language, Languages, Literature, Meaning, Mechanical Properties, Metals, Methods, Microstructure, Papers, Publications, Ranking, Research, Respect, Science, Time

# Title: International Journal of Medical Informatics

Full Journal Title: [International Journal of Medical Informatics](http://www.sciencedirect.com/science/journal/13865056)

ISO Abbreviated Title:

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Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

: Impact Factor

? Pluye, P., Grad, R.M., Dunikowski, L.G. and Stephenson, R. (2005), Impact of clinical information-retrieval technology on physicians: A literature review of quantitative, qualitative and mixed methods studies. *International Journal of Medical Informatics*, **74** (9), 745-768.

Full Text: [2005\Int J Med Inf74, 745.pdf](2005/Int%20J%20Med%20Inf74,%20745.pdf)

Abstract: Purpose: This paper appraises empirical studies examining the impact of clinical information-retrieval technology on physicians and medical students. Methods: The world literature was reviewed up to February 2004. Two reviewers independently identified studies by scrutinising 3368 and 3249 references from bibliographic databases. Additional studies were retrieved by hand searches, and by searching ISI Web of Science for citations of articles. Six hundred and five paper-based articles were assessed for relevance. of those, 40 (6.6%) were independently appraised by two reviewers for relevance and methodological quality. These articles were quantitative, qualitative or of mixed methods, and 26 (4.3%) were retained for further analysis. For each retained article, two teams used content analysis to review extracted textual material (quantitative results and qualitative findings). Results: Observational studies suggest that nearly one-third of searches using information-retrieval technology may have a positive impact on physicians. Two experimental and three laboratory studies do not reach consensus in support of a greater impact of this technology compared with other sources of information, notably printed educational material. Clinical information-retrieval technology may affect physicians, and further research is needed to examine its impact in everyday practice. (c) 2005 Elsevier Ireland Ltd. All rights reserved.

Keywords: Analysis, Bibliographic, Bibliographic Databases, Citations, Computerised Practice Guidelines, Content Analysis, Databases, Decision-Support-Systems, Electronic Resources, General-Practitioners, Guidelines, Hospital Library, Impact, Information, Information Retrieval, Information Services, Information Systems, Information-Retrieval, Internet, ISI, Literature, Literature Review, Medical, Medical Informatics, Methods, Mixed Methods, Online Evidence, Patient-Care, Physicians, Practice, Primary-Care Physicians, Quantitative, Randomized Controlled-Trial, Research, Review, Science, Students, Web of Science

? O’Grady, L. (2006), Future directions for depicting credibility in health care web sites. *International Journal of Medical Informatics*, **75** (1), 58-65.

Full Text: [2006\Int J Med Inf75, 58.pdf](2006/Int%20J%20Med%20Inf75,%2058.pdf)

Abstract: Objectives: The purpose of the paper was to determine appropriate terminology, criteria, implementation, and develop a theoretical framework by which credibility in health care web sites can be depicted. Future research directions for evaluating credibility in health care web sites was also discussed. Method: A comprehensive literature review of published articles, policy papers, and grey literature using relevant search terms was conducted. Sources for articles reviewed included MEDLINE (from 1966 to present), PsycINFO (from 1840 to present), ERIC (from 1966 to present), and the Association for Computing Machinery (ACM) databases. The Web of Science citation service was continuously searched using a subscription service from 2002 to 2004. The search engine Google was also implemented. Results: A common term, credibility, was purposed for use in this context. A comprehensive set of credibility criteria, presented within a theoretical framework was also developed. Implementation by means of a browser-based graphic icon was purposed. Conclusions: Relevancy and readiness of the purposed common terminology, criteria, and implementation within the theoretical framework must be further researched. More knowledge of consumers’ behaviour regarding use of online health content and collaboration with others when implementing such information should be considered in future research. (c) 2005 Elsevier Ireland Ltd. All rights reserved.

Keywords: Citation, Collaboration, Consumer Participation, Databases, Electronic Communication, Health Care, Implementation, Information, Internet, Internet, Knowledge, Literature, Literature Review, Medical Information, Medline, Papers, Patient Education, Policy, Quality, Quality of Health Care, Research, Review, Science, Sources, Web of Science, World-Wide-Web

? Jen, W.Y., Chao, C.C., Hung, M.C., Li, Y.C. and Chi, Y.P. (2007), Mobile information and communication in the hospital outpatient service. *International Journal of Medical Informatics*, **76** (8), 565-574.

Full Text: [2007\Int J Med Inf76, 565.pdf](2007/Int%20J%20Med%20Inf76,%20565.pdf)

Abstract: Objectives Most healthcare providers provide mobile service for their medical staff; however, few healthcare providers provide mobile service as part of their outpatient service. The mobile outpatient service system (MOSS) focuses on illness treatment, illness prevention and patient relation management for outpatient service users. Initiated in a local hospital in Taiwan, the MOSS pilot project was developed to improve outpatient service quality and pursue higher patient safety. Method This study focuses on the development of the MOSS. The workflow, architecture and target users of the MOSS are delineated. In addition, there were two surveys conducted as part of this study. After a focus group of medical staff identified areas in which outpatient services might be improved by the MOSS, the first survey was administered to outpatients to confirm the focus group’s intuitions. The second administration of the survey explored outpatient satisfaction after they used the MOSS service. Results With regard to outpatient attitudes, about 93% of participants agreed that the mobile outpatient service improved outpatient service quality. In the area of outpatient satisfaction, about 89% of participants indicated they were satisfied with the moile outpatient service. Discussion/conclusion Supported by our study finding, we propose that more diverse mobile outpatient services can be provided in the future.

Keywords: Mobile Technology, Mobile Outpatient Service, Healthcare Providers

? Grundgeiger, T. and Sanderson, P. (2009), Interruptions in healthcare: Theoretical views. *International Journal of Medical Informatics*, **78** (5), 293-307.

Full Text: [2009\Int J Med Inf78, 293.pdf](2009/Int%20J%20Med%20Inf78,%20293.pdf)

Abstract: Background: Researchers in healthcare have begun to investigate interruptions extensively, given evidence for the adverse effects of work interruptions in other domains and given the highly interruptive hospital environment. In this paper, we reviewed literature on interruptions in critical care and medication dispensing settings in search of evidence for a relationship between interruptions and adverse events. Methods: The literature search included the databases MEDLINE, CINAHL+ Pre CINHAL, Health Sources: Nursing Academic Edition, EMBASE, PsycINFO, ISI Web of Science and Ergonomics Abstracts. The paper titles and abstracts were subsequently reviewed. After the initial search, we reviewed paper titles and abstracts to define the subset for review. Results: We currently lack evidence in healthcare of the extent to which interruptions lead to adverse effects. The lack of evidence may be due to the descriptive rather than causal nature of most studies, the lack of theory motivating investigations of the relationship, the fact that healthcare is a complex and varied domain, and inadequate conceptualizations of accident aetiology. We identify two recent accident theories in which the relationship between activity and medical errors is complex, indicating that even when it is sought, causal evidence is hard to find. Discussion: Future research on interruptions in healthcare settings should focus on the following. First, prospective memory research and distributed cognition can provide a theoretical background for understanding the impact of interruptions and so could provide guidance for future empirical research on interruptions and the planning of actions in healthcare. Second, studying how interruptions are successfully rather than unsuccessfully overcome may better help us understand their effects. Third, because interruptions almost always have positive and adverse effects, more appropriate dependent variables could be chosen. (C) 2008 Elsevier Ireland Ltd. All rights reserved.

Keywords: Accident Model, Adverse Effects, Clinical Communication, Cognition, Communication, Critical Care, Databases, Decision-Making, Dispensing Errors, Distractions, Distributed Cognition, Embase, Emergency-Department, Environment, Error Theory, Health, Healthcare, Hospital, Impact, Information-Technology, Intensive-Care, Interruptions, ISI, Lead, Literature, Medical, Medication, Medication Dispensing, Medication Errors, Medline, Memory, Methods, Nursing, Patient Safety, Patient-Safety, Prospective Memory, Prospective Memory Performance, Research, Researchers, Review, Science, Sources, Theories, Theory, Web of Science, Workplace Interruptions

? Jen, W.Y., Chao, C.C., Hung, M.C., Li, Y.C. and Chi, Y.P. (2007), Mobile information and communication in the hospital outpatient service. *International Journal of Medical Informatics*, **76** (8), 565-574.

Full Text: [2007\Int J Med Inf76, 565.pdf](2007/Int%20J%20Med%20Inf76,%20565.pdf)

Abstract: Objectives

Most healthcare providers provide mobile service for their medical staff; however, few healthcare providers provide mobile service as part of their outpatient service. The mobile outpatient service system (MOSS) focuses on illness treatment, illness prevention and patient relation management for outpatient service users. Initiated in a local hospital in Taiwan, the MOSS pilot project was developed to improve outpatient service quality and pursue higher patient safety.

Method

This study focuses on the development of the MOSS. The workflow, architecture and target users of the MOSS are delineated. In addition, there were two surveys conducted as part of this study. After a focus group of medical staff identified areas in which outpatient services might be improved by the MOSS, the first survey was administered to outpatients to confirm the focus group’s intuitions. The second administration of the survey explored outpatient satisfaction after they used the MOSS service.

Results

With regard to outpatient attitudes, about 93% of participants agreed that the mobile outpatient service improved outpatient service quality. In the area of outpatient satisfaction, about 89% of participants indicated they were satisfied with the mobile outpatient service.

Discussion/conclusion

Supported by our study finding, we propose that more diverse mobile outpatient services can be provided in the future.

Keywords: Mobile Technology, Mobile Outpatient Service, Healthcare Providers

? Ramadas, A., Quek, K.F., Chan, C.K.Y. and Oldenburg, B. (2011), Web-based interventions for the management of type 2 diabetes mellitus: A systematic review of recent evidence. *International Journal of Medical Informatics*, **80** (6), 389-405.

Full Text: [2011\Int J Med Inf80, 389.pdf](2011/Int%20J%20Med%20Inf80,%20389.pdf)

Abstract: Introduction: The Internet has emerged as a potentially effective medium for information exchange. The Internet’s potential has been recognised and web-based education programmes have been steadily adopted in recent years in preventing and managing chronic diseases such as diabetes mellitus. This review provides a descriptive discussion of web-based behavioural interventions for the management of type 2 diabetes mellitus. Method: Systematic literature searches were performed using MEDLINE, EMBASE, PUBMED, PsycINFO, Web of Science and Cochrane Library to retrieve articles published between 2000 and June 2010 which fulfilled all inclusion criteria. Methodological quality assessment and data synthesis were then performed. Results: Twenty articles representing 13 different studies were reviewed. None of the studies were ranked as low in the methodological quality. Goal-setting, personalised coaching, interactive feedback and online peer support groups were some of the successful approaches which were applied in e-interventions to manage type 2 diabetes mellitus. Strong theoretical background, use of other technologies and longer duration of intervention were proven to be successful strategies as well. Conclusion: The web-based interventions have demonstrated some level of favourable outcomes, provided they are further enhanced with proper e-research strategies. (C) 2011 Elsevier Ireland Ltd. All rights reserved.

Keywords: Adults Age 60, Assessment, Blood-Glucose, Care Management, Cochrane, Diabetes, Diabetes Mellitus, Diabetes Mellitus Type 2, Education, Embase, Feedback, Glucose Monitoring-System, Glycemic Control, Information, Internet, Intervention, Interventions, Literature, Management, Medline, Metaanalysis, Outcomes, Physical-Activity, Randomized-Controlled-Trials, Review, Science, Self-Management, Systematic, Systematic Review, Type 2, Type 2 Diabetes, Type 2 Diabetes Mellitus, Web of Science, Weight-Loss

? Lluch, M. (2011), Healthcare professionals’ organisational barriers to health information technologies-A literature review. *International Journal of Medical Informatics*, **80** (12), 849-862.

Full Text: [2011\Int J Med Inf80, 849.pdf](2011/Int%20J%20Med%20Inf80,%20849.pdf)

Abstract: Objectives: This literature review identifies and categorises, from an organisational management perspective, barriers to the use of HIT or ICT for health. Based on the review, it offers policy interventions. Methods: This systematic literature review was carried out during December 2009 and January 2010. Additional on-going reviews of updates through automated system alerts took place up until this paper was submitted. A total of thirty-one sources were searched including nine software platforms/databases, fifteen specialised websites/targeted databases, Google Scholar, ISI Science Citation Index and five journals hand-searched. Results: The study covers seventy-nine articles on organisational barriers to ICT adoption by healthcare professionals. These are categorised under five main headings - (I) Structure of healthcare organisations; (II) Tasks; (III) People policies; (IV) Incentives; and (V) Information and decision processes. A total of ten subcategories are also identified. By adopting an organisational management approach, some recommendations to remove organisational management barriers are made. Conclusions: Despite their apparent promise, health information technologies (HIT) have proved difficult to implement. This systematic review reveals the implementation barriers associated to organisational management and their interrelations. Several important future directions in the field are also suggested: (1) there is a need for further research providing evidence of HIT cost-effectiveness as well as the development of optimal HIT applications; (2) more information is needed regarding organisational change, incentives, liability issues, end-users HIT competences and skills, structure and work process issues involved in realising the benefits from HIT. Future policy interventions should consider the five dimensions identified when addressing the impact of HIT in healthcare organisational systems, and how the impact of an intervention aimed at a particular dimension would interrelate with others. (C) 2011 Elsevier Ireland Ltd. All rights reserved.

Keywords: 7 Countries, Adoption, Barriers, Barriers for Adoption, Citation, Computerised Medical Records Systems, Cost-Effectiveness, Databases, Decision-Support, Development, Electronic Medical Record, Google Scholar, Health Information Technology, Healthcare, Healthcare Organisations, Healthcare Professionals, Hit Adoption, Hospital Information Systems, ICT Adoption in Healthcare, Impact, Implementation, Incentives, Information, Information and Decision Processes, Intervention, Interventions, ISI, Journals, Literature, Literature Review, Management, Medical Informatics, Medical-Care, Methods, National-Health, Order Entry, Organisational Models, People Policies, Policies, Policy, Process, Recommendations, Records, Research, Review, Science, Science Citation Index, Socio-Technical, Software, Structure, Structure of Healthcare Organisations, Systematic, Systematic Literature Review, Systematic Review, Systems, Tasks, Unintended Consequences

# Title: International Journal of Medical Microbiology

Full Journal Title: [International Journal of Medical Microbiology](http://www.sciencedirect.com/science/journal/14384221)

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JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

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Subject Categories:

: Impact Factor

? Becker, K., Hu, Y. and Biller-Andorno, N. (2006), Infectious diseases - A global challenge. *International Journal of Medical Microbiology*, **296** (4-5), 179-185.

Full Text: [2006\Int J Med Mic296, 179.pdf](2006/Int%20J%20Med%20Mic296,%20179.pdf)

Abstract: Infectious diseases represent a continuous and increasing threat to human health and welfare. Due to emerging diseases, increasing resistances, international travelling, and the risk of bioterroristic attacks, infectious diseases concern the whole world and can only be combated by internationally coordinated and interdisciplinary approaches. When assessing the worldwide publication activities on infectious diseases in the years 1994-2004 accessible via the ISI Science Citation Index Expanded((R)), an overall increase by 24% can be monitored. Furthermore, it becomes evident that highest research priorities are given to HIV/AIDS, hepatitis C, tuberculosis, respiratory infections, and sepsis. Ten countries - including the USA, the UK, France, Germany, and Japan - contributed to more than 80% of these publications; nation-specific research priorities focusing on the current problems in the respective country can be estimated. Countries with the highest disease burdens are still not given the opportunity to contribute adequately to the scientific field. Based on our data, relatively increasing publication activities include those on respiratory infections, tuberculosis, malaria, hepatitis, and sepsis, whereas decreasing activities were determined for AIDS, diarrhoea, meningitis, schistosomiasis, and other diseases. Accordingly, the prevalence of many infectious diseases occurring in tropical countries is not clearly reflected in the worldwide publication activities. (c) 2006 Elsevier GmbH. All rights reserved.

Keywords: AID, AIDS, Assessing, Challenge, Country, Data, Diarrhoea, Diseases, Field, France, Germany, Health, Hepatitis, Hepatitis C, HIV, AIDS, Human, Human Health, Infections, Infectious Diseases, Interdisciplinary, International, ISI, Japan, Malaria, Meningitis, Prevalence, Publication, Publications, Research, Research Priorities, Rights, Risk, Science Citation Index, Sepsis, Tropical, Tuberculosis, UK, USA, Welfare, World

# Title: International Journal of Mineral Processing

Full Journal Title: [International Journal of Mineral Processing](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5931&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=e7dd344da560ebe7bd5ecaa28efbb13a)

ISO Abbreviated Title: Int. J. Miner. Process.

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Publisher: Elsevier Science BV

Publisher Address: PO Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Engineering, Chemical: Impact Factor 0.553, 51/110

Mineralogy Mining & Mineral Processing: Impact Factor

Haung, H.H. and Miller, J.D. (1978), Kinetics and thermochemistry of amyl xanthate adsorption by pyrite and marcasite. *International Journal of Mineral Processing*, **5** (3), 241-266.

Full Text: [I\Int J Min Pro5, 241.pdf](I/Int%20J%20Min%20Pro5,%20241.pdf)

Abstract: The kinetics and thermochemistry of the xanthate adsorption reaction on pyrite and marcasite were evaluated with respect to the existing theory. The rate of xanthate adsorption was studied in a stirred reactor and the xanthate concentration was determined by UV spectrophotometry as a function of time. The heat of the adsorption reaction was measured with a microcalorimeter. The results from both experiments indicate that xanthate adsorption by pyrite or marcasite involves the formation of dixanthogen by an electrochemical reaction at the solid surface which supports the conclusions of other investigators:



The rate of the adsorption reaction was found to be approximately one-half order with respect to the xanthate concentration and to have an activation energy of 7.5 kcal/mole. Additionally, the rate was found to have a slight dependence on pH under certain conditions. In view of these results, it appears that the adsorption reaction is controlled by electrochemical discharge at the pyrite surface. Analysis of the data in terms of an electrochemical kinetic model successfully explained the observed rate phenomena.

The measured heat of the adsorption reaction at low pH was found to be between −63 and −56 kcal/mole of adsorbed dixanthogen and independent of surface coverage. These experimental heats of adsorption agree with the value of −57 kcal/mole of dixanthogen calculated for the oxidation of xanthate by oxygen from thermodynamic data reported in the literature.

? Afenya, P.M. (1982), Adsorption of xanthate and starch on synthetic graphite. *International Journal of Mineral Processing*, **9** (4), 303-319

Full Text: [1982\Int J Min Pro9, 303.pdf](1982/Int%20J%20Min%20Pro9,%20303.pdf)

Abstract: In the processing of sulphide ores containing graphite, starch is occasionally employed for depressing graphite while xanthate is used as a sulphide collector. In such a system the adsorption of starch by graphite is also influenced by xanthate. In the present investigation the adsorption of xanthate and starch at various values of pH and adsorbate concentrations have been carried out. The results show that xanthate is hardly adsorbed in the xanthate-N2 system, but in the presence of oxygen it is catalytically oxidised to dixanthogen which adsorbs on graphite. Xanthate and starch are partly adsorbed at the same or adjoining sites of graphite with starch being adsorbed faster than xanthate. The ability of starch to depress graphite is reduced in the xanthate-starch system.

Keywords: Adsorption

? Qi, L. and Laskowski, J.S. (1989), The role of metal-hydroxides at mineral surfaces in dextrin adsorption. 1. Studies on modified quartz samples. *International Journal of Mineral Processing*, **26** (3-4), 297-316

Full Text: [1989\Int J Min Pro26, 297.pdf](1989/Int%20J%20Min%20Pro26,%20297.pdf)

Abstract: In order to investigate the interaction mechanisms between dextrin and mineral surfaces, the floatability, wettability and adsorption tests were conducted on quartz samples. The quartz samples were either made hydrophobic by methylation, or lead-coated, or subjected to both forms of surface modifications. In sharp contrast to the published results, it was observed that surface hydrophobicity does not contribute significantly to the adsorption of dextrin. The adsorption, however, depends critically on the presence of metal ionic species on solid surfaces and seems to result from the chemical interaction between dextrin and the surface metal hydroxide groups.

Popov, S.R. and Vučinić, D.R. (1992), The effect of prolonged agitation in lead ion solution on ethylxanthate adsorption and surface characteristics of cerussite. *International Journal of Mineral Processing*, **35** (1-2), 85-100.

Full Text: [I\Int J Min Pro35, 85.pdf](I/Int%20J%20Min%20Pro35,%2085.pdf)

Abstract: Surface characteristics of cerussite, after adsorption of ethylxanthate on cerussite previously treated with distilled water or lead-ion solution for a determined time, were studied using Hallimond tube flotation technique, electrokinetic measurements, and IR data.

A prolonged agitation improved the cerussite flotation within the pH range in which Pb2+ and Pb(OH)+ were the dominant species in the solution. The readsorption of lead and hydrolyzed lead ion species on the mineral surface led to a better KEX adsorption and a better floatability of cerussite.

Additional Pb2+ ions gave a better effect than the presence of only Pb2+ from the mineral lattice. There were optimum time intervals for the best cerussite flotation. The nonstoichiometric lead xanthate was necessary for the improvement of cerussite flotation.

? Grano, S.R., Cnossen, H., Skinner, W., Prestidge, C.A. and Ralston, J. (1997), Surface modifications in the chalcopyrite-sulphite ion system. 2. Dithiophosphate collector adsorption study. *International Journal of Mineral Processing*, **50** (1-2), 27-45.

Full Text: [1997\Int J Min Pro50, 27.pdf](1997/Int%20J%20Min%20Pro50,%2027.pdf)

Abstract: The effect of sulphite and ferric species on the collector-induced flotation of chalcopyrite has been studied, while the effect of these species on the rate of dicresyl dithiophosphate (DCDTP) adsorption has been monitored in situ using UV spectroscopy. Chalcopyrite, which had been previously conditioned with Fe(III) species, exhibited decreased affinity for DCDTP adsorption. Under these conditions, the flotation rate and recovery of chalcopyrite was reduced. The extent of flotation depression by iron oxyhydroxide depended on pH, conditioning gas, and the presence of adsorbed collector on chalcopyrite. Prior interaction of the chalcopyrite surface with sulphite significantly increased both the adsorption rate as well as the surface coverage of DCDTP on chalcopyrite. Sulphite removes adsorbed iron oxyhydroxide, present due to its specific introduction or oxidation of chalcopyrite, from the chalcopyrite surface and promotes the formation of an iron-deficient chalcopyrite. The rate of DCDTP adsorption onto chalcopyrite was increased due to both removal of iron oxyhydroxide previously existing on the chalcopyrite surface and the formation of an iron-deficient chalcopyrite. Under these conditions, the flotation rate and recovery of chalcopyrite was increased. Reasons why the surface modified chalcopyrite exhibited enhanced DCDTP adsorption are discussed.

Keywords: Adsorption, Adsorption Rate, Chalcocite, Chalcopyrite, Collector Adsorption, Conditioning, Depression, Dithiophosphate, Ethyl Xanthate, Flotation, In Situ, Interaction, Ion, Iron, Modified, Oxidation, pH, Pyrite, Recovery, Spectroscopy, Sulfide, Sulphide Flotation, Sulphite, Surface, UV

? Grano, S.R., Prestidge, C.A. and Ralston, J. (1997), Sulphite modification of galena surfaces and its effect on flotation and xanthate adsorption. *International Journal of Mineral Processing*, **52** (1), 1-29.

Full Text: [1997\Int J Min Pro52, 1.pdf](1997/Int%20J%20Min%20Pro52,%201.pdf)

Abstract: The effect of sulphite interaction with galena on the mechanism of ethyl xanthate adsorption onto galena surfaces has been studied in situ using UV spectroscopy. The influence of sulphite on galena flotation has been studied. X-ray photoelectron spectroscopic (XPS) and dissolution studies have been used to identify the mechanism of interaction between sulphite and galena surfaces. Metastable ethyl monothiocarbonate is a significant derivative of ethyl xanthate adsorption on galena in the absence of sulphite. The concentration of surface sites which produce monothiocarbonate increases with the initial state of galena oxidation, which, is in turn, apparently dependent upon galena preconditioning time, temperature and oxygen concentration. Significantly different ethyl xanthate adsorption characteristics were found, after sulphite conditioning of the galena surface. In this case, ethyl xanthate adsorption rate was significantly reduced, as was the formation of monothiocarbonate. Surface complexation of lead hydroxide by adsorbed sulphite decreases the rate of ethyl xanthate adsorption onto sites which, potentially, can produce monothiocarbonate. Galena dissolution studies and XPS examination of the galena surfaces together, confirmed the formation of insoluble lead sulphite precipitates at the galena surface. The effectiveness of sulphite depression of galena flotation is enhanced by adsorbed lead hydrolysis products on galena. (C) 1997 Elsevier Science B.V.

Keywords: Adsorption, Adsorption Rate, Amylxanthate, Complexation, Concentration, Conditioning, Depressants, Depression, Dissolution, Effectiveness, Ethyl Xanthate, Flotation, Hydrolysis, In Situ, Interaction, Kinetics, Lead, Mechanism, Modification, Oxidation, Oxygen, Oxygen Concentration, Products, Sites, Spectroscopy, Sulfide, Sulphide Minerals, Surface, Surfaces, Temperature, UV, Xanthate, XPS

Sekhar, K.C., Subramanian, S., Modak, J.M. and Natarajan, K.A. (1998), Removal of metal ions using an industrial biomass with reference to environmental control. *International Journal of Mineral Processing*, **53** (1-2), 107-120.

Full Text: [I\Int J Min Pro53, 107.pdf](I/Int%20J%20Min%20Pro53,%20107.pdf)

Abstract: The utility of a waste, dead fungal biomass in the removal of various metal ions such as calcium, iron, nickel and chromium when present individually and in possible combinations has been demonstrated. Although the tests were carried out using synthetic solutions of varying pH and metal ion concentrations, the results are representative of typical waste effluents emanating from leather, paper, paint and mineral processing industries as well as electroplating circuits. The maximum metal uptake was found to be dependent on solution pH (4-5 for Fe, 4-7 for Ca, 6-7 for Ni and 6 for Cr) and increased with biomass loading up to 10 g/l. The adsorption densities for various metal ions could be arranged as Ca > Cr(III) > Ni > Fe > Cr(VI). The presence of co-ions in binary, ternary and quarternary combinations decreased the metal uptake; the Ni uptake being most significantly affected while that of Cr(VI) the least. Possible mechanisms of metal ions removal are outlined along with a flow sheet for potential industrial application. (C) 1998 Elsevier Science B.V.

Keywords: *Saccharomyces-Cerevisiae*, *Bacillus-Subtilis*, *Rhizopus-arrhizus*, Fungal Biomass, Cell-Wall, Biosorption, Accumulation, Adsorption, Copper, Zinc, Waste Fungal Biomass, Calcium, Iron, Nickel, Chromium, Biosorption

Schneider, I.A.H., Rubio, J. and Smith, R.W. (2001), Biosorption of metals onto plant biomass: Exchange adsorption or surface precipitation? *International Journal of Mineral Processing*, **62** (1-4), 111-120.

Full Text: [I\Int J Min Pro62, 111.pdf](I/Int%20J%20Min%20Pro62,%20111.pdf)

Abstract: Heavy metal ions readily adsorb onto the nonliving biomass of many aquaphytes. Further, in many cases the metal ions can be readily desorbed from the biomass by use of a suitable eluting agent. It has been shown in certain cases, at least, that the biomass can be subjected to a number of loading and elution cycles without the biomass losing its adsorption capacity. It has been widely reported that the adsorption is through a specific ion exchange mechanism and a number of researchers have shown experimental evidence supporting such a mechanism. However, there is also evidence that the adsorption is through simple surface precipitation of metal hydroxide species. The present study examines some of the existing data on adsorption of metal ions onto aquaphyte biomass and attempts to evaluate which mechanism is the more likely.

Keywords: Aquaphyte, Adsorption, Precipitation, Heavy Metals

Chandra Sekhar, K., Kamala, C.T., Chary, N.S. and Anjaneyulu, Y. (2003), Removal of heavy metals using a plant biomass with reference to environmental control. *International Journal of Mineral Processing*, **68** (1-4), 37-45.

Full Text: [I\Int J Min Pro68, 37.pdf](I/Int%20J%20Min%20Pro68,%2037.pdf)

Abstract: Heavy metal pollution has become one of the most serious problems today, and the use of microbial and plant biomass for the detoxification of industrial effluents for environmental protection and recovery of valuable metals offers a potential alternative to existing treatment technologies.

In the present study, the biosorption capacity of a plant biomass was studied for different toxic metals and the removal was found to be higher for Pb, Zn and Cr among the 11 metals studied (As, Se, Zn, Fe, Ni, Co, Pb, Mn, Hg, Cr and Cu). The results of the biosorption studies revealed higher Pb removal followed by Cr and Zn at lower metal concentrations, less than 250 ppm and with biomass concentrations above 2 g. The results of shake flask experiment revealed enhanced metal removal with 15 min agitation for Pb and 180 min for Zn and Cr removal. Metal removal was higher at lower pH for Cr and Zn and increased pH decreased the percentage metal removal. Lead removal was unaffected by pH changes. The presence of co-ions (As, Se, Hg, etc.) did not affect Pb removal by biomass, but on the other hand, Zn and Cr uptakes decreased. For the reuse of biomass, the used biomass was subjected to desorption studies using HNO3. The retention capacity of the biomass was almost constant after three cycles of chelation–desorption, suggesting that the lifetime cycle was sufficiently long for continuous industrial application. The suggested process can be used as an alternative to the classical technologies for effluent decontamination and would also be efficient for polishing effluents treated by other methods. The biosorption model developed was applied to a “real life system” successfully.

Keywords: Plant Biomass, Biosorption, Co-Ion Effect, Desorption

? Matis, K.A., Zouboulis, A.I., Lazaridis, N.K. and Hancock, I.C. (2003), Sorptive flotation for metal ions recovery. *International Journal of Mineral Processing*, **70** (1-4), 99-108.

Full Text: [I\Int J Min Pro70, 99.pdf](I/Int%20J%20Min%20Pro70,%2099.pdf)

Abstract: In this study, the abstraction of nickel, copper and zinc ions from aqueous solutions has been investigated in a laboratory batch scale mode. A combined two-stage process is proposed as an alternative of the heavy metals removal from aqueous solutions. The first stage is the sorption of heavy metals onto non-living microorganisms followed by dispersed-air flotation of the loaded biomass. Three types of strains were used: Penicillium chrysogenum, Saccharomyces carlsbergensis and Streptomyces rimosus. The main parameters studied were solution pH, biomass concentration, surfactant concentration and flocculant concentration. The biomass reuse after elution was also examined. Remediation is a possible application of flotation being cost-effective and with readily available equipment and know-how. The application of this process looks promising. (C) 2003 Elsevier Science B.V. All rights reserved.

Keywords: Biomass, Biomass, Biosorption, Biosorption, Cadmium, Dilute-Solutions, Dispersed-Air Flotation, Metal Cations, Pyrite Fines, Removal, Streptomyces Rimosus, Waste-Water

Mustafa, S., Hamid, A. and Naeem, A. (2004), Xanthate adsorption studies on chalcopyrite ore. *International Journal of Mineral Processing*, **74** (1-4), 317-325.

Full Text: [I\Int J Min Pro74, 317.pdf](I/Int%20J%20Min%20Pro74,%20317.pdf)

Abstract: Kinetics of xanthate ion (X−) sorption on chalcopyrite is studied as a function of concentration (5×10−5), (2×10−4), (6×10−4) and (1×10−3 M) and temperature (278–293 K). In almost all the cases, equilibrium is established after a 10-min time interval. Lagrergren’s first-order rate equation is applied for rate constant determination. From the temperature dependence of the rate constant, energy of activation is calculated. X− ion sorption on chalcopyrite is also studied as a function of pH (8–11) at 293 K in the concentration range (5×10−5–1×10−3 M). Sorption of X− is found to increase with pH up to pH 10 and then decreases to pH 11. The data is found to be fitted to the Freundlich equation successfully. The dissolution studies and Fourier transform infrared spectroscopy (FTIR) spectra show that the process responsible for the uptake of xanthate by the chalcopyrite is the formation of cuprous xanthate on the surface of the solid.

Keywords: Chalcopyrite, Potassium Ethyl Xanthate, Adsorption, Cuprous Xanthate, Kinetics, Sulfide Minerals, Flotation, Oxidation

? Englert, A.H. and Rubio, J. (2005), Characterization and environmental application of a Chilean natural zeolite. *International Journal of Mineral Processing*, **75** (1-2), 21-29.

Full Text: [I\Int J Min Pro75, 21.pdf](I/Int%20J%20Min%20Pro75,%2021.pdf)

Abstract: The use of natural zeolites for environmental applications is gaining new research interests mainly due to their properties and significant worldwide occurrence. The present work describes the characterization of a natural Chilean zeolite and the results as adsorbent for ammonia from aqueous solutions. The zeolitic-rich tuff sample, mainly composed of clinoptilolite and mordenite, consisted of 13 mum mean volumetric particle diameter, 55 m2 g-1 (methylene blue adsorption) and 177 m2 g-1 (nitrogen adsorption) of specific surface area. Particles were negatively charged over a broad pH range (with or without ammonia) and 1.02 meq NH4+ g-1 cation-exchange capacity. The ammonia removal appears to proceed through ion-exchange and rapid kinetics (rate constant of 0.3 min-1) at neutral pH value, with removal capacities up to 0.68 meq NH4+ g-1. The Langmuir isotherm model provided excellent equilibrium data fitting (R2 = 0.97). Results indicate a significant potential for the Chilean natural zeolite as an adsorbent, ion-exchange material for wastewater treatment and water reuse applications. (C) 2004 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Ammonia, Ammonium Removal, Applications, Aqueous-Solutions, Capacity, Cation Exchange Capacity, Characterization, Clinoptilolite, Effluent Treatment, Environmental, Equilibrium, Industrial Minerals, Ion Exchange, Ion-Exchange, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Metals, Methylene Blue, Model, Mordenite, Natural, Natural Zeolite, Nitrogen, Packed-Bed, Particle, pH, Properties, Range, Rate Constant, Removal, Research, Reuse, Sedimentary, Specific Surface Area, Surface, Surface Area, Treatment, Waste-Water, Wastewater, Wastewater Treatment, Water, Water Reuse, Zeolite, Zeolites

? Kumari, P., Sharma, P., Srivastava, S. and Srivastava, M.M. (2006), Biosorption studies on shelled *Moringa oleifera* Lamarck seed powder: Removal and recovery of arsenic from aqueous system. *International Journal of Mineral Processing*, **78** (3), 131-139.

Full Text: [2006\Int J Min Pro78, 131.pdf](2006/Int%20J%20Min%20Pro78,%20131.pdf)

Abstract: The present study explores the unexploited sorption property of the shelled Moringa oleifera seeds (SMOS) for decontamination of arsenic from water bodies. Sorption studies (batch experiments) result into the standardization of optimum conditions for removal of 60.21% As(III) and 85.60% As(V) as follows: biomass dosage (2.0 g), metal concentration (25 mg/L), contact time (60 min) and volume of the test solution (200 ml) at pH 7.5 and 2.5, respectively. The adsorption data are fitted with Langmuir isotherm. Surface area has been measured using BET surface area analyzer. Morphological changes observed in scanning electron micrograph of native and treated SMOS indicates the existence of biosorption process. Fourier transform infrared spectrometry of exhausted seed biomass highlights protein/amino acid–arsenic interactions responsible for sorption phenomenon. Regeneration has also been attempted for several cycles with a view to restore the sorbent to its original state. The sorption capacity of the regenerated biomass remained almost constant after three cycles of sorption process, suggesting that the lifetime cycle was sufficient for continuous application. The findings open up new avenues in the decontamination of arsenic using SMOS from arsenic contaminated water, as domestic and environment-friendly safe technology.

Keywords: Arsenic, Biosorption, Desorption, Moringa Oleifera, Protein/Amino Acid–Arsenic Interaction, Sorption Isotherm

? Deveci, H., Yazıcı, E.Y., Alp, I. and Uslu, T. (2006), Removal of cyanide from aqueous solutions by plain and metal-impregnated granular activated carbons. *International Journal of Mineral Processing*, **79** (3), 198-208.

Full Text: [2006\Int J Min Pro79, 198.pdf](2006/Int%20J%20Min%20Pro79,%20198.pdf)

Abstract: In this study, the removal of free cyanide from aqueous solutions by activated carbon was investigated. Effects of metal impregnation (Cu and Ag), aeration, and concentrations of adsorbent and cyanide on the rate and extent of the removal of cyanide were studied. The results have shown that the capacity of activated carbon for the removal of cyanide can be significantly improved (up to 6.3-fold) via impregnation of activated carbon with metals such as copper and silver. Silver-impregnated activated carbon was found to be the most effective at the reduction of cyanide level in solution. This appeared to be coupled with its comparatively high metal content after impregnation process where silver (5.07%) could be more readily loaded on activated carbon than copper (0.43%). Kinetics and equilibrium data for cyanide removal by plain and metal-impregnated activated carbons were determined to be consistent with the pseudo second-order kinetics and the Langmuir adsorption isotherms, respectively. Aeration (0.27 l/min) was found to exert a profound effect on the process leading to a 5.5–49.1% enhancement in the performances of plain and metal-impregnated activated carbons. This enhancement could be attributed to the increase in the availability of active sites on activated carbon for adsorption and the catalytic oxidising activity of activated carbon in the presence of oxygen. Practical limiting capacity of plain, copper- and silver-impregnated activated carbons for the removal of cyanide were experimentally determined to be 19.7, 22.4 and 29.6 mg/g, respectively.

Keywords: Activated Carbon, Cyanide, Effluent Treatment, Adsorption, Environment

? Bayramoğlu, G., Tuzun, I., Celik, G., Yilmaz, M. and Arıca, M.Y. (2006), Biosorption of mercury(II), cadmium(II) and lead(II) ions from aqueous system by microalgae Chlamydomonas reinhardtii immobilized in alginate beads. *International Journal of Mineral Processing*, **81** (1), 35-43.

Full Text: [2006\Int J Min Pro81, 35.pdf](2006/Int%20J%20Min%20Pro81,%2035.pdf)

Abstract: The potential use of the immobilized microalgae (in Ca-alginate) of Chlamydomonas reinhardtii to remove Hg(II), Cd(II) and Pb(II) ions from aqueous solutions was evaluated using bare Ca-alginate bead as a control system. Ca-alginate beads containing immobilized microalgae were incubated for the uniform growth at 22 degrees C for 5 days. Effects of pH, temperature, initial concentration of metal ions and biosorbent dosages on the adsorption of Hg(II), Cd(II) and Pb(II) ions were studied. Adsorption of Hg(II), Cd(II) and Pb(II) ions on the immobilized microalgae showed highest values at around pH 5.0 to 6.0. The adsorption equilibrium was represented with Langnmir and Freundlich adsorption isotherms. The adsorption of these ions on the immobilized microalgae followed second-order kinetics and equilibrium was established in about 60 min. The temperature change in the range of 5-40 degrees C did not affect the adsorption capacities of the immobilized microalgae. The immobilized-algal systems can be regenerated using 2 M NaCl for Hg(II), Cd(II) and Pb(II) ions. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption, Adsorption Isotherms, Adsorption Kinetic, Algae, Alginate, Binding, Biomass, Biosorption, Copper, Equilibrium, Heavy Metal, Heavy-Metals, Kinetics, Microalgae, pH, Removal

? Coleman, N.J., Trice, C.J. and Nicholson, J.W. (2009), 11 Å tobermorite from cement bypass dust and waste container glass: A feasibility study. *International Journal of Mineral Processing*, **93** (1), 73-78.

Full Text: [2009\Int J Min Pro93, 73.pdf](2009/Int%20J%20Min%20Pro93,%2073.pdf)

Abstract: A novel one-step hydrothermal synthesis of 11 Å tobermorite, a cation exchanger, from a unique combination of waste materials is reported. 11 Å tobermorite was prepared from stoicheiometric quantities of cement bypass dust and waste container glass at 100ºC in water. The product also comprised 10 wt.% calcite and trace quartz as residual parent phases from the cement bypass dust. In a batch sorption study at 20ºC the uptakes of Cd2+ and Pb2+ by the waste-derived tobermorite product were found to be 171 mg g-1 and 467 mg g-1, respectively, and in both cases the removal process could be described using a simple pseudo-second-order rate model (k(2)=2.30×10-5 g mg-1 min-1 and 5.09×10-5 g mg-1 min-1, respectively). The sorption characteristics of the 11 angstrom tobermorite are compared with those of other waste-derived sorbents and potential applications are discussed. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Aqueous-Solutions, Batch, Calcite, Cation, Cation Exchanger, Cd2+, Cement, Characteristics, Chitosan, Dust, Exchange, Feasibility, Fly-Ash, Glass, Groundwater, Heavy Metal Removal, Hydrothermal Synthesis, Metal-Ions, Mineral Recycling, Model, Pb2+, Potential, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Pseudo-Second-Order Rate, Quartz, Remediation, Removal, Rights, Sorbents, Sorption, Sorption, Synthesis, Tobermorite, Waste, Waste Materials, Water

? Rao, K.S., Chaudhury, G.R. and Mishra, B.K. (2010), Kinetics and equilibrium studies for the removal of cadmium ions from aqueous solutions using Duolite ES 467 resin. *International Journal of Mineral Processing*, **97** (1-4), 68-73.

Full Text: [2010\Int J Min Pro97, 68.pdf](2010/Int%20J%20Min%20Pro97,%2068.pdf)

Abstract: Kinetic and equilibrium studies were conducted with cation exchange resin (Duolite ES 467) to investigate the effectiveness of removal of cadmium ions from aqueous solutions in a batch mode. The effect of various parameters was studied, such as contact time, agitation speed, sorbent mass, sorbate concentration, pH, competitive ion and temperature. The kinetic data were analyzed by finding their fitness to the well-known Lagergren and pseudo-second-order models using linear and non-linear curve fitting methods. Equilibrium isotherms generated were tested by applying Langmuir and Freundlich isotherm models using both linear and non-linear methods. The optimum contact time and agitation speed were found to be 60 min and 600 rpm, respectively. The presence of sodium chloride ions in solution drastically reduced the cadmium uptake. On the other hand, higher pH and temperature enhanced sorption. The non-linear curve fitting analysis method was found to fit the data better than the linear method. Similarly the Langmuir isotherm model has an edge over the Freundlich model. The calculated thermodynamic parameters such as Delta G(0), Delta H-0 and Delta S-0 indicate the effectiveness of Duolite ES 467 resin to remove cadmium from solution. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Agricultural Waste, Analysis, Aqueous Solutions, Batch, Batch Mode, Bone Char, Cadmium, Cation Exchange, Contact Time, Data, Equilibrium, Equilibrium Isotherms, Exchange, Fitness, Freundlich, Freundlich Isotherm, Freundlich Model, Isotherm, Isotherm Models, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir and Freundlich Isotherm, Langmuir Isotherm, Metal-Ions, Model, Models, pH, Pseudo Second Order, Pseudo-Second-Order, Removal, Resin, Sodium Chloride, Sorbent, Sorption, Sorption, Synthetic Resin, Temperature, Thermodynamic, Thermodynamic Parameters, Tree Fern, Uptake, Waste-Water, Wheat Bran

? Zaghouane-Boudiaf, H. and Boutahala, M. (2011), Kinetic analysis of 2,4,5-trichlorophenol adsorption onto acid-activated montmorillonite from aqueous solution. *International Journal of Mineral Processing*, **100** (3-4), 72-78.

Full Text: [2011\Int J Min Pro100, 72.pdf](2011/Int%20J%20Min%20Pro100,%2072.pdf)

Abstract: This study has investigated the potential use of acid-activated montmorillonite (AMt) as adsorbent for the removal of 2,4,5-trichlorophenol (2,4,5-TCP) from aqueous solution. The kinetics of adsorption were studied in a batch system. Important parameters which affect the adsorption, such as pH of solution, the mass of acid-activated montmorillonite, temperature and initial TCP concentration have been investigated. The increase in adsorbent mass, pH and temperature resulted in a lower TCP loading per unit weight of the acid-activated montmorillonite, but an increase of adsorption was observed when initial concentration of 2,4,5-TCP increases. The effect of different adsorption parameters was fitted to the pseudo-first-order, pseudo-second-order and the intraparticle kinetic models. The linear regression method was used to obtain the relative parameters. According to the error analysis, it was found that the pseudo-second-order kinetic model was better to predict the experimental results. The value of activation energy was calculated as 47.7 kJ/mol. The result obtained indicates that the adsorption is assigned to a physisorption. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: 2,4,5-Trichlorophenol, 2,4.5-Trichlorophenol, Acid-Activated Montmorillonite, Adsorbent, Adsorption, Aqueous Solution, Bentonite, Carbon, Chlorophenols, Clay, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Model, Montmorillonite, pH, Phenol, Physisorption, Pseudo Second Order, Removal, Temperature, Water, XAD-4 Resin

? Donia, A.M., Atia, A.A., Daher, A.M., Desouky, O.A. and Elshehy, E.A. (2011), Selective separation of U(VI) from its solutions using amine modified silica gel produced from leached zircon. *International Journal of Mineral Processing*, **101** (1-4), 81-88.

Full Text: [2011\Int J Min Pro101, 81.pdf](2011/Int%20J%20Min%20Pro101,%2081.pdf)

Abstract: A solution of sodium silicate produced from the alkali fusion of Egyptian zircon mineral as a waste was used to prepare silica gel in the pH range 6-7. The surface of the obtained silica was functionalized with diethylenetriamine (DET) and tetraethylenepentamine (TEP) to give triamine modified silica (TAMS) and pentamine modified silica (PAMS), respectively. The success of functionalization process was confirmed by means of FT-IR, energy dispersive X-ray analysis (EDX) and elemental analysis. The surface properties of the modified silica obtained were also investigated. The uptake behavior of the modified silica towards U(VI) ions at different experimental conditions of pH. time, concentration and temperature was studied. The maximum uptake values at 25°C were found to be 90.3 and 112 mg/g for TAMS and PAMS, respectively, Kinetics and thermodynamics studies showed an endothermic pseudo-second order adsorption process. Regeneration of the loaded silica was performed using 1 M HNO3. The investigated silicas have successfully been applied for extracting of U(VI) obtained from alkaline leaching of Egyptian monazite sand. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption, Aqueous-Solutions, Complexes, Exchange, Extraction, FTIR, Kinetics, Leaching, Metal-Ions, Modified Silica, pH, Preconcentration, Regeneration, Silica, Thermodynamics, Thorium(IV), U(VI), Uranium, Uranium VI, Uranyl, Zircon

# Title: International Journal of Modern Physics B

Full Journal Title: [International Journal of Modern Physics B](http://www.worldscinet.com/cgi-bin/details.cgi?id=pii:S0217979207037533&type=html)

ISO Abbreviated Title:

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Publisher Address:

Subject Categories:

: Impact Factor

? Jamnik, A. and Luo, F. (2007), Modeling of adsorption in pores by means of third order plus second order perturbation density functional theory and Monte Carlo simulation. *International Journal of Modern Physics B*, **21** (20), 3601-3619.

Full Text: [2007\Int J Mod Phy B21, 3601.pdf](2007/Int%20J%20Mod%20Phy%20B21,%203601.pdf)

Abstract: Results for the inhomogeneous structure of the hard-core repulsive Yukawa (HCRY) fluid and of the hard-core attractive Yukawa (HCAY) fluid in planar and in spherical micropores are presented. The density profiles are obtained by the recently proposed third order + second order perturbation density functional approximation (DFA) and compared with the results of open ensemble Monte Carlo simulation. As known from other recent studies, the reliability of the DFA theory considered in this work is very sensitive to the accuracy of the required bulk direct correlation function (DCF) obtained by the solution of the Ornstein-Zernike (OZ) equation combined by a suitable closure relation. Comparison between the DFA results and simulation data shows that for the HCRY fluid, the DFA theory utilizing the DCF obtained by the OZ equation supplemented by Malijevsky-Labik approximation satisfies the required accuracy for a broad range of conditions. The results for the nonuniform HCAY fluid obtained in our previous work via the mean spherical approximation (MSA)/OZ DCF showed larger disagreement in some cases. In addition, the MSA/OZ equation for the HCAY model failed to have a physical solution at subcritical temperatures when approaching the vapor-liquid coexistence curve. For this reason, an improved version of the theory incorporating nonlinear optimized random phase approximation (ORPA) in the OZ equation for the RDF calculation of the HCAY fluid is applied. This leads to much better agreement of the DFA predictions with the simulation data. In addition, the calculations can also be performed at the conditions at which the MSA/OZ equation has no physical solution.

Keywords: Adsorption, Bridge Function, Free-Energy Model, Hard-Sphere Fluid, Inhomogeneous Systems, Lagrangian Theorem, Lennard-Jones Fluid, Molecular Theory, Monte Carlo Simulation, Nonuniform Fluid, Perturbation Density Functional Theory, Radial-Distribution Function, Solid-Liquid Interface, Theory, Uniform Fluids

# Title: International Journal of Modern Physics C

Full Journal Title: International Journal of Modern Physics C

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: Impact Factor

? Ausloos, M., Lambiotte, R., Scharnhorst, A. and Hellsten, I. (2008), Andrzej Pekalski networks of scientific intersets with internal degrees of freedom through self-citation analysis. *International Journal of Modern Physics C*, **19** (3), 371-384.

Full Text: [2008\Int J Mod Phy C19, 371.pdf](2008/Int%20J%20Mod%20Phy%20C19,%20371.pdf)

Abstract: Old and recent theoretical works by Andrzej Pekalski (APE) are recalled as possible sources of interest for describing network formation and clustering in complex (scientific) communities, through self-organization and percolation processes. Emphasis is placed on APE self-citation network over four decades. The method is that used for detecting scientists’ field mobility by focusing on author’s self-citation, co-authorships and article topics networks as in Refs. 1 and 2. It is shown that APE’s self-citation patterns reveal important information on APE interest for research topics over time as well as APE engagement on different scientific topics and in different networks of collaboration. Its interesting complexity results from “degrees of freedom” and external fields leading to so called internal shock resistance. It is found that APE network of scientific interests belongs to independent clusters and occurs through rare or drastic events as in irreversible “preferential attachment processes”, similar to those found in usual mechanics and thermodynamics phase transitions.

Keywords: Analysis, Citations, Complex, Dynamics, Evolution, Evolving Population, Magnetic Lattice-Gas, Mobility, Model, Monte-Carlo, Network, Optimal Percolation Method, Oxygen Diffusion, Publications, Research, Scientometry, Self-Citation, Sex Male, Temperature, Thermodynamics

# Title: International Journal of Morphology

Full Journal Title: [International Journal of Morphology](http://www.scielo.cl/scielo.php?script=sci_issues&pid=0717-9502&lng=es&nrm=iso)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Galdames, I.S. and Manterola, C. (2010), What is published in human morphology? Types of designs and levels of evidence. *International Journal of Morphology*, **28** (2), 461-470.

Full Text: [2010\Int J Mor28, 461.pdf](2010/Int%20J%20Mor28,%20461.pdf)

Abstract: Evidence-based medicine (EBM) employs the best available evidence in a particular time and context to solve specific clinical problems. This method of practicing medicine has been adopted by most of the disciplines involved in medical training; however, morphology appears to remain beyond this paradigm. The first step in evidence-based practice based on morphology is to recognize the types of studies being conducted with regard to morphology, followed by the assessment of the level of evidence that they provide, which is the purpose of this study. We designed a bibliometric study, in which journals in the Master Journal List of Thomson Reuters, selected using the keywords “Morphology” or “Anatomy,” available between 2007 and 2008, with access to full text in electronic version, whose languages were English and Spanish, and which only considered studies on human morphology, were included. We analyzed a total of 790 articles, of which 93.1% were descriptive, 6.5% were analytical, and 0.4% were experimental design types. According to the stage of the study, most of the articles (94.8%) accounted for prevalence and differential diagnosis studies, concentrating on numerous designs such cross-section, which gave complex evidence (1 c). The use of these methodologies for the systematic morphological knowledge allowed us to widen our research to generate clinically useful recommendations or merely a teaching approach based on the systematic morphological knowledge available.

Keywords: Bibliometric, Bibliometrics, Cohort, Comparative Stereology, Evidence-Based Medicine, Evidence-Based Morphology, Journals, Level of Evidence, Medicine, Quality, Research, Research Design

# Title: International Journal of Multiphase Flow

Full Journal Title: [International Journal of Multiphase Flow](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5749&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=1e3d038721f5cabce3961a50fdd98828)

ISO Abbreviated Title:

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Subject Categories:

: Impact Factor

? Bilicki, Z. and Kestin, J. (1983), Two-phase flow in a vertical pipe and the phenomenon of choking: Homogeneous diffusion model. I. Homogeneous flow models. *International Journal of Multiphase Flow*, **9** (3), 269-288.

Full Text: [1983\Int J Mul Flo9, 269.pdf](1983/Int%20J%20Mul%20Flo9,%20269.pdf)

Namasivayam, C. and Yamuna, R.T. (1996), Waste biogas residual slurry as an adsorbent for the removal of Pb(II) from aqueous solution and radiator manufacturing industry wastewater. *International Journal of Multiphase Flow*, **22** (S1), 96.

Full Text: [I\Int J Mul Flo22, 96.pdf](I/Int%20J%20Mul%20Flo22,%2096.pdf)

Abstract: Waste biogas residual slurry (BRS) was used for the adsorption of Pb(II) from aqueous solution, over a range of initial metal ion concentrations (20-100 mg litre-1), agitation times (5-70 min), adsorbent doses (0.4-5.0 g litre-1) and initial pH values (1.5-6.0). The applicability of the Lagergren rate equation was also investigated. The process of uptake of Pb(II) by BRS followed the Langmuir isotherm model and the adsorption capacity was 28 mg g-1. Application of BRS for the effective removal of Pb(II) from radiator manufacturing industry wastewater has been demonstrated.

# Title: International Journal of Nanotechnology

Full Journal Title: International Journal of Nanotechnology

ISO Abbreviated Title:

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Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

: Impact Factor

? Shukla, R., Ramkumar, J. and Tyagi, A.K. (2010), Nanocrystalline magnesia alumina mixed oxide: Efficient defluoridation sorbent. *International Journal of Nanotechnology*, **7** (9-12), 989-1002.

Full Text: 2010\Int J Nan7, 989.pdf

Abstract: Nanocrystalline magnesia-alumina mixed oxide (Mg0:80Al0:20O1.10) prepared by combustion synthesis method was found to be an excellent sorbent for uptake of fluoride anion of up to 120 mg L-1 concentration. The sorption was achieved at a pH of 6 with 0.015 g of oxide and maximum uptake could be achieved within a period of 1 h. The sorption followed both Langmuir and Freundlich isotherms with a maximum sorption capacity of 10 mg/g of fluoride. The uptake is a particle diffusion controlled process following pseudo second order kinetics with a rate constant of 0.0519 g mg(-1) min(-1).

Keywords: Activated Alumina, Adsorption, Alumina, Aqueous-Solution, Capacity, Defluoridation, Diffusion, Drinking-Water, Fluoride, Fluoride Removal, Fluoride Removal, Freundlich, Ions, Isotherms, Kinetics, Langmuir, Langmuir and Freundlich Isotherms, Magnesium Aluminium Mixed Oxide, Nanocrystalline, Oxide, pH, Process, Pseudo Second Order, Pseudo-Second-Order, Rate Constant, Second-Order, SI, Sorbent, Sorption, Sorption, Sorption Capacity, Synthesis, Uptake

# Title: International Journal of Nursing Studies

Full Journal Title: [International Journal of Nursing Studies](http://www.sciencedirect.com/science?_ob=PublicationURL&_cdi=5067&_pubType=J&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=ebc90476867c8fe0415dbaa5ff83c3fa)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? O’May, F. and Buchan, J. (1999), Shared governance: A literature review. *International Journal of Nursing Studies*, **36** (4), 281-300.

Full Text: [1999\Int J Nur Stu36, 281.pdf](1999/Int%20J%20Nur%20Stu36,%20281.pdf)

Abstract: This paper sets out to establish what is meant by shared governance, analyses the literature on shared governance implementation, and discusses emergent issues. The paper is based on research funded by the Department of Health (England) and by North Staffordshire NHS Trust. A literature search was undertaken using the terms ‘shared governance’ and ‘empowerment’, restricted to English language. The databases used were CINAHL, British Nursing Index, MEDLINE, Social Sciences Citation Index and FirstSearch, and the search period was January 1988-May 1998. Initially, nearly 500 articles were identified. This search also highlighted articles describing participative management, professional practice models, and self-managed work teams. For the purposes of this review, only published articles which either described and/or evaluated the implementation of shared governance were analysed. According to these criteria, 48 studies, which were obtained by the cut-off date, were included for detailed assessment. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Analyses, Assessment, Criteria, Databases, Empowerment, England, Governance, Implementation, Literature, Literature Review, Management, Models, North, Practice, Professional Practice, Research, Review, Rights, Work

? Norman, I. (2007), Two years into the job: An overview of published papers and future directions. *International Journal of Nursing Studies*, **44** (1), 1-8

Full Text: [2007\Int J Nur Stu44, 1.pdf](2007/Int%20J%20Nur%20Stu44,%201.pdf)

Keywords: Papers

? Nolan, M., Ingleton, C. and Hayter, M. (2008), The Research Excellence Framework (REF): A major impediment to free and informed debate? *International Journal of Nursing Studies*, **45** (4), 487-488

Full Text: [2008\Int J Nur Stu45, 487.pdf](2008/Int%20J%20Nur%20Stu45,%20487.pdf)

Keywords: Bibliometrics, Knowledge Translation, Research, Research Funding, UK Research Assessment Exercise, User and Career Involvement

? Oermann, M.H., Nordstrom, C.K., Wilmes, N.A., Denison, D., Webb, S.A., Featherston, D.E., Bednarz, H. and Striz, P. (2008), Information sources for developing the nursing literature. *International Journal of Nursing Studies*, **45** (4), 580-587.

Full Text: [2008\Int J Nur Stu45, 580.pdf](2008/Int%20J%20Nur%20Stu45,%20580.pdf)

Abstract: Background: Journals are an important method for disseminating research findings and other evidence for practice to nurses. Bibliometric analyses of nursing journals can reveal information about authorship, types of documents cited, and how information is communicated in nursing, among other characteristics. Objectives: The purposes of our study were to describe the types of documents used to develop the clinical and research literature in nursing, and extent of gray literature cited in those publications. Design: This was a descriptive study of 18,901 citations of articles in clinical specialty and research journals in nursing published between January 2004 and June 2005. Methods: The research team reviewed each citation to assess if the cited document was a journal article, book chapter or book, or document falling into the category of gray literature. Frequency counts for each type of cited document were recorded. Results: Most of the citations were to journal articles (n=14, 392, 76.1%) and among those, to articles in medical journals (n=7719, 40.8% of all the citations). This was true for the literature as a whole and for the clinical specialty and research literature separately. Although citations to medical journals were most common, in the clinical nursing literature there was a significantly higher proportion of citations to medical journal articles (n=6332, 44.5%) than in the nursing research literature (LRX2= 326.7, p < 0.0001). Nearly 10% of the citations were to gray literature. There was an increase in citations to websites (5.7%) compared to a study done only a few years earlier. Conclusions: Our study documented that journal literature was the primary source of information for communication within nursing. This is consistent with other biomedical and hard sciences where the transfer, assimilation, and use of information occur mainly within the scientific community. With a reliance on journal articles for dissemination of research and evidence for clinical practice, improved methods will be needed for integrating this knowledge and presenting it in a usable form to clinicians. As journals proliferate, it will become increasingly difficult for clinicians to keep current with research findings to guide their practice. The development and testing of new methods for integrating and disseminating research evidence to busy clinicians will be increasingly important in nursing. Gray literature was nearly 10% of the citations. The study also revealed an increase in citations to websites, which is anticipated to continue in the future. Further study is needed on the indexing of gray literature relevant to research use and evidence-based practice in nursing and on how to make this literature easily available to clinicians. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Access, Analyses, Authorship, Bibliometrics, Biomedical, Characteristics, Citation, Citation Analysis, Citations, Clinical, Clinical Practice, Communication, Community, Developing, Development, Digital Library, Epistemic Origins, Evidence, Evidence Based, Evidence-Based, Frameworks, Gray Literature, Indexing, Information, Journal, Journal Article, Journal Articles, Journals, Knowledge, Literature, Medical, Medical Journals, Methods, Nurses, Nursing, Nursing Literature, Practice, Primary, Publications, Research, Research Journals, Rights, Sciences, Scientific Communication, Scientific Communication, Services, Social-Sciences, Source, Sources, Specialty, Testing

? Del Bal, N., Gastmans, C. and Dierckx de Casterle, B. (2008), Nurses’ involvement in the care of patients requesting euthanasia: A review of the literature. *International Journal of Nursing Studies*, **45** (4), 626-644.

Full Text: [2008\Int J Nur Stu45, 626.pdf](2008/Int%20J%20Nur%20Stu45,%20626.pdf)

Abstract: OBJECTIVES: The aim of this paper is to thoroughly examine the involvement and experiences of nurses in the care of mentally competent, adult patients requesting euthanasia (i.e. administration of lethal drugs by someone other than the person concerned with the explicit intention of ending a patient’s life, at the latter’s explicit request) by means of a literature review. DESIGN: A keyword search was used to identify relevant journal articles and books published between 1990 and 2007. Manual searches of review article bibliographies were also conducted as well as searches of archives and collections of key journals. DATA SOURCES: The electronic databases MEDLINE, Cinahl, PsycINFO, The Cochrane Library, Social Sciences Citation Index, and Invert were searched using a combination of keywords and carefully constructed inclusion criteria. REVIEW METHODS: Forty-two publications of empirical research were identified and included in the present study after critical appraisal. The included publications represented 35 separated studies (20 quantitative, 11 qualitative and 4 mixed-method publications) and 28 different research samples. RESULTS: Analysis of these studies revealed that nurses across diverse geographic and clinical settings play a major role in caring for and showing a personal interest in patients requesting euthanasia. The nurses’ feelings about euthanasia and their involvement are extremely complex. Descriptions of personal conflict, moral uncertainty, frustration, fear, secrecy, and guilt appear to reflect a complex array of personal and professional values as well as social, religious, and legal rules. CONCLUSIONS: Nurses can make a significant contribution to the quality of care by assisting and counseling patients and their families, physicians, and their nursing colleagues in a professional manner, even in countries where euthanasia is not legal. However, research on nurses’ involvement in euthanasia has methodological and terminological problems,leading to our recommendation for more carefully designed qualitative studies that explore in-depth the experiences of nurses in caring for patients requesting euthanasia.

Keywords: Administration, Adult, Bibliographies, Care, Caring, Clinical, Constructed, Criteria, Databases, Drugs, Euthanasia, Families, Fear, Journal, Journal Articles, Journals, Legal, Lethal Drugs, Life, Literature, Literature Review, Methods, Nurses, Nursing, Patients, Person, Physicians, Psycinfo, Publications, Qualitative, Quality, Quality of, Quality of Care, Research, Review, Role, Social, Sources, Uncertainty

? Griffiths, P. (2008), What does “international” mean for an “international” journal? *International Journal of Nursing Studies*, **45** (12), 1711-1714.

Full Text: [2008\Int J Nur Stu45, 1711.pdf](2008/Int%20J%20Nur%20Stu45,%201711.pdf)

Keywords: Bibliometrics, Care Nurses, Chinese Version, English Hospitals, Health Nurses, Interview Survey, Job-Satisfaction, Journal, Korean Women, Nursing Research, Periodicals, Quality-of-Life, Scale Development, Sectional Questionnaire Survey

? Ketefian, S. and Freda, M.C. (2009), Impact factors and citations counts: A state of disquiet. *International Journal of Nursing Studies*, **46** (6), 751-752

Full Text: [2009\Int J Nur Stu46, 751.pdf](2009/Int%20J%20Nur%20Stu46,%20751.pdf)

Keywords: Bibliometrics, Citations, Impact Factors, Nursing Journals

? Ilott, I., Booth, A., Rick, J. and Patterson, M. (2010), How do nurses, midwives and health visitors contribute to protocol-based care? A synthesis of the UK literature. *International Journal of Nursing Studies*, **47** (6), 770-780.

Abstract: Objectives To explore how nurses, midwives and health visitors contribute to the development, implementation and audit of protocol-based care Protocol-based care refers to the use of documents that set standards for clinical care processes with the intent of reducing unacceptable variations in practice Documents such as protocols, clinical guidelines and care pathways underpin evidence-based practice throughout the world Methods An interpretative review using the five-stage systematic literature review process The data sources were the British Nursing Index, CINAHL, EMBASE, MEDLINE and Web of Science nom onset to 2005 The Journal of Integrated Care Pathways was hand searched (1997-June 2006) Thirty three studies about protocol-based care in the United Kingdom wet e appraised using the Qualitative Assessment and Review Instrument (QARI version 2) The literature was synthesized inductively and deductively, using an official 12-step guide for development as a framework for the deductive synthesis Results Most papers were descriptive, offering practitioner knowledge and positive findings about a locally developed and owned protocol-based care The majority were instigated in response to clinical need or service re-design Development of protocol-based care was a non-linear. idiosyncratic process, with steps omitted, repeated or completed in a different order The context and the multiple purposes of protocol-based care influenced the development process Implementation and sustainability were rarely mentioned, or theorised as a change The roles and activities of nurses were so understated as to be almost invisible There were notable gaps in the literature about the resource use costs, the engagement of patients in the decision-making process, leadership and the impact of formalisation and new roles on inter-professional relations Conclusions Documents that standardise clinical care are part of the history of nursing as well as contemporary evidence-based care and expanded roles Considering the proliferation and contested nature of protocol-based care, the dearth of literature about the contribution, experience and outcomes for nurses, midwives and health visitors is noteworthy and requires further investigation (C) 2010 Elsevier Ltd All rights reserved.

Keywords: Activities, Art, Assessment, Care, Clinical Guidelines, Clinical Pathways, Contribution, Costs, Decision Making, Decision-Making, Development, Embase, Evidence-Based Practice, Guidelines, History, Impact, Implementation, Journal, Knowledge, Literature, Literature Review, Medline, Methods, Nurses, Nursing, Outcomes, Papers, Practice, Practitioners, Protocol-Based Care, Review, Science, Standards, Systematic, Systematic Literature Review, UK, United Kingdom, Web of Science

? Smith, D.R. (2010), A longitudinal analysis of bibliometric and impact factor trends among the core international journals of nursing, 1977-2008. *International Journal of Nursing Studies*, **47** (12), 1491-1499.

Full Text: [2010\Int J Nur Stu47, 1491.pdf](2010/Int%20J%20Nur%20Stu47,%201491.pdf)

Abstract: Background Although bibliometric analysis affords significant insight into the progression and distribution of information within a particular research field detailed longitudinal studies of this type are rare within the field of nursing Objectives This study aimed to investigate from a bibliometric perspective the progression and trends of core international nursing journals over the longest possible time period Methods A detailed bibliometric analysis was undertaken among 7 core international nursing periodicals using custom historical data sourced from the Thomson Reuters Journal Citation Reports (R) Results In the 32 years between 1977 and 2008 the number of citations received by these 7 journals increased over 700% A sustained and statistically significant (p < 0 001) 3-fold increase was also observed in the average impact factor score during this period Statistical analysis revealed that all periodicals experienced significant (p < 0 001) improvements in their Impact factors over time with gains ranging from approximately 2- to 78-fold Conclusions Overall this study provides one of the most comprehensive longitudinal bibliometric analyses ever conducted in the field of nursing Impressive and continual impact factor gains suggest that published nursing research is being increasingly seen heard and cited in the international academic community (C) 2010 Elsevier Ltd All rights reserved.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Bibliometrics, Category, Citation, Citation Analysis, Citation Analysis, Citations, Data, Editorial Nurses, Evolution, Field, Impact Factor, Impact Factors, Journal Citation Reports, Journals, Medical Journals, Nursing, Occupational-Health, Ophthalmology, Periodicals, Publications, Quality, Reports, Research, Science, Statistical Analysis, Trends

? Thompson, C. and Stapley, S. (2011), Do educational interventions improve nurses’ clinical decision making and judgement? A systematic review. *International Journal of Nursing Studies*, **48** (7), 881-893.

Full Text: [2011\Int J Nur Stu48, 881.pdf](2011/Int%20J%20Nur%20Stu48,%20881.pdf)

Abstract: Objectives: Despite the growing popularity of decision making in nursing curricula, the effectiveness of educational interventions to improve nursing judgement and decision making is unknown. We sought to synthesise and summarise the comparative evidence for educational interventions to improve nursing judgements and clinical decisions. Design: A systematic review. Data sources: Electronic databases: Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, CINAHL and PsycINFO, Social Sciences Citation Index, OpenSIGLE conference proceedings and hand searching nursing journals. Review methods: Studies published since 1960, reporting any educational intervention that aimed to improve nurses’ clinical judgements or decision making were included. Studies were assessed for relevance and quality. Data extracted included study design; educational setting; the nature of participants; whether the study was concerned with the clinical application of skills or the application of theory; the type of decision targeted by the intervention (e.g. diagnostic reasoning) and whether the evaluation of the intervention focused on efficacy or effectiveness. A narrative approach to study synthesis was used due to heterogeneity in interventions, study samples, outcomes and settings and incomplete reporting of effect sizes. Results: From 5262 initial citations 24 studies were included in the review. A variety of educational approaches were reported. Study quality and content reporting was generally poor. Pedagogical theories were widely used but use of decision theory (with the exception of subjective expected utility theory implicit in decision analysis) was rare. The effectiveness and efficacy of interventions was mixed. Conclusions: Educational interventions to improve nurses’ judgements and decisions are complex and the evidence from comparative studies does little to reduce the uncertainty about ‘what works’. Nurse educators need to pay attention to decision, as well as pedagogical, theory in the design of interventions. Study design and reporting requires improvement to maximise the information contained in reports of educational interventions. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Citation, Citations, Databases, Decision Making, Decision-Making, Design, Educational Activities, Efficacy, Evaluation, Health-Care, Information, Intervention, Interventions, Journals, Judgement, Medline, Nurses, Nursing, Nursing Journals, Nursing-Students, Outcomes, Quality, Review, Social Sciences, Strategies, Students Critical Thinking, Systematic Review, Trial

? Mahieu, L., Van Elssen, K. and Gastmans, C. (2011), Nurses’ perceptions of sexuality in institutionalized elderly: A literature review. *International Journal of Nursing Studies*, **48** (9), 1140-1154.

Full Text: [2011\Int J Nur Stu48, 1140.pdf](2011/Int%20J%20Nur%20Stu48,%201140.pdf)

Abstract: Background: Institutionalized elderly continue to have the need for sexual expression and intimacy. Nurses often display negative responses when they are confronted with the sexual behavior of residents. They feel ashamed and do not know how to react. This generates feelings of discomfort, resulting in the denial of resident’s needs and desires for sexual fulfillment. Objectives: The objective of this review is to thoroughly analyze the literature about the knowledge, attitudes, and experiences of nursing staff toward sexuality in institutionalized elderly. We shed light onto the relationship between knowledge and attitudes, and determined whether certain demographic factors relate to the knowledge and attitudes of nursing home caregivers. Design: We conducted an extensive search of the electronic databases Medline, Cinahl, Psychinfo, Web of Science, Philosophers Index, Google Scholar, and Invert for papers published between January 1980 and September 2010. A broad range of search keywords was used. Findings: The quantitative studies revealed nursing staff to show rather positive attitudes toward later-life sexuality. However, the extent of the staffs knowledge regarding sexuality in the aged seemed to be very limited. There was no consensus found about the relationship between knowledge and attitudes. As regards the influence of demographic variables, the results were very ambiguous. The qualitative studies showed that caregivers hold rather conservative attitudes toward sexuality in institutionalized elderly. Feelings of discomfort prevailed. The responses to residents’ sexual behavior were influenced by the staffs own level of comfort related to sexuality issues and the ethos within the institution where they work. Conclusions: This review gives us a broad outline of the knowledge, attitudes, and experiences of geriatric nurses toward sexuality in institutionalized elderly. If we want the sexual needs of residents to be recognized, more research is needed. Especially needed are more in-depth qualitative studies that explore the experiences of nurses and managers. The development of a more accurate educational program could increase the knowledge of later-life sexuality and cultivate positive and permissive attitudes toward sexuality in the aged. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Active Older Persons, Aged, Attitudes, Behavior, Care, Databases, Dementia, Development, Elderly, Geriatric, Google Scholar, Home Residents, Increase, Knowledge, Literature, Literature Review, Medline, Nurses, Nurses Perceptions, Nursing, Nursing Homes, Nursing-Students Attitudes, Papers, People, Perceptions, Quantitative, Research, Residents, Review, Science, Sexual Behavior, Sexuality, Staff, Web of Science

# Title: International Journal of Obesity

Full Journal Title: International Journal of Obesity

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Subject Categories:

Endocrinology & Metabolism: Impact Factor 2.794, 33/88 (2003)

Nutrition & Dietetics: Impact Factor 2.794, 24/53 (2003)

? Tsiros, M.D., Olds, T., Buckley, J.D., Grimshaw, P., Brennan, L., Walkley, J., Hills, A.P., Howe, P.R.C. and Coates, A.M. (2009), Health-related quality of life in obese children and adolescents. *International Journal of Obesity*, **33** (4), 387-400.

Abstract: Objective: This review addresses the effect of overweight and obese weight status on pediatric health-related quality of life (HRQOL). Method: Web of Science, MEDLINE, CINAHL, Cochrane Library, EMBASE, AMED and PUBMED were searched for peer-reviewed studies in English reporting HRQOL and weight status in youth (<21 years), published before March 2008. Results: Twenty-eight articles were identified. Regression of HRQOL against body mass index (BMI) using pooled data from 13 studies utilizing the Pediatric Quality of Life Inventory identified an inverse relationship between BMI and pediatric HRQOL (r = -0.7, P = 0.008), with impairments in physical and social functioning consistently reported. HRQOL seemed to improve with weight loss, but randomized controlled trials were few and lacked long-term follow-up. Conclusions: Little is known about the factors associated with reduced HRQOL among overweight or obese youth, although gender, age and obesity-related co-morbidities may play a role. Few studies have examined the differences in HRQOL between community and treatment-seeking samples. Pooled regressions suggest pediatric self-reported HRQOL can be predicted from parent proxy reports, although parents of obese youths tend to perceive worse HRQOL than children do about themselves. Thus, future research should include both pediatric and parent proxy perspectives.

Keywords: Adolescents, Age Subgroups, Behavior-Modification, Bmi, Body Mass Index, Children, Cochrane, Embase, Follow-Up, Gender, Generic Core Scales, Health-Related Quality of Life, Hrqol, Intervention, Losing Weight, Low-Energy Diet, Overweight, Overweight Youth, Parent, Parents, Pediatric, Pedsql(Tm)-4.0, Pubmed, Quality, Quality of Life, Randomized Controlled Trials, Research, Review, School-Children, Science, Social, Trial, Web of Science, Youth

? Owen, C.G., Whincup, P.H., Orfei, L., Chou, Q.A., Rudnicka, A.R., Wathern, A.K., Kaye, S.J., Eriksson, J.G., Osmond, C. and Cook, D.G. (2009), Is body mass index before middle age related to coronary heart disease risk in later life? Evidence from observational studies. *International Journal of Obesity*, **33** (8), 866-877.

Abstract: Objective: Although obesity beginning early in life is becoming more common, its implications for coronary heart disease (CHD) risk in later life remain uncertain. We examined the relationship of body mass index (BMI) before 30 years of age to CHD risk in later life. Design: Systematic review of published studies relating BMI between age 2 and 30 years to later CHD risk. Studies were identified using MEDLINE (1950 onwards), EMBASE (1980 onwards) and Web of Science (1970 onwards) databases (to November 2007). Measurements: Relative risks (RR) of CHD associated with a 1 standard deviation (s.d.) higher BMI (most based on a narrow age range at measurement) were extracted by two authors independently, and combined using random-effect models. Results: A total of 15 studies provided 17 estimates (731 337 participants, 23 894 CHD events) of the association of early BMI to later CHD outcome. BMI in early childhood (2-6 years, 3 estimates) showed a weak inverse association with CHD risk (RR 0.94, 95% CI 0.82-1.07). BMI in later childhood (7 to < 18 years, 7 estimates) and BMI in early adult life (18-30 years, 7 estimates) were both positively related to later CHD risk (RR 1.09, 95% CI 1.00-1.20; RR 1.19, 95% CI 1.11-1.29 respectively). However, there was considerable statistical heterogeneity between study estimates. Results were unaffected by adjustment for social class and/or cigarette smoking, blood pressure and/or total cholesterol, in studies with available data. Gender and year of birth (1900-1976) had little effect on the association. Conclusions: BMI is positively related to CHD risk from childhood onwards; the associations in young adults are consistent with those observed in middle age. Long-term control of BMI from childhood may be important to reduce the risk of CHD. International Journal of Obesity (2009) 33, 866-877; doi: 10.1038/ijo.2009.102; published online 9 June 2009.

Keywords: 1950s Prospective Cohort, Aberdeen Children, Adolescent, Adult, Adult Cardiovascular Mortality, Adults, Authors, Birth-Weight, Blood, Blood Pressure, Blood-Pressure, Bmi, Body Mass Index, Child, Children, Childhood Obesity, Control, Coronary Heart Disease, Databases, Disease, Disease Risk, Follow-Up, Gender, Journal, Measurement, Metabolic Syndrome, Obesity, Observational Studies, Outcome, Pressure, Review, Risk, Science, Smoking, Social, Social Class, Statistical, Systematic, Systematic Review, Total Cholesterol, Web of Science, X-Ray Absorptiometry, Young Adults, Young-Finns

? Okorodudu, D.O., Jumean, M.F., Montori, V.M., Romero-Corral, A., Somers, V.K., Erwin, P.J. and Lopez-Jimenez, F. (2010), Diagnostic performance of body mass index to identify obesity as defined by body adiposity: A systematic review and meta-analysis. *International Journal of Obesity*, **34** (5), 791-799.

Abstract: Objective: We performed a systematic review and meta-analysis of studies that assessed the performance of body mass index (BMI) to detect body adiposity. Design: Data sources were MEDLINE, EMBASE, Cochrane, Database of Systematic Reviews, Cochrane CENTRAL, Web of Science, and SCOPUS. To be included, studies must have assessed the performance of BMI to measure body adiposity, provided standard values of diagnostic performance, and used a body composition technique as the reference standard for body fat percent (BF%) measurement. We obtained pooled summary statistics for sensitivity, specificity, positive and negative likelihood ratios (LRs), and diagnostic odds ratio (DOR). The inconsistency statistic (I2) assessed potential heterogeneity. Results: The search strategy yielded 3341 potentially relevant abstracts, and 25 articles met our predefined inclusion criteria. These studies evaluated 32 different samples totaling 31 968 patients. Commonly used BMI cutoffs to diagnose obesity showed a pooled sensitivity to detect high adiposity of 0.50 (95% confidence interval (CI): 0.43-0.57) and a pooled specificity of 0.90 (CI: 0.86-0.94). Positive LR was 5.88 (CI: 4.24-8.15), I(2) = 97.8%; the negative LR was 0.43 (CI: 0.37-0.50), I(2) = 98.5%; and the DOR was 17.91 (CI: 12.56-25.53), I(2) = 91.7%. Analysis of studies that used BMI cutoffs >= 30 had a pooled sensitivity of 0.42 (CI: 0.31-0.43) and a pooled specificity of 0.97 (CI: 0.96-0.97). Cutoff values and regional origin of the studies can only partially explain the heterogeneity seen in pooled DOR estimates. Conclusion: Commonly used BMI cutoff values to diagnose obesity have high specificity, but low sensitivity to identify adiposity, as they fail to identify half of the people with excess BF%. International Journal of Obesity (2010) 34, 791-799; doi: 10.1038/ijo.2010.5; published online 2 February 2010.

Keywords: Adiposity, Association, BMI, Body Composition, Body Mass Index, Chinese, Cochrane, Embase, Fat, Fat Mass, Journal, Measurement, Medline, Meta-Analysis, Mortality, Obesity, Population, Postmenopausal Women, Ratio, Review, Science, Scopus, Statistics, Strategy, Systematic, Systematic Review, To-Hip Ratio, Waist Circumference, Web of Science, Young-Adults

# Title: Int J Occup Environ Health

(Int. J. Occup. Environ. Health)

? Cho, S.I., Li, Q., Yang, J., Chen, C., Padungtod, C., Ryan, L., Christiani, D.C. and Xu, X. (1999), Drinking water source and spontaneous abortion: A cross-sectional study in a rural Chinese population. *Int J Occup Environ Health*, **5** (3), 164-169.

Abstract: The authors examined the association between the risk of spontaneous abortion and the type of drinking water source in a rural Chinese population. Information about pregnancy outcomes and various exposures was collected by means of a detailed interview questionnaire. 2,876 pregnancies occurring in 1989-1993 among 2,201 nonsmoking and non-alcohol-drinking women were analyzed by logistic regression. Generalized estimating equations were used to adjust for correlations between multiple pregnancies in the same woman. The use of pond water as a drinking water source was associated with a higher risk of spontaneous abortion than the use of well or river water (odds ratio, 1.63; 95% confidence interval, 1.11 to 2.39), adjusting for potential confounders. More studies are needed to identify the agents responsible for the observed association. The results of this study emphasize the importance of monitoring potential drinking-water contamination in communities.

# Title: International Journal of Offender Therapy and Comparative Criminology

Full Journal Title: International Journal of Offender Therapy and Comparative Criminology

ISO Abbreviated Title:

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ISSN:

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Language:

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Subject Categories:

Impact Factor

? Pelletier, D., Coutu, S. and Lamonde, A. (1996), Work and gender issues in secure juvenile delinquency facilities. *International Journal of Offender Therapy and Comparative Criminology*, **40** (1), 32-43.

Abstract: The aim of this research was to study the effects of a majority or minority status in the work environment (referred to as “tokenism” by R. M. Kanter) on certain markers of work-life quality among direct care staff working with juvenile delinquents in sexually segregated residential facilities. A sample of 401 youth counselors (162 men and 239 women) participated in the research. Four groups of subjects representing gender majorities and minorities were created: men (n = 125) and women (n = 60) working with delinquent boys, and women (n = 179) and men (n = 37) working with delinquent girls. Self-report written assessments were used to measure sources of job stress, coping, job satisfaction, and burnout. Results indicated that ratios interact with gender to create different levels of work-life quality for majority and minority men and women.

Keywords: Social Support, Male Nurses, Burnout, Women, Stress, Sex, Tokenism, Professionals, Perspective, Impact

? Russo, S.P., Fiorellini, J.P., Weber, H.P. and Niederman, R. (2000), Benchmarking the dental implant evidence on MEDLINE. *International Journal of Oral & Maxillofacial Implants*, **15** (6), 792-800.

Abstract: The purpose of this study was to estimate the quantity of dental implant literature available on MEDLINE for evidence-based clinical decision-making and to identify its location. A search strategy based on Medical Subject Headings for dental implants was developed to examine MEDLINE using the Ovid Web Gateway search engine. Sensitive and specific methodologic search filters identified 4 categories of information: etiology, diagnosis, therapy, and prognosis. The results were then subdivided by year to identify trends and sorted to identify the sources of publications. The searches identified 4,655 articles published in English between 1989 and 1999 on human dental implants on MEDLINE, The mean number of articles (±SD) per year ranged from 15±11 for specific searches to 107±50 for sensitive searches. The number of articles increased by 14% to 43% each year for the sensitive search. When subdivided by clinical category, the mean numbers of articles per year for sensitive and specific searches were, respectively: diagnosis 12±7.5 and 1.5±1.6, etiology 58±33 and 1.9±2.5, therapy 23±15 and 0.3±0.5 and prognosis 67±33 and 12±8.3. Four dental journals account for approximately half of these publications. These results provide 6 key central findings: (1) there appears to be a substantial literature of clinically relevant information on implants upon which to base clinical decisions; (2) the implant literature is significantly biased toward articles addressing prognosis; (3) to stay current, one would need to read between 1 and 2 articles per week 52 weeks per year, and this number increases significantly each year; (4) approximately 50% of the articles were published in 4 journals, whereas the remainder reside in approximately 97 other journals, making it difficult to stay current; (5) these trends reaffirm the need for lifelong learning; (6) these trends also suggest the need for computer-based clinical knowledge systems.

Keywords: Clinical, Decision Making, Decision-Making, Diagnosis, Engine, Etiology, Evidence, Evidence Based, Evidence-Based, Human, Information, Journals, Knowledge, Learning, Literature, Location, MEDLINE, Prognosis, Publications, Purpose, Search Strategy, Sources, Systems, Therapy, Trends

# Title: International Journal of Oncology

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Publisher: Professor D A Spandidos

Publisher Address: 1, S Merkouri St, Editorial Office, Athens 116 35, Greece

Subject Categories:

Oncology: Impact Factor 2.931, 31/114 (2002)

? Takeda, S., Sim, P.G., Horrobin, D.F., Chisholm, K.A., Simmons, V.A., Ells, G.W., Jenkins, D.K. and Morsefisher, N.L. (1992), Intracellular free fatty-acid release and lipid-peroxidation incultured human breast-cancer cells in response to gamma-linolenic acid with iron (gla (Fe)). *International Journal of Oncology*, **1** (7), 759-763.

Full Text: Int J Onc1, 759

Abstract: Intracellular free fatty acid (FFA) release and peroxidation ofpolyunsaturated fatty acid (PUFA) were studied in cultured human breast cancer cells (ZR-75-1) exposed to gamma-linolenic acid with iron (GLA + Fe). This treatment results in cell death. Increased intracellular FFA were observed in associationwith both the accelerated peroxidation of PUFA and the killing effect. Vitamin E reduced all three effects. The FFA were methyl esterified and analyzed by gas chromatography-mass spectrometry. The identified FFAs were 16: 0, 18: 3, 20: 3 and 20: 4 (numbers of carbons and double bonds indicated). These results suggest an association of intracellular FFA release with the peroxidation of PUFA and the cancer cell-killing by GLA in the presence of iron.

Keywords: Neuro-Blastoma Cells, Carcinoma-Cells, Reversibility, Intracellular Free Fatty Acid (Intracellular Ffa), Lipid Peroxidation, Polyunsaturated Fatty Acid (Pufa), Gamma-Linolenic Acid (Gla), Human Breast Cancer Cells (Zr-75-1), Gas-Chromatography Mass-Spectrometry (GC-MS)

? Alhasan, S.A., Ensley, J.F. and Sarkar, F.H. (2000), Genistein induced molecular changes in a squamous cell carcinoma of the head and neck cell line. *International Journal of Oncology*, **16** (2), 333-338.

Full Text: Int J Onc16, 333

Abstract: Epidemiological studies have shown lower incidence of breast and prostate cancers in Asian populations consuming a traditional diet rich in soy. Protection from these cancers was attributed to the isoflavones, particularly genistein and daidzein found in vivo as the major metabolites of soy isoflavones. However, the role of isoflavones in head and neck cancer is less clear. In our previous studies we reported that genistein can induce cell growth inhibition by arresting the cells at S/G2-M phases, and also induces apoptosis in HN4 squamous cell carcinoma of the head and neck cell line (HNSCC). In this report we show that these changes are accompanied by the down-regulation of Cdk1, and CyclinB1, and up-regulation of the cyclin dependent kinase (Cdk) inhibitor p21(WAF1), which may be responsible for the induction of cell cycle arrest and apoptosis. The evidence for the induction of apoptosis was supported by the appearance of DNA ladder as reported previously, and further supported by our current results on the cleavage of poly-ADP-ribose polymerase (PARP), hallmark of apoptosis. This was also accompanied by the up-regulation of Bax, with modest down-regulation of Bcl-2 protein expression, which changes the balance between pro- and anti-apoptosis molecules in favor of pro-apoptosis. Furthermore, we also observed downregulation and degradation of Cdc25C, which is a marker of cell proliferation, and plays important role in CyclinB-Cdk1 complex activation. The down-regulation followed by the degradation of Cdc25C is an indicator of G2/M arrest and anti-proliferation effects of genistein. Collectively, these data provide strong molecular evidence for the anti-tumor activity of genistein in HNSCC cells.

Keywords: p21(WAF1), Bax, CyclinB1, Cdc25C, PARP, Bcl-2, Genistein, Apoptosis, Head and Neck Cancer, Dna-Replication, Leukemia-Cells, Growth Arrest, Cytochrome-C, In-Vitro, Permeability Transition, Isolated-Mitochondria, Cancer Cells, Apoptosis, Inhibitor

# Title: International Journal of Operations & Production Management

Full Journal Title: [International Journal of Operations & Production Management](http://www.emeraldinsight.com/Insight/viewContainer.do?containerType=Journal&containerId=200)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Pilkington, A. and Liston-Heyes, C. (1999), Is production and operations management a discipline? A citation/co-citation study. *International Journal of Operations & Production Management*, **19** (1), 7-20.

Full Text: [I\Int J Ope Pro Man19, 7.pdf](I/Int%20J%20Ope%20Pro%20Man19,%207.pdf)

Abstract: For the past 20 years, the field of production and operations management (POM) has tried to establish itself as a discipline distinct from operations research (OR), management science (MS) and industrial engineering (IE). Sceptics argue that POM has failed to develop its own body of literature, lacks a distinct intellectual structure and that there is little appreciation of what it stands for. In this paper we use bibliometric techniques (a factor analysis of co-citations) to investigate the intellectual pillars of the POM literature and explore whether these are distinct from those commonly associated with its rival fields. We also use simple non-parametric techniques to show that the research agenda of European POM scholars differs substantially from that of their North American counterparts, and argue that such transatlantic differences may have exacerbated the difficulties POM has experienced in developing as a respected academic discipline.

Keywords: Author Cocitation, Factor Analysis, Implementation, Just-in-Time, Lean Production, Literature, Manufacturing Strategy, Performance, Production Competence, Production Management, Quality Management, Research, Toyota Production System, United-States

? Roy, S., Nagpaul, P.S. and Mohapatra, P.K. (2003), Developing a model to measure the effectiveness of research units. *International Journal of Operations & Production Management*, **23** (11-12), 1514-1531.

Full Text: [2003\Int J Ope Pro Man23, 1514.pdf](2003/Int%20J%20Ope%20Pro%20Man23,%201514.pdf)

Abstract: Research and development (R&D) effectiveness has traditionally been measured in quantitative terms using measures such as the number of published papers (in journals, conference proceedings, etc.); patents; technologies successfully transferred or the external cash flow secured by a R&D organization. These are at times coupled with qualitative indicators such as the impact factor of the journals in which the papers are published and science citation index. However, all these measures often fail to adequately evaluate the effectiveness of research units (RUs) that carry out technological innovation projects. The present study examines this important conceptual question. The study attempts to develop a subjective measure of effectiveness of RU functioning within the laboratories under the Council of Scientific and Industrial Research (CSIR), India, in terms of peer review at four levels - self assessment, head of the RU, external scientific, and external administrative evaluators, using data from 236 RUs working in different laboratories functioning under CSIR. The measurement model component of structural equation modeling methodology using the LISREL 7.16 program has been adopted as the primary methodology for the study. In the measurement model presented, the observed indicators of the different effectiveness measure concepts (R&D effectiveness, user-oriented effectiveness, administrative effectiveness and recognition) are assumed to possess causal relations with one another. Since subjective measures have not only weak measurement properties, but are also influenced by systematic and random measurement errors, the model’s reliability and construct validity - both in terms of convergent validity and discriminate validity - have been ascertained.

Keywords: Assessment, Citation, Convergent Validity, Cost Effectiveness, Covariance, Error, FIT, Goodness, Impact, Impact Factor, Indexes, India, Indicators, Journals, Measurement, Model, Modeling, Patents, Peer Review, Peer-Review, Performance-Measurement, Primary, R&D, Reliability, Reliability Management, Research, Research and Development, Research Institutes, Research Work, Research-and-Development, Review, Science, Science Citation Index, Technological Innovation, Tests

? Lehtinen, J. and Ahola, T. (2010), Is performance measurement suitable for an extended enterprise? *International Journal of Operations & Production Management*, **30** (2), 181-204.

Full Text: [2010\Int J Ope Pro Man30, 181.pdf](2010/Int%20J%20Ope%20Pro%20Man30,%20181.pdf)

Abstract: Purpose - The purpose of this paper is to assess whether performance measurement literature and as a result, practical applications, models and frameworks drawing from this literature are compatible with the central features of extended enterprises. Design/methodology/approach - The paper is based on a bibliometric study that is supplemented with an empirical case study. Findings - The results of this paper indicate that literature on performance measurement and literature on extended enterprises are only partially compatible. The common underlying reasons for measuring performance are highly valid also in the context of an extended enterprise. However, performance measurement processes and practices utilized within firms are to a considerable degree incompatible with central characteristics of extended enterprises. A highly apparent conflict between the two streams of literature is related to choosing individual performance measures (i.e. the question of what to measure). Performance measurement literature emphasizes intral-organizational measures which conflicts starkly with the emphasis of inter-organizational collaboration dominant in literature addressing extended enterprises. Research limitations/implications - The sample consists of articles published in many leading academic journals. The primary implication of this paper is that the importance of inter-organizational relations and collaboration, and the lack of a central decision-making authority should be taken into consideration when designing and implementing performance measurement systems for extended enterprises. Practical implications - Managers implementing performance measurement systems may tend to adopt solutions recommended by industry actors and dominant performance measurement literature. As increasingly many firms operate as a part of an extended enterprise, the adoption of these off-the-shelf solutions poses considerable risks. Originality/value - The main contribution of this paper is that it systematically assesses the compatibility of performance measurement and extended enterprise literature by means of a bibliometric analysis. In addition, the paper identifies key contributions from both streams of literature. An empirical case representing the shipbuilding industry is carried out to validate obtained findings.

Keywords: Applications, Articles, Balanced Scorecard, Bibliometric, Bibliometric Analysis, Bibliometric Study, Business Enterprise, Characteristics, Collaboration, Contribution, Data Envelopment Analysis, Evolution, Framework, Issues, Journals, Literature, Logistics, Measurement Systems, Models, Networks, Organization, Performance Measurement (Quality), Primary, Research, Research Work, Solutions, Supply-Chain Management

# Title: International Journal of Ophthalmology

Full Journal Title: [International Journal of Ophthalmology](http://cnki50.csis.com.tw/kns50/Navi/item.aspx?NaviID=1&BaseID=GJYK&NaviLink=%e5%9b%bd%e9%99%85%e7%9c%bc%e7%a7%91%e6%9d%82%e5%bf%97)

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Xu, C.T., Li, S.Q., Lu, Y.G. and Pan, B.R. (2011), Development of biomedical publications on ametropia research in PubMed from 1845 to 2010: A bibliometric analysis. *International Journal of Ophthalmology*, **4** (1), 1-7.

Full Text: [2011\Int J Oph4, 1.docx](2011/Int%20J%20Oph4,%201.docx)

Abstract: We have carried out a bibliometric analysis on the development of ametropia literature to determine its growth rule and tendency, and to provide the basis for the problems related to ametropia research. Literatures that contained the descriptors of ametropia in title or paper published before Nov. 10, 2010 in PubMed databases (www.ncbi.nlm.nih.gov/Pubmed) were selected. As bibliometric indicators of ametropia, biomedical journals referring to ophthalmology by ISSN were calculated. The principal bibliometric indicators: Price’s and Bradford’s laws were applied on the increase or dispersion of scientific literature, the participation index of languages and the journals. By means of manual coding, literatures were classified according to documents study and statistical analysis. The literatures cited in ametropia, astigmatism, myopia and hypermetropia had accumulated to 26475, which consists of Review (n =1560), Randomized Controlled Trial (n =776), Practice Guideline (n =10), Meta-Analysis (n=23), Letter (n=1222), Editorial (n =328), Clinical Trial ( n =1726) and Others (n=20830); and Humans (n=23073), Animals (n=1434) and Others ( n=1968). 1136 literatures were included in PubMed Central, 22384 in MEDLINE and 2955 in others. The ametropia literatures rose every 5 years which of the ametropia-year cumulated amount of the literatures had three periods: before 1900, slowly increasing from 1901 to 1950, rapidly rising from 1951 to 2010 (increased approximate exponentiation exponent). Sixty kinds of languages were listed in PubMed databases, of which English was dominant for aborting to ametropia research documents before 2010 (77.32%, 20471/26475). The document language of top eight accounted for 95.58% (English, German, French, Japanese, Russian, Italian, Spanish, Chinese), and others for 4.42% (1171/26475). The SCI database includes 48 ophthalmologic journals and the impact factor of 39 journals is >= 1 on Thomson-Reuters in 2010. Of 48 ophthalmologic journals, there were 14785 documents (55.85%) of ametropia, astigmatism, myopia, and hypermetropia. Others were without exception. The bibliometric analysis results show that ametropia literature are increased progressively, approximate exponentiation Exponent during 1951-2010. In addition, ametropia research has become more popular since nearly half century.

Keywords: Ametropia, Analysis, Astigmatism, Bibliometric, Bibliometric Analysis, Bibliometric Indicators, Bioethics, Biomedical, Biomedical Journals, Biomedical Publications, Cataract-Surgery, Chinese, Choroidal Neovascularization, Coding, Database, Databases, Development, Dispersion, Femtosecond Laser, Growth, High Myopia, Humans, Impact, Impact Factor, Implantation, Index, Indicators, Intraocular-Lens, Journal, Journals, Languages, Lasik, Laws, Literature, MEDLINE, Participation, Pathological Myopia, Publications, PUBMED, Research, SCI, Scientific Literature, Statistical Analysis

? Zhao, Z.G., Guo, X.G., Xu, C.T., Pan, B.R. and Xu, L.X. (2011), Bibliometric analysis on retinoblastoma literatures in PubMed during 1929 to 2010. *International Journal of Ophthalmology*, **4** (2), 115-120.

Full Text: 2011\Int J Oph4, 115.pdf

Abstract: AIM: To determine the growth rule and tendency of retinoblastoma (Rb) literature, and to provide the basis for research of diagnosis, treatment and on Rb. METHODS: Bibliometric analyses were carried out on Rb literatures which contain the descriptors of Rb in their titles or texts from 1929 to 2010 in PubMed database (www.ncbi.nlm. nih.gov/Pubmed). The biomedical journals referring to Rb by using bibliometric indicators were calculated. The principal bibliometric indicators, i.e, Price’s and Bradford’s laws to the increase or distribution of scientific literature, the participation index of languages and the journals were applied. By means of manual coding, Rb documents were classified according to documents studied and to statistical analysis. RESULTS: During 1929-2010, there were 16162 literatures in the PubMed database including the word Rb. According to the literature type, it includes Review (n=2026), Randomized Controlled Trial (n = 7), Practice guideline (n = 3), meta-analysis (n = 4), letter (n = 215), editorial (n = 98), clinical trial (n = 115) and others (n = 13694). By the statistical analysis, its equation is near power index (y = 3.0477 x(2.6088), R-2 = 0.9666). From 1929 to 2010, Rb literatures in English were primarily dominant (90.71%) and the amount of the literature in Chinese ranked the fourth (1.37%). By searching PubMed, 1420 (8.8%) literatures covered were from 41 of 48 ophthalmological, and 406 (2.5%) literatures from 44 of 86 pediatrics journals that correlated with retinoblastoma (SCI-indexed). The data showed that the literatures of Rb were gradually increasing year by year and were approximate near power index during 1929-2010, and the document publishes published mainly in ophthalmological journals, and in English (90.71%), and showing that the study on Rb is a popular subject in the last half century. CONCLUSION: The literatures of Rb are gradually increasing, mainly English in ophthalmologic journals.

Keywords: Assisted Reproductive Technology, Bibliometric Analysis, Biomedical Publications, Evolution, Journal, Literature, Retinoblastoma, Scientific Literature, Tumors

? Liu, L., Jiao, J.H. and Chen, L. (2011), Bibliometric study of diabetic retinopathy during 2000-2010 by ISI. *International Journal of Ophthalmology*, **4** (4), 333-336.

Full Text: 2011\Int J Oph4, 333.pdf

Abstract: AIM: To analyze the progress in diabetic retinopathy (DR) researches between 2000 and 2010 through bibliometric study. METHODS: Using ISI Web of Science database for statistical sources, we retrieved DR literatures during 2000-2010, analyzed “the number of published articles per year, authors, source publications, subject category, document type, document language, institution and country/region” by bibliometric statistical methods. RESULTS: The total number of published articles that were retrieved for the years during 2000-2010 was 8590. DR researches changed as a linear upward trend, the main researches focused on ophthalmology, endocrine and metabolic diseases. Article was the main document type. Harvard University was the major research institution. CONCLUSION: There has achieved a significant increase in the number of ISI publications and collaborations in DR literatures from 2000 to 2010. With the rising of the number of diabetes in the world, diabetic retinopathy has become a focus of scientific researches.

Keywords: Articles, Author, Authors, Bibliometric, Bibliometric Study, China, Collaborations, Diabetes, Diabetic Retinopathy, ISI, ISI Web of Science, ISI Web of Science Database, Prevalence, Publications, Research, Retinopathy, Science, Statistical, Statistical Methods, Subject Category, Trend, University, Web of Science, Web-of-Science

# Title: International Journal of Oral and Maxillofacial Surgery

Full Journal Title: International Journal of Oral and Maxillofacial Surgery

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lagravere, M.O., Major, P.W. and Flores-Mir, C. (2006), Dental and skeletal changes following surgically assisted rapid maxillary expansion. *International Journal of Oral and Maxillofacial Surgery*, **35** (6), 481-487.

Abstract: The aim of this study was to evaluate skeletal and dental changes after surgically assisted rapid maxillary expansion (SARME). Clinical trials were carried out that assessed skeletal and dental changes through cephalograms, computer tomographs or dental casts. No other simultaneous treatment during the active expansion period was accepted. Electronic databases (PUBMED, MEDLINE, MEDLINE In-Process & Other Non-Indexed Citations, All Evidence-based Medicine Reviews, EMBASE, Web of Science and Lilacs) were searched. Abstracts which appeared to fulfil the selection criteria were selected by consensus. The original articles were then retrieved and evaluated with a methodological checklist. Their references were hand searched for possible missing articles. Only 12 articles fulfilled the selection criteria. All presented methodological flaws. An individual methodological analysis of these articles was made. Expansion was greater at the molars and diminished progressively to the anterior part of the dental arch in all the evaluation periods. Vertical and sagittal skeletal changes were nil or not clinically significant. The nasal portion of the maxillary complex showed an increase in dimensions thereby improving nasal patency. An overall dental relapse of 0.5-1 mm is reported after 1 year of orthodontic treatment. The conclusions should be considered with caution because only a secondary level of evidence was found.

Keywords: Adults, Age, Analysis, Citations, Clinical Trials, Databases, Evaluation, Long-Term Stability, Palatal Expansion, Quality, Rapid Maxillary Expansion, Rapid Palatal Expansion, Science, Surgical, Suture, Treatment, Trials, Web of Science

# Title: International Journal of Osteoarchaeology

Full Journal Title: [International Journal of Osteoarchaeology](http://www3.interscience.wiley.com/journal/5488/home)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mays, S. (2010), Human Osteoarchaeology in the UK 2001-2007: A bibliometric perspective. *International Journal of Osteoarchaeology*, **20** (2), 192-204.

Full Text: [2010\Int J Ost20, 192.pdf](2010/Int%20J%20Ost20,%20192.pdf)

Abstract: Bibliometric analysis of osteoarchaeology publications covering the period 2001-2007 in leading journals was carried out The aims were two-fold firstly, to characterise research in this field in the UK and make comparisons with selected other countries, and secondly, to shed light on the use of skeletal collections It was found that, since a previous survey of this type,covering the period 1991-1995, isotopic and DNA studies have increased In the UK, work on biodistance studies is minor compared with other countries, and the proportion of palaeopathology work is high In palaeopathology, substantial effort continues to be devoted to case studies, particularly in the UK where the frequency of problem-orientated work directed at understanding earlier populations has not increased since the early 1990s Although it is argued that the case study still has a place in osteoarchaeology, the balance of work needs to shift further in favour of population studies, particularly in the UK Skeletal collections are vital for primary osteoarchaeological work, and there was little evidence for any great use of skeletal databases such as the Standard Osteological Database Skeletal collections from the UK were the most used for the research papers analysed, demonstrating the importance of UK-held collections for research that leads to high profile publication in the international scientific literature These observations are pertinent since legal, ethical and practical issues in the treatment of human remains, particularly those connected with retention of skeletal collections. are now coming under closer scrutiny in the UK Copyright (C) 2008 John Wiley & Sons, Ltd.

Keywords: Archaeology, Bibliometric, Bibliometric Analysis, Biodistance, Britain, Burial, Carbon, Case Studies, Database, Databases, Dna, Human Remains, Isotope Analysis, Journals, Literature, Medieval Wharram-Percy, Museum, Palaeopathology, Physical-Anthropology, Primary, Publication, Publications, Reburial, Remains, Research, Research Papers, Retention, Scientific Literature, Skeleton, Treatment, Trends, UK

# Title: International Journal for Parasitology

Full Journal Title: International Journal for Parasitology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lukashenko, N.P. (1971), Problems of epidemiology and prophylaxis of alveococcosis (multilocular echinococcosis): A general review––with particular reference to the U.S.S.R. *International Journal for Parasitology*, **1** (2), 125-134.

Full Text: [I\Int J Par1, 125.pdf](I/Int%20J%20Par1,%20125.pdf)

Abstract: Lukashenko N.P., 1971. Problems of epidemiology and prophylaxis of alveococcosis (multilocular echinococcosis): a general review––with particular reference to the U.S.S.R. *International Journal for Parasitology*, 1: 125–134. *Alveococcus multilocularis* is an extremely dangerous, often fatal, parasite of man. The main endemic areas are southern G.F.R., Austria, Switzerland, northern U.S.A., Canada and Japan. The circulation of *Alveococcus* depends on complex biocenotic relationships between certain carnivores and numerous microtine rodents. Their roles vary widely according to terrain, reproduction, season, epizootics, animals of prey and interspecific rivalry. The infection rate of definitive hosts each year depends on the prevailing numbers of intermediate hosts in the corresponding biotope, and vice versa. The significance of the fox, polar fox, dog fox, wolf and spotted cat as definitive hosts is considered. Twenty-nine species of rodents have been recorded as intermediate hosts but the roles of insectivores appear insignificant, while those of birds and wild ungulates have yet to be studied. Domestic ungulates probably do not take part in the life-cycle of *A. multilocularis*. Domestic cats and dogs may be involved accidentally. The role of synanthropic rodents has not yet been fully elucidated but house mice show a high degree of infectivity. Human infection is influenced by ecological factors, living conditions, occupation and level of hygiene practised: dangerous sources of infection are team dogs, unboiled drinking water from melted ice, the skins of fur animals and possibly insects. Secondary sources are other contaminated waters, dust, wild berries and possibly vegetables. Data on the incidence of alveococcosis according to sex is contradictory; the differences between the infection rates of men and women in different regions almost certainly depend on their several modes of life and occupations. The majority of diseased persons are between 19 and 40 years old; infection probably takes place during childhood and is fatal before old age. Prophylactic measures differ markedly from those for (unilocular) echinococcosis, and must be directed towards eliminating the possibility of infecting definitive hosts and towards increased hygiene education.

Keywords: Epidemiology, Prophylaxis, *Echinococcus Multilocularis*, *Alveococcus Multilocularis*, Echinococcosis, Alveococcosis, U.S.S.R., Distribution

# Title: International Journal of Pediatric Otorhinolaryngology

Full Journal Title: International Journal of Pediatric Otorhinolaryngology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lin, F.R. and Niparko, J.K. (2006), Measuring health-related quality of life after pediatric cochlear implantation: A systematic review. *International Journal of Pediatric Otorhinolaryngology*, **70** (10), 1695-1706.

Full Text: 2006\Int J Ped Oto70, 1695.pdf

Abstract: Objective: The measurement of health-related quality of life (HRQL) in children presents conceptual and methodological challenges owing to the multidimensionality of the required information and limitations in patient self-report. HRQL results provide a broad measure of treatment impact from the patient and family perspective and are crucial to guiding clinical and policy decisions. The objective of this study was to evaluate how HRQL in children with cochlear implants has been measured in published studies in order to draw conclusions that could inform future investigations of this area of clinical research. Methods: We searched PUBMED, EMBASE, CINAHL, PsychoInfo, and Web of Science databases using a defined search string and hand-searched reference lists of relevant articles and personal files. Retrieved citations were reviewed in two stages, a title and abstract screen followed by review of the full-length article. Inclusion criteria for studies were: (1) original peer-reviewed research article; (2) enrolled subjects < 18 years old with cochlear implants; (3) use of a HRQL instrument that incorporated components of physical, mental, and social health; and (4) in English. Data from full-length articles were extracted by a single-investigator. Results: We retrieved 671 citations with our search strategy, and 10 citations were found to be eligible for inclusion. All studies used a cross-sectional design, and three types of HRQL instruments were used: generic questionnaires, ad hoc instruments designed specifically for the purposes of the study, and the parents views and experiences with pediatric Cl questionnaire. Heterogeneity in study design and instruments prevented a quantitative, meta-analysis of the data. Conclusions: Studies that used well-validated, generic HRQL instruments supported conclusions that were less subject to potential bias from the perspective of the clinician investigator. Most studies did not use well-defined cohorts with respect to age at implantation and duration of implant use, and conclusions in these studies were also subject to potential bias. No well-validated, deafness-specific HRQL instruments are currently available. Future research should be done with existing, generic HRQL instruments and with strict study inclusion criteria. Suggested generic HRQL instruments are discussed. (C) 2006 Elsevier Ireland Ltd. All rights reserved.

Keywords: Achievement, Bias, Children, Citations, Clinical Research, Databases, Deaf-Children, Embase, Health-Related Quality of Life, Impact, Implants, Information, Language, Measurement, Meta-Analysis, Methodology, Methods, Outcomes, Outcomes, Parents, Pediatric, Pediatric Cochlear Implantation, Policy, Pubmed, Quality of Life, Quantitative, Questionnaire, Questionnaires, Recipients, Research, Review, Science, Social, State Preferences, Strategy, Systematic, Systematic Review, Technology, Treatment, Web of Science

? Ruben, R.J. (2009), The most cited and requested articles published in the *International Journal of Pediatric Otorhinolaryngology* discussion. *International Journal of Pediatric Otorhinolaryngology*, **73** (4), 513-522.

Full Text: [2009\Int J Ped Oto73, 513.pdf](2009/Int%20J%20Ped%20Oto73,%20513.pdf)

Keywords: Children

? Foltran, F., Gregori, D. and Passali, D. (2011), Foreign bodies inhalation as a research field: What can we learn from a bibliometric perspective over 30 years of literature? *International Journal of Pediatric Otorhinolaryngology*, **75** (5), 721-722.

Full Text: [2011\Int J Ped Oto75, 721.pdf](2011/Int%20J%20Ped%20Oto75,%20721.pdf)

Keywords: Bibliometric, Literature, Research

# Title: International Journal of Pest Management

Full Journal Title: International Journal of Pest Management

ISO Abbreviated Title: Int. J. Pest Manage.

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Journal Country/Territory: England

Language: English

Publisher: Taylor & Francis Ltd

Publisher Address: One Gunpowder Square, London EC4A 3DE, England

Subject Categories:

Agriculture Entomology: Impact Factor

? Meerman, F., Vande Ven, G.W.J., van Keulen, H. and Breman, H. (1996), Integrated crop management: An approach to sustainable agricultural development. *International Journal of Pest Management*, **42** (1), 13-24.

Abstract: In developing countries, agriculture is being intensified to produce more food and agricultural products. In most agricultural development strategies, the order of priorities is on: (i) increasing yields, (ii) crop protection, and (iii) human health, environmental and social aspects. This sequential rather than integrated approach contributes to many problems related to sustainability in agriculture. Examples of increased problems with soil erosion, secondary salinization and waterlogging, soil nutrient depletion, increased pest problems, public health hazards and environmental pollution illustrate this phenomenon. To improve the present situation, agricultural development strategies should be based on an integration of factors determining the agricultural production potential of a particular zone: the biophysical environment, the land reclamation level, and external input use. Integrated Crop Management and systems analyses can help to put these factors in the best perspective, and to set the priorities for agricultural research and development accordingly. Techniques aimed at sustainability are listed, and their use is discussed in areas with different production potentials. To assess the impact of cropping techniques on the sustainability of agricultural production systems, suggestions are made for the monitoring of selected physical, chemical and biotic characteristics of agro-ecosystems.

# Title: International Journal of Pharmaceutics

Full Journal Title: International Journal of Pharmaceutics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chen, Z., Pierre, D., He, H., Tan, S.H., Chuong, P.H., Hong, H. and Huang, J.L. (2011), Adsorption behavior of epirubicin hydrochloride on carboxylated carbon nanotubes. *International Journal of Pharmaceutics*, **405** (1-2), 153-161.

Full Text: [2011\Int J Pha405, 153.pdf](2011/Int%20J%20Pha405,%20153.pdf)

Abstract: The aim of this study was to understand the interaction between carboxylated carbon nanotubes (c-CNTs) and anticancer agents and evaluate the drug-loading ability of c-CNTs. We prepared carboxylated multi-walled carbon nanotubes (c-MWNTs) with nitric acid treatment, then evaluated the adsorption ability of c-MWNTs as adsorbents for loading of the anticancer drug, epirubicin hydrochloride (EPI), and investigated the adsorption behavior of EPI on c-MWNTs. Unmodified multi-walled carbon nanotubes (MWNTs) and single-walled carbon nanotubes (SWNTs) were included as comparative adsorbents. The results showed that carbon nanotubes were able to form supramolecular complexes with EPI via pi-pi stacking and possessed favorable loading properties as drug carriers. The Freundilich adsorption model was successfully employed to describe the adsorption process. Because of the high surface area and hydrogen bonding, c-MWNTs’ adsorption efficiency was the highest and the most stable and their drug-loading capacity was superior to that of MWNTs. With the increase of pH, the adsorption capacity of EPI on the c-MWNTs increased. Low-temperature facilitated the adsorption. More rapid EPI adsorption rate and higher drug-loading ability were observed from c-MWNTs with smaller diameter. Moreover, the adsorption kinetics of EPI on c-MWNTs could be well depicted by using the pseudo-second-order kinetic model. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Carboxylated Carbon Nanotubes, Cells, Doxorubicin, Drug Delivery, Drug-Delivery, Epirubicin Hydrochloride, Functionalization, Immobilization, In-Vitro, Kinetic Model, Kinetics, Organic-Chemicals, pH, Pi-Pi Stacking, Release, Targeted Delivery, Therapeutics

# Title: International Journal of Pharmacology

Full Journal Title: International Journal of Pharmacology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hasani-Ranjbar, S., Vahidi, H., Taslimi, S., Karimi, N., Larijani, B. and Abdollahi, M. (2010), A systematic review on the efficacy of herbal medicines in the management of human drug-induced hyperprolactinemia; potential sources for the development of novel drugs. *International Journal of Pharmacology*, **6** (5), 691-695.

Full Text: [2010\Int J Pha6, 691.pdf](2010/Int%20J%20Pha6,%20691.pdf)

Abstract: Several drugs may increase blood prolactin concentration. Dopamine receptor antagonists are one of the most common causes of hyperprolactinemia. To reduce happening of hyperprolactinemia, some medicinal plants have been traditionally used. This review focuses on the efficacy of effective herbal medicines in the management of human drug-induced hyperprolactinemia. PUBMED, Scopus, Web of science, Cochrane library database were searched for any relevant studies that investigated the effect of herbal medicines on drug induced hyperprolactinemia up to May 2010. The inclusion criteria were clinical trials studied efficacy of herbal medicines in drug-induced hyperprolactinemia. Among different compounds, four herbal supplements including Shakuyalcu-kanzo-to (TJ-68), Peony-Glycyrrhiza Decoction (POD), Zhuangyang capsule, Tongdatang serial recipe (TDT) were found clinically effective and safe in management of drug-induced hyperprolactinemia. Although, the quality of included clinical trials was low not allowing us to conduct a meta-analysis but positive results on efficacy (TJ-68), (POD), Zhuangyang capsule and (TDT) cannot be ignored. Interestingly compounds with prolactin-suppressive effects have a number of diterpenes mainly clerodadienols that seem almost identical for their efficacy. Further studies to isolate and characterize constituents of the effective herbs are needed to reach novel therapeutic and more effective agents.

Keywords: Antipsychotics, Blood, Bromocriptine, Clinical Trials, Cochrane, Diseases, Disorders, Dopamine, Drug, Drugs, Efficacy, Galactorrhea, Herbal Medicine, Human, Hyperprolactinemia, Induced, Management, Meta-Analysis, Neuroleptic, Neuroleptic-Induced Hyperprolactinemia, New Drugs, Olanzapine, Plants, Prolactinoma, Prolactinomas, Pubmed, Review, Risperidone-Induced Hyperprolactinemia, Schizophrenia, Schizophrenic-Patients, Science, Scopus, Shakuyaku-Kanzo-To, Sources, Systematic, Systematic Review, Web of Science

? Nikfar, S., rvish-Damavandi, M. and Abdollahi, M. (2010), A review and meta-analysis of the efficacy of antibiotics and probiotics in management of pouchitis. *International Journal of Pharmacology*, **6** (6), 826-835.

Full Text: [2010\Int J Pha6, 826.pdf](2010/Int%20J%20Pha6,%20826.pdf)

Abstract: Pouchitis is the most frequent long-term complication of Ileal Pouch-Anal Anastomosies (IPAA) surgery for Ulcerative Colitis (UC) which is a nonspecific inflammation of the ileal reservoir. Its clinical frequency varies depending on the definition and the follow up but is approximately 50% after a decade. Antibiotics and probiotics are currently the most widely accepted treatment in pouchitis patients. Objective of this study was to meta-analyze efficacy of probiotics and antibiotics in the management of pouchitis. All databases specially PUBMED, Web of Science, Scopus, Cochrane and Google Scholar were searched between 1965 and December 2009 and relevant controlled clinical trials were extracted, reviewed and validated according to the study protocol. The outcome of interest was defined by a Pouchitis Disease Activity Index (PDAI)<7. Thirteen clinical trials were included in the meta-analysis. Pooling of the results from eight trials yielded a Relative Risk (RR) of 5.33 with a 95% CI of 2.12-13.35 and a significant RR (p = 0.0004) in all kind of probiotics treatment group in comparison with the placebo group. Summary RR for clinical improvement in six trials was 14.17 with a 95% Cl of 1.19-168.93 (p = 0.036) in efficacy of VSL#3 (all doses) comparing to placebo and slightly more effective for VSL#3 (6 g day(-1)) comparing to placebo with RR of 20.35 with a 95% Cl of 6.16-67.22 (p<0.0001). Efficacy of antibiotics comparing to placebo showed a summary RR of 2.68 with a 95% Cl of 0.4-17.99 and p = 0.3107 for clinical improvement in three trials. The summary RR for efficacy of ciprofloxacin comparing to metronidazole was 0.68 with a 95% CI of 0.44-1.06 (p = 0.8913). In conclusion, alongside the benefit of probiotics and antibiotics in the management of pouchitis, effects of probiotics and antibiotics on pouchitis vary according to different mixtures of microorganisms strains in probiotics and different spectrums of antibiotics.

Keywords: Active Ulcerative-Colitis, Anal Anastomosis, Antibiotic, Antibiotics, Clinical Trials, Cochrane, Controlled Clinical Trials, Controlled Clinical-Trials, Crohns-Disease, Databases, Double-Blind, Efficacy, Follow-Up, Frequency, Google Scholar, Interest, Irritable-Bowel-Syndrome, Lactobacillus-Rhamnosus GG, Maintaining Remission, Management, Meta Analysis, Meta-Analysis, Microorganisms, Outcome, Placebo-Controlled Trial, Pouchitis, Probiotic, Probiotics, Protocol, Refractory Pouchitis, Review, Science, Scopus, Surgery, Treatment, Web of Science

? Mohammadirad, A. and Abdollahi, M. (2011), A systematic review on oxidant/antioxidant imbalance in aluminium toxicity. *International Journal of Pharmacology*, **7** (1), 12-21.

Full Text: [2011\Int J Pha7, 12.pdf](2011/Int%20J%20Pha7,%2012.pdf)

Abstract: The purpose of this study was to provide a systematic review on the animal or human evidences linking aluminium (Al) toxicity to oxidant/antioxidant imbalance. Embase, Scopus, Pubmed, Web of Science, Google Scholar and SID databases were searched up to 1st October 2010. Over 50 studies including animal and human linking oxidative stress to Al were reviewed. Most of animal and human studies show a significant increase in lipid peroxidation (LPO) by Al. The maximum LPO was reported in the brain. Data about changes of enzymatic antioxidants such as Superoxide Dismutase (SOD), Catalase (CAT), Glutathione Peroxidase (GPx) post exposure to Al are controversial. Animal studies showed that vitamin E, C, melatonin and pinoline reduce LPO in Al-exposed subjects. Al can affect body oxidant/antioxidant balance in favor of oxidative toxic stress. Among parameters tested in various studies, LPO seems the best indicator of Al toxicity. The role of iron homeostasis in mediation of cytotoxic effects of Al seems important. Since, oxidant/antioxidant imbalance is involved in the pathogenesis of many diseases including inflammatory bowel diseases, diabetes, osteoporosis, it would not be surprising to track roles of Al in many deliberating diseases in future.

Keywords: Aluminium, Alzheimers-Disease, Animal, Balance, Biochemical Parameters, Brain, Controlled Clinical-Trial, Databases, Diabetes, Exposure, Google Scholar, Human, Induced Oxidative Stress, Inflammatory-Bowel-Disease, Iron, Lipid, Mediated Lipid-Peroxidation, Melatonin, Metals, Osteoporosis, Oxidant, Antioxidant Balance, Oxidative Stress, Pathogenesis, Protective Role, Rat-Brain, Reactive Oxygen Species, Review, Science, Scopus, Stress, Superoxide-Dismutase, Systematic, Systematic Review, Toxicity, Vitamin E, Vitamin-E, Web of Science

? Mehri, A., Hasani-Ranjbar, S., Larijani, B. and Abdollahi, M. (2011), A systematic review of efficacy and safety of *Urtica dioica* in the treatment of diabetes. *International Journal of Pharmacology*, **7** (2), 161-170.

Full Text: [2011\Int J Pha7, 161.pdf](2011/Int%20J%20Pha7,%20161.pdf)

Abstract: This review focuses on the efficacy and safety of Urtica dioica which has been utilized in traditional medicine for management of diabetes. All relevant databases including Pubmed, Google Scholar, Web of Science, Scopus, Iranmedex and MD Consult were searched for the terms diabetes mellitus and Urtica dioica without limitation up to 15th September 2010. All the animal studies with the outcome of change in blood glucose or other relevant complications of diabetes and all available abstracts were included. Review articles and letters to the editor were excluded. Search of databases resulted in 724 articles which 87 were potentially relevant studies on Urtica dioica and diabetes. On the basis of inclusion/exclusion criteria, 21 studies were finally included. One human and 20 animal studies were reviewed for the efficacy of Urtica dioica. Most of these studies showed significant decrease in blood glucose and complications of diabetes by use of Urtica dioica. Urtica dioica can affect both pancreatic and extra pancreatic pathways. Available evidences suggest that Urtica dioica can be used to treat diabetes and its long-term complications. Of course, further experiments would help determine exact mechanisms of action, effects and side effects of this herbal medicine.

Keywords: Benign Prostatic Hyperplasia, Blood, Cells, Complications, Databases, Dentate Gyrus, Diabetes, Diabetes Mellitus, Efficacy, Extract, Google Scholar, Herbal Medicine, Human, Management, Mechanisms, Medicinal Plants, Medicinal-Plants, Medicine, Mellitus, Nod Mice, Outcome, Rats, Review, Review Articles, Safety, Science, Scopus, Setarud Imod(TM), Side Effects, Stress, Systematic, Systematic Review, Traditional, Traditional Medicine, Treatment, Urtica Dioica, Web of Science

? Nikfar, S., Ehteshami-Afshar, S. and Abdollahi, M. (2011), A systematic review and meta-analysis of the efficacy and adverse events of infliximab in comparison to corticosteroids and placebo in active ulcerative colitis. *International Journal of Pharmacology*, **7** (3), 325-332.

Full Text: [2011\Int J Pha7, 325.pdf](2011/Int%20J%20Pha7,%20325.pdf)

Abstract: The proinflammatory cytokine tumor necrosis factor alpha (TNF-alpha) plays a major role in severity of Ulcerative Colitis (UC) and thus inhibition of TNF-alpha is used to control severe cases of UC. The present meta-analysis was performed to collect and review all the clinical trials that investigated the efficacy and tolerability of infliximab in order to determine whether infliximab is more effective than placebo or corticosteroids in inducing response and remission in UC. All bibliographic databases such as PubMed, Scopus, Web of Science and Cochrane Central Register of Controlled Trials were searched for studies investigated the efficacy of infliximab for the management of UC. Data were collected from 1966 to September 2010. Three trials represented 57 patients with UC who were randomized to receive infliximab or corticosteroids and 5 trials represented 827 patients with UC who were randomized to receive infliximab or placebo were included in the analysis. The summary Relative Risk (RR) for clinical remission in comparison of infliximab with placebo was 1.93 with a 95% Confidence Interval (CI) of 1.62-2.3 and a significant RR (p<0.0001). Summary RR for adverse events of infliximab comparing to placebo was 1.07 with a 95% CI of 0.99-1.14, a non-significant RR (p = 0.0725). The summary RR for serious adverse events of infliximab comparing to placebo was 0.83 with a 95% CI of 0.44-1.54 as a non-significant RR (p = 0.5472). The summary RR for clinical remission of infliximab comparing to corticosteroids was 1.07 with a 95% CI of 0.87-1.31 as a non-significant RR (p = 0.5353). Patients receiving infliximab were 1.93 and 1.07 times more likely to go to the remission as compared to those receiving placebo and corticosteroids, respectively. Meanwhile, the risk of adverse events in the patients receiving infliximab was 1.07 times more than placebo group. The risk of opportunistic infection was high in patients who have failed steroids and cyclosporine and were using infliximab. Although infliximab is more effective than corticosteroids in inducing clinical remission, we believe further trials are still needed to judge stronger in this respect.

Keywords: Adverse Events, Analysis, Antibiotic-Therapy, Bibliographic, Bibliographic Databases, Clinical Remission, Clinical Response, Clinical Trials, Cochrane, Control, Controlled Clinical-Trials, Corticoseteriod, Corticosteroids, Crohns-Disease, Databases, Efficacy, Infection, Inflammatory-Bowel-Disease, Infliximab, Inhibition, Maintenance, Management, Meta Analysis, Meta-Analysis, Patients, Pouch-Anal Anastomosis, Pubmed, Remission, Review, Risk, Science, Scopus, Serious Adverse Events, Single-Center Cohort, Systematic, Systematic Review, Term-Follow-up, Tumour Necrosis Factor, Ulcerative Colitis, Web of Science

# Title: International Journal of Philosophical Studies

Full Journal Title: International Journal of Philosophical Studies

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Haddad, S. (2006), Reading Derrida reading Derrida: Deconstruction as self-inheritance. *International Journal of Philosophical Studies*, **14** (4), 505-520.

Full Text: [2006\Int J Phi Stu14, 505.pdf](2006/Int%20J%20Phi%20Stu14,%20505.pdf)

Abstract: Derrida argued at great length early on in his career that texts live on in the absence of their author. The question remains, however, of precisely how this survival takes place. In this paper I argue that the life of Derrida’s own oeuvre is sustained through his particular practice of self-inheritance. I justify this claim by focusing on one moment in the text Rogues: Two Essays on Reason, in which Derrida inherits from himself through self-citation. In citing himself while at the same time modifying his citation, Derrida sets into motion a deconstruction of his own text that he does not seem to anticipate. It is this movement of deconstruction that enables Derrida’s text to live on.

Keywords: Author, Authorial Intention, Autoimmunity, Citation, Deconstruction, Inheritance, Jacques Derrida, Self-Citation, Survival

# Title: International Journal of Photoenergy

Full Journal Title: [International Journal of Photoenergy](http://www.hindawi.com/journals/ijp/contents.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Holliman, P.J., Velasco, B.V., Butler, I., Wijdekop, M. and Worsley, D.A. (2008), Studies of dye sensitisation kinetics and sorption isotherms of direct red 23 on Titania. *International Journal of Photoenergy*. Article Number: 827605.

Full Text: [2008\Int J Pho827605.pdf](2008/Int%20J%20Pho827605.pdf)

Abstract: Sorption kinetics and isotherms have been measured for a commercial dye (Direct Red 23) on different samples of powdered Titania, and the data were analysed to better understand the dye sensitization process for dye sensitised solar cells (DSSCs). For the sorption kinetics, the data show rapid initial sorption (<1 hour) followed by slower rate of increasing uptake between 1 and 24 hours. While higher initial concentrations of dye correspond to higher sorption overall, less dye is absorbed from higher initial dye concentrations when considered as percentage uptake. The correlation between the sorption data and model isotherms has been considered with time. The Langmuir model shows better correlations compared to the Freundlich isotherm. The dye uptake data has also been correlated with Titania characterization data (X-ray diffraction, scanning electron microscopy, BET and zero point charge analysis). Kinetic data show significantly better fits to second-order models compared to first order. This suggests that chemisorption is taking place and that the interaction between the dye sorbate and the Titania sorbent involves electron sharing to form an ester bond.

Keywords: Adsorption, Analysis, Bet, Characterization, Charge, Chemisorption, Correlations, Dye, Electron Microscopy, First, First Order, Freundlich, Freundlich Isotherm, Interaction, Isotherm, Isotherms, Kinetic, Kinetics, Kinetics and Sorption, Langmuir, Langmuir Model, Mechanism, Methylene-Blue, Model, Models, Nanocrystalline TiO2, Scanning Electron Microscopy, Second Order, Second-Order, Sensitization, Silica, Solar-Cells, Sorbate, Sorbent, Sorption, Sorption Isotherms, Sorption Kinetics, X-Ray, X-Ray Diffraction, Zero Point Charge

# Title: International Journal of the Physical Sciences

Full Journal Title: [International Journal of the Physical Sciences](http://www.acadjourn.org/IJPS/Archive.htm)

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Subject Categories:

Multidisciplinary Sciences: Impact Factor 0.554, 26/48 (2009); Impact Factor 0.540, 26/59 (2010)

? Hema, M. and Arivoli, S. (2007), Comparative study on the adsorption kinetics and thermodynamics of dyes onto acid activated low cost carbon. *International Journal of the Physical Sciences*, **2** (1), 10-17.

Full Text: [2007\Int J Phy Sci2, 10.pdf](2007/Int%20J%20Phy%20Sci2,%2010.pdf)

Abstract: Batch experiments are carried out for the sorption of Congo red, Malachite green and Rhodamine B dyes onto acid activated carbon. The operating variables studied are initial dye concentration, pH, temperature and contact time. The equilibrium data are fitted to the Langmuir and Freundlich isotherm equations. From these the adsorption efficiency, adsorption energy, adsorption capacity, intensity of adsorption and dimensionless separation factor are calculated. The rate constant value for the adsorption process is calculated. The temperature thermodynamic parameters like Delta G degrees, Delta H degrees, and Delta S degrees are calculated from the effect of temperature. The mechanism of dye adsorption for that dye onto carbon is investigated by using the experimental results.

Keywords: Pandanus Carbon, Congo Red, Malachite Green, Rhodamine B Dyes, Adsorption Isotherms-Langmuir and Freundlich Isotherms, Adsorption Energy, Adsorption Efficiency, Kinetic Studies, Thermodynamic Parameters, Ph Effect, Effect Of Other Ions, Regeneration Pattern, Aqueous-Solutions, Orange Peel, Removal, Equilibrium, Adsorbent

? Venkateswarlu, P., Ratnam, M.V., Rao, D.S. and Rao, M.V. (2007), Removal of chromium from an aqueous solution using *Azadirachta indica* (neem) leaf powder as an adsorbent. *International Journal of the Physical Sciences*, **2** (8), 188-195.

Full Text: [2007\Int J Phy Sci2, 188.pdf](2007/Int%20J%20Phy%20Sci2,%20188.pdf)

Abstract: In the present investigation, Azadirachta indica (neem) leaf powder is used as an adsorbent for the removal of chromium from aqueous solutions. The equilibrium studies are systematically carried out in a batch process, covering various process parameters that include agitation time, adsorbent size and dosage, initial chromium concentration, volume of aqueous solution and pH of the aqueous solution. Adsorption behavior is found to follow Freundlich and Langmuir isotherms. The adsorption mechanism is described by a pseudo second order kinetics.

Keywords: Adsorption, Neem, Chromium, Kinetics, Activated Carbon, Adsorption Properties, Industrial-Waste, Cr(VI), Equilibrium, Kinetics, Sorption, Sawdust, Biomass, Cu(II)

? Hefne, J.A., Mekhemer, W.K., Alandis, N.M., Aldayel, O.A. and Alajyan, T. (2008), Kinetic and thermodynamic study of the adsorption of Pb(II) from aqueous solution to the natural and treated bentonite. *International Journal of the Physical Sciences*, **3** (11), 281-288.

Full Text: [2008\Int J Phy Sci3, 281.pdf](2008/Int%20J%20Phy%20Sci3,%20281.pdf)

Abstract: Lead (Pb) is one of the major environmental pollutants. Adsorption appears to be the most widely used for the removal of heavy metals. The aim of this work is to investigate the adsorption potential of commercial natural bentonite (NB) in the removal of Pb(II) ions from aqueous solution. The effect of different variables, such as, concentration of Pb, mass of NB, pH, time, NB washing and heat treatment and temperature was investigated. The bentonite sample under the heat and washed treatment are labeled as CB and WB respectively. The adsorption experiments were carried out using batch process. The equilibrium time for Pb(II) adsorption on NB was 5 min, the processes conforming to second order kinetics. NB had a much higher adsorption capacity for Pb(II) with the Langmuir monolayer capacity (qm) of 107, 110 and 120 mg g-1 at 293, 313 and 333 K respectively compared to others adsorbents. Thermodynamic parameters such as Delta H degrees, Delta S degrees and Delta G degrees were calculated. The adsorption process was found to be endothermic and spontaneous. The enthalpy change for Pb(II) by NB adsorption has been estimated as 33 kJ mol-1, indicating that the adsorption of Pb(II) by NB corresponds to a physical reaction. The adsorption capacity of washed bentonite WB was very high compared to NB and CB.

Keywords: Adsorption, Bentonite, Cadmium Ions, Clay Minerals, Clay-Minerals, Heavy-Metals, Lead, Lead, Modified Kaolinite, Montmorillonite, Pb(II), Removal, Sorption, Wastewater Treatment, Water

? Alzaydien, A.S. and Manasreh, W. (2009), Equilibrium, kinetic and thermodynamic studies on the adsorption of phenol onto activated phosphate rock. *International Journal of the Physical Sciences*, **4** (4), 172-181.

Full Text: [2009\Int J Phy Sci4, 172.pdf](2009/Int%20J%20Phy%20Sci4,%20172.pdf)

Abstract: Phosphate rock being locally abundant and cheap material in Jordan can be easily activated to become a promising adsorbent for phenol removal from aqueous solution. The phosphate rock before and after activation was characterized using XRD and IR techniques. The effects of various experimental parameters, such as initial phenol concentration, temperature, pH, contact time and adsorbent dose on the adsorption extent were investigated. Langmuir adsorption model was used for the mathematical description of the adsorption equilibrium and the equilibrium data fixed very well with this model. The activated phosphate rock had the monolayer adsorption capacity equal to 38.34 mg/g at pH value of 8.0 and 20°C, adsorption measurements show that the process is very fast and physical in nature. The extent of the phenol removal increased with decrease in the initial concentration of the phenol and temperature of solution. The results showed that as the amount of the adsorbent was increased, the % of phenol removal increased accordingly. Adsorption data were modeled using the pseudo-first and pseudo-second-order kinetic equations, Elovich and intra-particle diffusion models. It was seen that the pseudo-second-order kinetic equation could best describe the sorption kinetics. Thermodynamic parameters showed that the adsorption of phenol on activated phosphate rock was endothermic and spontaneous in nature.

Keywords: Activated Phosphate Rock, Adsorbent, Adsorption, Adsorption Isotherm, Aqueous-Solution, Carbon, Coir Pith, Fly-Ash, Intra-Particle Diffusion, Kinetics Of Adsorption, Langmuir, pH, Phenol, Rate Constants, Removal, Soils, Sorption, Thermodynamic Parameters, Waste-Water

? Aluyor, E.O., Oboh, I.O. and Obahiagbon, K.O. (2009), Equilibrium sorption isotherm for lead (Pb) ions on hydrogen peroxide modified rice hulls. *International Journal of the Physical Sciences*, **4** (8), 423-427.

Full Text: [2009\Int J Phy Sci4, 423.pdf](2009/Int%20J%20Phy%20Sci4,%20423.pdf)

Abstract: Modified rice hulls system for removing Pb(II) from aqueous solutions has been investigated. Rice hulls are agricultural waste product. The experimental condition was the modification of the rice hulls (sorbent) with different concentrations of hydrogen peroxide solution. The experimental results were fitted to the Langmuir and Freundlich isotherms to obtain the characteristic parameters of each model. The Langmuir isotherm was found to well represent the results. The maximum sorption capacities of various concentrations of hydrogen peroxide modified rice hulls were 2.57, 3.15, 5.15, 8.57, 10.97 and 11.88 mg/g for 0.1, 0.3, 0.6, 0.9, 1.2 and 1.5 M hydrogen peroxide solution respectively. It was noted that increasing the concentration for modification resulted in a higher metal uptake per unit weight of the modified rice hulls.

Keywords: Agricultural, Agricultural Waste, Aqueous Solutions, Concentration, Equilibrium, Experimental, Freundlich, Husk Ash, Hydrogen, Hydrogen Peroxide, Ions, Isotherm, Isotherms, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Isotherm, Lead, Metal, Metal Uptake, Metal-Ions, Model, Modification, Modified, Pb, Rice, Rice Hulls, Solution, Solutions, Sorbent, Sorption, Sorption Isotherm, Uptake, Waste

? Ong, S.T., Tay, E.H., Ha, S.T., Lee, W.N. and Keng, P.S. (2009), Equilibrium and continuous flow studies on the sorption of Congo Red using ethylenediamine modified rice hulls. *International Journal of the Physical Sciences*, **4** (11), 683-690.

Full Text: [2009\Int J Phy Sci4, 683.pdf](2009/Int%20J%20Phy%20Sci4,%20683.pdf)

Abstract: The effectiveness of using ethylenediamine rice hulls (EDA-RH) to remove Congo Red (CR) from synthetic dye solution was carried out in batch and column experiments under various experimental conditions. Surface morphology analysis was carried out also using atomic force microscopy (AFM). The experimental data obtained at different initial dye concentrations fitted well to pseudo-second order kinetic model. Application of Langmuir isotherm indicated that maximum sorption capacity of EDA-RH for CR was enhanced by 2-fold as compared to natural rice hulls. Column studies revealed that the breakthrough curves of CR followed the typical S shape of packed-bed systems and it was bed-depth and influent-concentration dependent. The BDST model was used to predict the bed-depth service time data at different bed depths. A plot of BDST at 50% breakthrough yielded a straight line that, however, does not pass through the origin.

Keywords: Adsorption, AFM, Analysis, Aqueous-Solution, Atomic Force Microscopy, Batch, Batch Study, BDST, BDST Model, Breakthrough, Breakthrough Curves, Capacity, Column, Column Experiments, Column Study, Congo Red, Cr, Data, Dye, Effectiveness, Equilibrium, Ethylenediamine, Ethylenediamine Rice Hulls, Experimental, Experiments, Flow, Force, Husk, Isotherm, Kinetic, Kinetic Model, Langmuir, Langmuir Isotherm, Methylene-Blue, Model, Modified, Morphology, Natural, NOV, Origin, Packed Bed, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Reactive Dyes, Removal, Rice, Rice Hulls, Sawdust, Service, Solution, Sorbent, Sorption, Sorption Capacity, Systems

? Ibezim-Ezeani, M.U. and Anusiem, A.C.I. (2010), Kinetic studies of adsorption of palmitate and laurate soaps onto some metal ores in aqueous media. *International Journal of the Physical Sciences*, **5** (1), 62-67.

Full Text: [2010\Int J Phy Sci5, 62.pdf](2010/Int%20J%20Phy%20Sci5,%2062.pdf)

Abstract: The kinetics of adsorption of sodium-palmitate and sodium-laurate onto galena, hematite and cassiterite in aqueous media was investigated at various concentrations, times and temperatures. Experimental results were analysed using the pseudo-first and pseudo-second order kinetic models. The pseudo-first order model with higher correlation coefficient values described the adsorption kinetics better than the pseudo-second order model. The rate constant from the pseudo-first order model [0.109 min-1 for galena, 0.102 min-1 for hematite, 0.085 min-1 for cassiterite (in the sodium-palmitate adsorption) and 0.127 min-1 for galena, 0.109 min-1 for hematite, 0.095 min-1 for cassiterite (in the sodium-laurate adsorption) at 29ºC] show these rates in the order: galena > hematite > cassiterite for the adsorbents; and sodium-laurate > sodium-palmitate for the adsorbates. Some kinetic parameters were computed and the values obtained indicate that the adsorption processes occurred at reasonable rate, low temperature and low energy suggesting physical adsorption as the dominant process.

Keywords: Adsorbents, Adsorption, Adsorption Kinetics, Biosorption, Cadmium(II), Collector Reagent, Correlation, Correlation Coefficient, Energy, Equilibrium, Hematite, Ions, Kinetic, Kinetic Models, Kinetic Parameters, Kinetic Studies, Kinetics, Kinetics of Adsorption, Lead, Low Temperature, Manihot-Sculenta Cranz, Media, Metal, Model, Models, Physical, Pseudo First Order, Pseudo Second Order, Pseudo-First and, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Rate Constant, Rates, Removal, Soap, Sorption, Temperature, Waste Biomass, Zinc(II)

? Ong, S.T., Lee, W.N., Keng, P.S., Lee, S.L., Hung, Y.T. and Ha, S.T. (2010), Equilibrium studies and kinetics mechanism for the removal of basic and reactive dyes in both single and binary systems using EDTA modified rice husk. *International Journal of the Physical Sciences*, **5** (5), 582-595.

Full Text: [2010\Int J Phy Sci5, 582.pdf](2010/Int%20J%20Phy%20Sci5,%20582.pdf)

Abstract: The potential of using ethylenediamine tetraacetic acid modified rice husk (ERH) to remove different types of dyes, namely basic and reactive dyes were studied. Sorption characteristic of ERH showed that it was pH dependent. The kinetics of sorption for both dyes was rapid within the first 60 min regardless of its initial concentration. Using the pseudo-second order kinetics model, the predicted uptakes of Methylene Blue (MB) and Reactive Orange 16 (RO16) agreed closely with experimental values obtained. Three isotherm models were used to fit with equilibrium data, namely Langmuir, Freundlich and BET models. It was found that the equilibrium fitted well in Freundlich isotherm with higher regression coefficient value, R-2. Thermodynamic parameters showed that the sorption of process of MB and RO16 are exothermic and endothermic, respectively. Decrease in sorbent particle size led to an increase in the sorption of dyes. The study revealed that ERH is suitable to use as a single sorbent to remove both MB and RO16 in all systems.

Keywords: Adsorption, Adsorption, Aqueous-Solutions, Bagasse Pith, BET, Binary Mixture System, Biosorption, Concentration, Data, Dyes, EDTA, EDTA Modified Rice Husk, Endothermic, Equilibrium, Equilibrium Studies, Ethylenediamine, Exothermic, Experimental, First, Freundlich, Freundlich Isotherm, Hull, Isotherm, Kinetics, Kinetics Model, Langmuir, Mb, Mechanism, Metal-Ions, Methylene Blue, Methylene-Blue, Model, Models, Modified, Particle Size, pH, pH-Dependent, Potential, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Reactive Dyes, Reactive Orange 16, Regression, Removal, Rice, Rice Husk, Rice-Husk, Size, Sorbent, Sorption, Systems, Thermodynamic, Thermodynamic Parameters, Value, Waste-Water, Wheat Bran

? Ong, S.T., Keng, P.S., Lee, S.L., Leong, M.H. and Hung, Y.T. (2010), Equilibrium studies for the removal of basic dye by sunflower seed husk (*Helianthus annuus*). *International Journal of the Physical Sciences*, **5** (8), 1270-1276.

Full Text: [2010\Int J Phy Sci5, 1270.pdf](2010/Int%20J%20Phy%20Sci5,%201270.pdf)

Abstract: The sorption characteristics of sunflower (*Helianthus annuus*) seed husk (SSH) to remove Methylene Blue (MB) from aqueous solution under batch conditions have been investigated. Sorption of MB was found to be pH, concentration and agitation dependent. The kinetics of sorption was rapid with 80% sorption taking place within the first 60 min regardless of its initial concentration. The fast attainment of equilibrium implying the biosorbent could be suitable for continuous flow system. Using the pseudo-second order kinetics model, the predictive model for MB sorbed at time t (q(t)) with the initial concentration of (C-o) is given by q(t) = C(o)t/[0.0607C(o) + 2.0762 + (0.0012C(o) + 5.1949) t]. Results indicated that the predicted uptakes of MB agreed closely with experimental values obtained. The experimental data fitted well to Langmuir isotherm model with the correlation coefficient of 0.9860 and maximum monolayer sorption capacity of 45.25 mg/g.

Keywords: Adsorbent, Adsorption, Agitation, Aqueous Solution, Aqueous-Solution, Basic Dye, Batch, Biosorbent, Capacity, Characteristics, Co, Concentration, Correlation, Correlation Coefficient, Data, Dye, Equilibrium, Equilibrium Studies, Experimental, First, Flow, Isotherm, Isotherm Model, Kinetics, Kinetics, Kinetics Model, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Mb, Methylene Blue, Methylene-Blue, Model, Modelling, Monolayer, Ph, Predictive, Predictive Model, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Removal, Sawdust, Solution, Sorption, Sorption, Sorption Capacity, Sunflower Seed Husk, T, Waste

# Title: International Journal of Phytoremediation

Full Journal Title: [International Journal of Phytoremediation](http://www.informaworld.com/smpp/title~content=t713610150~link=cover)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rai, P.K. (2008), Heavy metal pollution in aquatic ecosystems and its phytoremediation using wetland plants: An ecosustainable approach. *International Journal of Phytoremediation*, **10** (2), 133-160.

Full Text: [2008\Int J Phy10, 133.pdf](2008/Int%20J%20Phy10,%20133.pdf)

Abstract: This review addresses the global problem of heavymetal pollution originating from increased industrialization and urbanization and its amelioration by using wetland plants both in a microcosm as well as natural/field condition. Heavymetal contamination in aquatic ecosystems due to discharge of industrial effluents may pose a serious threat to human health. Alkaline precipitation, ion exchange columns, electrochemical removal, filtration, and membrane technologies are the currently available technologies for heavy metal removal. These conventional technologies are not economical and may produce adverse impacts on aquatic ecosystems. Phytoremediation of metals is a cost-effective “green” technology based on the use of specially selected metal-accumulating plants to remove toxic metals from soils and water. Wetland plants are important tools for heavy metal removal. The Ramsar convention, one of the earlier modern global conservation treaties, was adopted at Ramsar, Iran, in 1971 and became effective in 1975. This convention emphasized the wise use of wetlands and their resources. This review mentions salient features of wetland ecosystems, their vegetation component, and the pros and cons involved in heavy metal removal. Wetland plants are preferred over other bio-agents due to their low cost, frequent abundance in aquatic ecosystems, and easy handling. The extensive rhizosphere of wetland plants provides an enriched culture zone for the microbes involved in degradation. The wetland sediment zone provides reducing conditions that are conducive to the metal removal pathway. Constructed wetlands proved to be effective for the abatement of heavymetal pollution from acid mine drainage; landfill leachate; thermal power; and municipal, agricultural, refinery, and chlor-alkali effluent. the physicochemical properties of wetlands provide many positive attributes for remediating heavy metals. Typha, Phragmites, Eichhornia, Azolla, Lemna, and other aquatic macrophytes are some of the potent wetland plants for heavy metal removal. Biomass disposal problem and seasonal growth of aquatic macrophytes are some limitations in the transfer of phytoremediation technology from the laboratory to the field. However, the disposed biomass of macrophytes may be used for various fruitful applications. An ecosustainable model has been developed through the author’s various works, which may ameliorate some of the limitations. The creation of more areas for phytoremediation may also aid in wetlands conservation. Genetic engineering and biodiversity prospecting of endangered wetland plants are important future prospects in this regard.

Keywords: Heavy Metals, Constructed Wetland, Phytoremediation, Biodiversity Prospecting, Genetic Engineering, Coal Mine, Waste-Water Treatment, Acid-Mine Drainage, Mississippi River-Basin, Trin. EX Steudel, Constructed Wetlands, Phragmites-Australis, Trace-Metals, Submersed Macrophytes, Industrial Effluents, Artificial Wetlands

? Doshi, H., Ray, A. and Kothari, I.L. (2008), Bioremediation potential of *Chlorella*: Spectroscopic, kinetics, and SEM studies. *International Journal of Phytoremediation*, **10** (4), 264-277.

Full Text: [2008\Int J Phy10, 264.pdf](2008/Int%20J%20Phy10,%20264.pdf)

Abstract: A dead dried alga, Chlorella sp., was used for the uptake of Cr+3, Cr2O7-2, Cu+2, and Ni+2 from the aqueous solutions of these metal ions. The equilibrium data were fitted using the Langmuir and Freundlich isotherm model and the maximum uptakes for Cr+3, Cr2O7-2, Ni+2, and Cu+2 were 98, 104, 108, and 183 mg/g, respectively. The Freundlich model, in comparison to the Langmuir model, better represented the sorption process. The kinetics of metal ions uptake by Chlorella sp. was best described by a pseudo-second order rate equation. Infrared spectroscopic data were employed to identify the site(s) of bonding in Chlorella sp. A scanning electron microscopic (SEM) study of pure dead Chlorella sp. and the species treated with different metal ions provided an idea of the extent of metal uptake by this species. The dead Chlorella sp took up maximum Cu(II). The size of the cell of the metal-treated Chlorella sp. obtained from SEM data is in agreement with the extent of metal uptake.

Keywords: Aqueous Solutions, Aqueous-Solution, Biosorption, Biosorption, Carbon, Chlorella sp., Chromium, Comparison, Copper, Cu(II), Equilibrium, Freundlich, Freundlich Isotherm, Freundlich Model, Infrared (IR), Isotherm, Isotherm Model, Kinetics, Langmuir, Langmuir Model, Metal, Metal Ions, Metal Uptake, Metals, Model, Nickel, Potential, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Scanning Electron Microscopic (SEM), SEM, Size, Sorption, Sorption Process

# Title: International Journal of Plant Sciences

Full Journal Title: International Journal of Plant Sciences

ISO Abbreviated Title: Int. J. Plant Sci.

JCR Abbreviated Title: Int J Plant Sci

ISSN: 1058-5893

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Univ Chicago Press

Publisher Address: 1427 E 60th St, Chicago, IL 60637-2954

Subject Categories:

Plant Sciences: Impact Factor 1.524, / (2001)

Tidwell, W.D. and Hebbert, N. (1992), Species of the cretaceous tree fern Tempskya from Utah. *International Journal of Plant Sciences*, **153** (3), 513-528.

Abstract: Nine species of the permineralized stems of Tempskya were investigated from the upper Lower Cretaceous Cedar Mountain and Burro Canyon Formations, and the lower Upper Cretaceous Dakota Formation in central and southeastern Utah. Tempskya jonesii, T. stichkae, and T readii are new and are differentiated on the basis of the radial orientation of their dorsiventral stems, their internodal lengths, the lack of sclerenchyma in the inner cortex of T. jonesii, the three nearly continuous zones of sclerenchyma in the inner cortex of T. stichkae, and the completely sclerotic inner cortex of T. readii. Specimens of T. jonesii and T. minor were collected in growth position near Castle Dale, Utah, which is the first time Tempskya has been collected in this position in North America. Thin leaves were also observed for the first time in Tempskya in specimens of T. wyomingense. Tunnels containing three sizes of fecal pellets are common in tissues of stems, roots, petioles, and epidermal hairs of the false trunks of Tempskya, indicating that three different grazers fed upon these plants. Arbuscules of vesicular-arbuscular (V-A) mycorrhizal fungi occur in some roots of the false trunks of T. jonesii. Specific characters of Tempskya and possible environmental circumstances under which these plants grew are reviewed, and we conclude that they grew under relatively humid conditions in swamps on flood plains.

Keywords: Cedar Mountain Formation, Colorado, Flora

# Title: International Journal of Plant Sciences

Full Journal Title: International Journal of Plant Sciences

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Plant Sciences: Impact Factor

? Hafez, H.S., Ali, A.E.H. and Abdel-Mottaleb, M.S.A. (2005), Photocatalytic efficiency of titanium dioxide immobilized on PVP/AAc hydrogel membranes: A comparative study for safe disposal of wastewater of Remazol Red RB-133 textile dye. *International Journal of Plant Sciences*, **7** (4), 181-185.

Abstract: The paper reports on the photocatalytic efficiency of TiO2 nanoparticles immobilized on polyvinyl pyrrolidone/acrylic acid (PVP/ AAc) copolymer hydrogels, which are prepared by means of gamma- rays induced homo- and copolymerization. The efficiency of immobilized photocatalyst is tested on a commercial textile dye namely Remazol Red RB- 133. The results are compared with photocatalytic efficiencies of different types of non supported TiO2 photocatalysts such as aqueous slurries of colloidal TiO2 prepared by sol- gel technique, and commercially available Degussa P25. Although less efficient than nonsupported ones, the hydrogel supported TiO2 photocatalyst has the practical advantages of easy separation and removal from the reactors. This makes it a viable technique for the safe disposal of textile wastewater into the water streams.

Keywords: TiO2 Thin-Films, Degradation, Adsorption, Removal, Ions, Acid

# Title: International Journal of Primatology

Full Journal Title: International Journal of Primatology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0164-0291

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Cooney, D.O. and Struhsaker, T.T. (1997), Adsorptive capacity of charcoals eaten by Zanzibar red colobus monkeys: Implications for reducing dietary toxins. *International Journal of Primatology*, **18** (2), 235-246.

Abstract: Colobus monkeys on the African island of Zanzibar eat charcoal from burned trees and lying near kilns, where if is produced for cooking. This behavior may be a learned response for counteracting toxicity due to phenolic and similar compounds that occur in significant concentrations in the Indian almond (Terminalia catappa) leaves and mango (Mangifera indica) leaves which constitute a major part of their diet. Accordingly, we studied the adsorption of organic materials from hot water extracts of Indian almond and mango leaves by five charcoals collected in Zanzibar For comparison, we also evaluated three commercial powdered activated charcoals. Three African charcoals collected at kilns adsorbed more organic material than two kinds collected from burned tree stumps. The commercial activated charcoals adsorbed the organic material best, as expected, yet the African kiln charcoals adsorbed surprisingly well. Thus, the hypothesized function of charcoal eating is supported.

Keywords: Procolobus Kirkii, Charcoal, Feeding, Adsorption, Phenolics

# Title: International Journal of Production Economics

Full Journal Title: [International Journal of Production Economics](http://www.sciencedirect.com/science/journal/09255273)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hsieh, P.N. and Chang, P.L. (2009), An assessment of world-wide research productivity in production and operations management. *International Journal of Production Economics*, **120** (2), 540-551.

Full Text: [2009\Int J Pro Eco120, 540.pdf](2009/Int%20J%20Pro%20Eco120,%20540.pdf)

Abstract: Journal publications are important to facilitate knowledge sharing among production and operations management (POM) academics and practitioners. The purpose of this study was to explore the global POM research performance based on papers published in 20 core POM journals in the past half century. The data for the study were obtained from Thomson Reuters’ Web of Science/Knowledge databases, from 1959 to 2008, when 63,776 papers were published in POM journals. The annual distribution of papers published shows a significant growth in POM research productivity over the time period 1959 to 2008. The most productive authors in these five decades were T.C. Edwin Cheng from The Hong Kong Polytechnic University, Hong Kong; Gilbert Laporte from HEC Montreal, Canada; S.K. Goyal from Concordia University, Canada; S. Eilon from the University of London, UK; and Oded Berman from the University of Toronto, Canada. The five most productive institutions were as follows: Massachusetts Institute of Technology, Georgia Institute of Technology, Columbia University, Purdue University, and the University of Michigan. The countries found to have the highest outputs were the USA, the UK, Canada, the Netherlands and Taiwan. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Assessment, Bibliometric Analysis, Bibliometric Distributions, Business-Research, Finance Literature, Future-Research, Institutional Research Productivity, Journals, Knowledge, Management, Patterns, POM Research, Production and Operations Management, Publications, Research, Research Output, Research Productivity, Retail Supply Chains, Scientific Productivity, UK, University

? Hsieh, P.N. (2010), Addendum to “an assessment of world-wide research productivity in production and operations management”. *International Journal of Production Economics*, **125** (2), 335-338.

Full Text: [2010\Int J Pro Eco125, 335.pdf](2010/Int%20J%20Pro%20Eco125,%20335.pdf)

Abstract: This note updates some results in Hsieh and Chang (2009) in view of the fact that there had been title changes for four of the 20 core POM journals surveyed.

Keywords: Assessment, Bibliometric Analysis, Core, Journals, Management, Production and Operations Management, Productivity, Research, Research Productivity, Scientific Productivity

# Title: International Journal of Production Research

Full Journal Title: International Journal of Production Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Irani, Z., Gunasekaran, A. and Dwivedi, Y.K. (2010), Radio frequency identification (RFID): Research trends and framework. *International Journal of Production Research*, **48** (9), 2485-2511.

Full Text: [2010\Int J Pro Res48, 2485.pdf](2010/Int%20J%20Pro%20Res48,%202485.pdf)

Abstract: With the rapidly decreasing price of the RFID tag, its adoption and utilisation is increasing swiftly in various contexts including organisations for supply chain management, hospitals for various types of uses and other public sector organisations. Inline with its rapid adoption, researchers from various academic fields are investigating development and management related issues. Nowadays, RFID is popularly known as a technology for the automatic identification by radio frequency of physical objects and people. Therefore, a large number of studies have appeared but scattered in a number of unrelated publishing outlets which may hamper the use of such published resources. This provided us with motivation to analyse the existing research for categorising and synthesising it in a meaningful manner. Hence, the aim of this paper is to provide a comprehensive and systematic survey of the literature pertaining to RFID related research issues in order to ascertain the current ‘state of play’ of the field along a number of dimensions. The following research objectives were proposed to achieve the stated aim: (1) to analyse the distribution/ trends of RFID research across subject category, source titles (journals), geographical locations, document types and year of publications; (2) to determine the frequently published authors and productive institutions for conducting RFID related research; (3) to explore the trend of topics/research issues and utilised methods; and finally (4) to synthesise the existing research to develop a research model/framework that reflects current status and trends of RFID research and may guide the practitioner for implementing and managing RFID applications in both public and private sectors. Information on a series of variables were extracted after conducting a review of 666 articles on RFID related issues, published in various source titles/journals from different subject categories (such as operations management, and information systems) between 1984 and 2007. Results of this research may have implications for both private and public sector organisations interested in implementing RFID, researchers, journal editors, reviewers and universities.

Keywords: Adoption, Applications, Articles, Bibliometric Analysis, Empirical-Research, Enterprise, Information Systems, Information-Systems, Journal, Journals, Keyword Classification Scheme, Literature, Logistics Control, Meta-Analysis, Metaanalysis, Methods, Operations Management, Publications, Publishing, Radio Frequency Identification, Radio Frequency Identification (RFID), Research, Research Issues, Research Method, Research Trends, Researchers, Review, RFID, State, Supply-Chain Management, Technology, Technology Acceptance Model, Trends, Universities

# Title: International Journal of Project Management

Full Journal Title: [International Journal of Project Management](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=02637863)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Betts, M. and Lansley, P. (1995), *International Journal of Project Management*: A review of the first ten years. *International Journal of Project Management*, **13** (4), 207-217.

Full Text: [1995\Int J Pro Man13, 207.pdf](1995/Int%20J%20Pro%20Man13,%20207.pdf)

Abstract: The management of projects within various industrial sectors is an internationally recognised professional discipline which enjoys support from a small but growing community of researchers, scholars and enquiring practitioners. Specialist academic and professional journals which serve the field are relatively new. One of the prime journals, the *International Journal of Project Management*, celebrated ten years of continuous publication in 1992. In the ten years since its inception, the *International Journal of Project Management* has reached a level of stability in terms of the numbers of papers it publishes. Its papers predominantly review practical experience and literature. Some case studies have been published, but relatively few published papers have been based on empirical data. Most of the papers contribute interesting insights and describe new techniques, but few have contributed to the more formal aspects of the development of the discipline of project management by building and testing models and theories. The papers address a broad range of aspects of project management in an increasingly wide variety of industrial sectors, although the construction industry remains predominant. The journal attracts papers from practitioners and academics from various types of department, in both cases from many parts of the world. The journal has achieved a great deal in providing a forum for scholarly insights and debate about project management. However, progress has been less dramatic in terms of the development of the underlying theoretical basis of project management. Given that no other journals appear to fulfil this role, the paper concludes by speculating on the future development of project management as a discipline.

Keywords: Bibliometrics, Research Trends, Discipline Reviews, Meta-Analysis

? Artto, K.A. and Wikström, K. (2005), What is project business? *International Journal of Project Management*, **23** (5), 343-353.

Full Text: [2005\Int J Pro Man23, 343.pdf](2005/Int%20J%20Pro%20Man23,%20343.pdf)

Abstract: This article defines project business and employs a bibliometric study for considering the relevant characteristics of this concept. The motivation for this study is the shallow definition of project business in contemporary project studies. Furthermore, there is no overview on such relevant academic business sources that the project business concept would be built on. The research methodology utilises a bibliometric study of the most cited business journals. The bibliometric study results in key sources that can be considered as one scientific foundation for project business. However, this research goes beyond an ordinary bibliometric study, as the key sources were read and their content was carefully analysed. In this analysis, we constructed eleven article clusters, whilst simultaneously building up an understanding of the interrelatedness between articles and article clusters. The analysis results in seven findings that explore project business. The findings indicate that there is a need for several theoretical foundations: organisation theory, innovation theories, sociological and psychometric theories. Furthermore, in the future, there may be a need for a stronger body of strategy research. The analysis results in a definition of project business. According to this definition, the unit of analysis is a firm rather than a project. The firm and its business are in a focal role, whereas projects may be secondary. The findings, project business definition, and related reasoning contribute to new knowledge about the characteristics of project business. This knowledge is also relevant for further theory building and for developing novel managerial applications in business.

Keywords: Project Business, Project, Business, Firm

? Artto, K., Martinsuo, M., Gemundne, H.G. and Murtoaro, J. (2009), Foundations of program management: A bibliometric view. *International Journal of Project Management*, **27** (1), 1-18.

Full Text: [2009\Int J Pro Man27, 1.pdf](2009/Int%20J%20Pro%20Man27,%201.pdf)

Abstract: Are programs just scale-ups of projects, or do they represent something unique? Recent articles stress the difference of project and program management, but do neither show consensus nor precise definitions of program management. Our comparative bibliometric study of 517 program articles and 1164 project articles published in the last 21 years in leading scientific business journals identifies similarities and differences in theoretical foundations, indicated by the sources cited, and themes, indicated by the keywords. We show that programs have several theoretical bases, such as organizational theories, strategy, product development, manufacturing and change. Programs take an open system view and seek change in permanent organizations. Projects, in turn, have product development as the dominant theory basis. We elaborate eleven distinctive characteristics of program and project management research. Our study proposes themes upon which future theories and empirical studies of programs can be established. (c) 2007 Elsevier Ltd and IPMA. All rights reserved.

Keywords: Bibliometric, Bibliometric Study, Development, Journals, Management, Program Management, Project Implementation, Project Management, Research, System, Theory

# Title: International Journal of Prosthodontics

Full Journal Title: International Journal of Prosthodontics

ISO Abbreviated Title: Int. J. Prosthodont.

JCR Abbreviated Title: Int J Prosthodont

ISSN: 0893-2174

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Quintessence Publ Co Inc

Publisher Address: 551 North Kimberly DR, Carol Stream, IL 60188-1881

Subject Categories:

Dentistry, Oral Surgery & Medicine: Impact Factor 0.985, / (2001)

? Al Hiyasat, A.S., Saunders, W.P., Sharkey, S.W., Smith, G.M. and Gilmour, W.H. (1997), The abrasive effect of glazed, unglazed, and polished porcelain on the wear of human enamel, and the influence of carbonated soft drinks on the rate of wear. *International Journal of Prosthodontics*, **10** (3), 269-282.

Abstract: The abrasive effect of various porcelain surfaces on human enamel was studied in vitro. Sixty pairs of tooth-porcelain specimens were tested under a standard load and rate in distilled water and with and without intermittent exposure to a carbonated beverage. The amount of wear of enamel and porcelain specimens was determined after 5,000, 15,000, and 25,000 cycles. After 25,000 cycles there was no significant difference in the enamel wear between glazed and polished groups, but wear produced by the unglazed groups was significantly higher (P<.05). Overall, exposure to a carbonated beverage significantly increased the amount of enamel wear produced by all porcelain surfaces (P<.001). The finish of the porcelain surface did not influence its wear.

Keywords: Restorative Materials, Dental Erosion, Surfaces, Machine, Invitro, Gold

? Smith, G.C.S. and Pell, J.P. (2006), Parachute use to prevent death and major trauma related to gravitational challenge: Systematic review of randomised controlled trials. *International Journal of Prosthodontics*, **19** (2), 126-128.

Abstract: Objectives: To determine whether parachutes are effective in preventing major trauma related to gravitational challenge. Design Systematic review of randomised controlled trials. Data Sources: MEDLINE, Web of Science, EMBASE, and the Cochrane Library databases; appropriate internet sites and citation lists. Study Selection: Studies showing the effects of using a parachute during free fall. Main Outcome Measure: Death or major trauma, defined as an injury severity score > 15. Results: We were unable to identify any randomised controlled trials of parachute intervention. Conclusions: As with many interventions intended to prevent ill health, the effectiveness of parachutes has not been subjected to rigorous evaluation by using randomised controlled trials. Advocates of evidence based medicine have criticised the adoption of interventions evaluated by using only observational data. We think that everyone might benefit if the most radical protagonists of evidence based medicine organised and participated in a double blind, randomised, placebo controlled, crossover trial of the parachute.

Keywords: Citation, Cochrane, Databases, Effectiveness, Evaluation, Injuries, Injury, Intervention, Interventions, Medicine, Quality, Review, Science, Sources, Systematic, Systematic Review, Trauma, Web of Science

? Kroeplin, B.S. and Strub, J.R. (2011), Implant dentistry curriculum in undergraduate education: Part 1-A literature review. *International Journal of Prosthodontics*, **24** (3), 221-234.

Abstract: Purpose: The aim of this literature review was to evaluate to what extent oral implant dentistry was integrated into undergraduate educational programs worldwide. Materials and Methods: An online search of PUBMED (MEDLINE and additional life science journals) was performed for articles published from 1966 to January 2010 using combinations of select medical subject headings. Additionally, the ISI Web of Knowledge database (MEDLINE: 1950 to present, Web of Science: 1945 to present) was searched using “education” and “implant” as search terms. The online search was supplemented with a manual search of dental journals in the fields of education, prosthodontics, and implant dentistry and of the reference lists of selected full-text articles. Surveys comparing different undergraduate dental implant curricula and articles describing the undergraduate dental implant curriculum of a single university were identified. Postgraduate or continuing education programs for dental practitioners or master and specialist programs were excluded. Results: Twenty-five articles met the inclusion criteria of this review. The percentage of universities that included implant dentistry in undergraduate education increased from 51% in 1974 to 97% in 2006 for universities in the United States and to 100% for surveyed European universities. All curricula included lectures (mostly 1 to 20 hours) and 30% to 42% included laboratory courses, but the level of clinical experience differed greatly between surveyed universities. Conclusion: Because oral implant dentistry has become a standard treatment alternative, the undergraduate dental curricula should include its application in treatment planning, observation of placing and restoring implants, and treating patients with implant-retained or -supported restorations. Int J Prosthodont 2011;24.221-234.

Keywords: Complication Rates, Continuing Education, Dental Education, Education, Implants, ISI, Journals, Knowledge, Least 5 Years, Literature, Literature Review, Medical, Medline, Methods, Observation, Observation Period, Partial Dentures Fpds, Program, Pubmed, Review, Schools, Science, Survival, Treatment, United-Kingdom, University, Web of Knowledge, Web of Science

# Title: International Journal of Psychiatry in Medicine

Full Journal Title: International Journal of Psychiatry in Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schaefer, F.C., Blazer, D.G. and Koenig, H.G. (2008), Religious and spiritual factors and the consequences of trauma: A review and model of the interrelationship. *International Journal of Psychiatry in Medicine*, **38** (4), 507-524.

Abstract: Objective: An increasing body of literature examines the association of religious factors with posttraumatic stress as well as posttraumatic growth. This review of selected empirical studies describes religious and spiritual factors that have been examined in their association with the consequences of trauma. A comprehensive model is proposed to explain the complex interrelationship. Method: We performed a qualitative review of empirical research in August 2006, updated in February 2008, using MEDLINE (1950-present), PsychInfo (1806-present), Web of Science (1900-present), and PILOTS (1960-present). We searched the terms posttraumatic, posttraumatic stress, posttraumatic growth, and religion, religious, spirituality, spiritual, meditation, and forgiveness. Based on supporting data from reviewed literature, we then developed a model for key religious factors derived from this review predictive of the response to trauma over time. Results: Twenty-three studies were identified that describe religious pre-trauma characteristics, religious trauma-appraisal and post-trauma adjustment factors. The association of these factors with posttraumatic stress and growth is described. Conclusions: Intrinsic religious orientation, in particular, appears to be a useful construct in measuring religiosity in the association with the consequences of trauma. There are preliminary indications that the association between intrinsic religiosity and the consequences of trauma may change depending on the time after the event. Future studies should stratify outcome by the time after trauma or use longitudinal designs.

Keywords: African-American Women, Community Survey, Events, Growth, Intrinsic Religiosity, Literature, Model, Outcome, Posttraumatic Growth, Posttraumatic Stress, Posttraumatic-Stress-Disorder, Religion, Research, Resilience, Review, Science, Social Support, Spirituality, Stress, Survivors, Symptoms, Trauma, Violent Trauma, Web of Science

# Title: International Journal of Psychology

Full Journal Title: International Journal of Psychology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Saiz, D. and Saiz, M. (1992), A bibliometric approximation to contemporary catalan psychology. *International Journal of Psychology*, **27** (3-4), 532-533.

Full Text: 1992\Int J Psy27, 523.pdf

Keywords: Bibliometric

? Cumming, G., Siddle, D. and Hyslop, W. (1997), Psychological science in Australia. *International Journal of Psychology*, **32** (6), 409-424.

Full Text: [1997\Int J Psy32, 409.pdf](1997/Int%20J%20Psy32,%20409.pdf)

Abstract: This paper is a brief account of the Australian Strategic Review of the Psychology Discipline and its Research. Issues discussed include Australia’s contribution to world research in psychological science, research funding, the age and qualifications of researchers, the social and economic benefits arising from the applications of research outcomes, multidisciplinary issues, the role of psychology in industry, links between the discipline and the profession of psychology, professional training, cross-cultural issues, and educational issues. Priorities for development of research and postgraduate training are identified, and include human factors and other areas related to technological change, clinical psychology with particular attention to health psychology, industrial and organizational psychology, and neuroscience and physiological psychology. Cet article est un expose succinct de la << Revue strategique australienne de la psychologie en tant que discipline et domaine de recherché >>. Parmi les questions abordees se trouvent la contribution australienne a la recherche mondiale en psychologie, le financement de cette recherche, l’age et les qualifications des chercheurs, les benefices sociaux et economiques qui resultent de l’application des resultats de recherche, les aspects multidisciplinaires, le role de la psychologie dans l’industrie, les liens entre la discipline et la profession, la formation professionelle, les dimensions multiculturelles, et les problemes relies a l’enseignement. Les priorites dans le developpement de la recherche et da la formation postgradues sont identifies, parmi lesquelles sont incluses l’ergonomie et autres domaines associes aux changements technologiques, la psychologie clinique (surtout la psychologie de la sante), la psychologie industrielle et organisationelle, les neurosciences et la psychophysiologie.

? Anseel, F. and Duyck, W. (2004), The effect of self-citing on impact factors of psychology journals. *International Journal of Psychology*, **39** (5-6), 19.

Full Text: 2004\Int J Psy39, 19.pdf

Multidisciplinary research has shown that self-citations influence journal impact factors. Unfortunately, little is known about self-citing in psychology journals. The current study found that high impact journals received proportionally less self-citations compared to middle and low impact journals. Adjusting for self-citations, impact factors of high impact journals dropped by 15%, whereas impact factors of middle and low impact journals dropped by 35% and 45% respectively. Thus, the impact factors of high impact journals are actually underestimated relative to middle and low impact journals. Implications for rankings of psychology journals are discussed.

Keywords: Journals

# Title: International Journal of Psychophysiology

Full Journal Title: [International Journal of Psychophysiology](http://www.sciencedirect.com/science/journal/01678760)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: TTopic

? Bandettini, P. (2007), Functional MRI today. *International Journal of Psychophysiology*, **63** (2), 138-145.

Full Text: [2007\Int J Psy63, 138.pdf](2007/Int%20J%20Psy63,%20138.pdf)

Abstract: Most brain imaging researchers would agree with the assertion that functional MRI (fMRI) is progressing. Since fMRI began in 1991, the number of people, papers, and abstracts related to fMRI has been increasing; the technology and methodology has shown advances in robustness and sophistication; the physiology of the signal is better understood; and, even though it hasn’t yet made significant headway into the clinical setting, applications are widening. Questions that stem from this optimistic and perhaps overly general set of observations include those that ask what the ultimate theoretical and practical limits of fMRI are and how close are we to approaching these limits. In this commentary, I attempt to provide a snapshot of fMRI as it exists at the end of 2005, and to give a clear impression that not only are we progressing by “dotting the i’s and crossing the t’s” but that fundamental changes in fMRI methodology and processing are being put forth as the field matures. Published by Elsevier B.V.

Keywords: Advances, Brain, Changes, Clinical, Crossing, Field, General, Methodology, MRI, Papers, Physiology, Robustness, Technology

# Title: International Journal of Public Health

Full Journal Title: International Journal of Public Health

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Goodman, P.G., Haw, S., Kabir, Z. and Clancy, L. (2009), Are there health benefits associated with comprehensive smoke-free laws. *International Journal of Public Health*, **54** (6), 367-378.

Abstract: In the past few years, comprehensive smoke-free laws that prohibit smoking in all workplaces have been introduced in many jurisdictions in the US, Canada, and Europe. In this paper, we review published studies to ascertain if there is any evidence of health benefits resulting from the implementation of these laws. All papers relating to smoke-free legislation published in or after 2004 were considered for inclusion in this review. We used PUBMED, Google scholar, and Web of Science as the main search tools. The primary focus of the paper is on health outcomes, and thus many papers that only report exposure data are not included. Studies using subjective measures of respiratory health based on questionnaire data alone consistently reported that workers experience fewer respiratory and irritant symptoms following the introduction of smoke-free laws. Some studies also found measured improvements in the lung function of workers. However, the most dramatic health outcome associated with smoke-free laws has been the reduction in myocardial infarction in the general population. This outcome has been observed in the US, Canada, and Europe, with studies reporting reductions of between 6 and 40%, post-legislation, the larger reductions being mostly from studies with smaller population groups. The evidence as to whether these smoke-free laws have helped smokers to stop smoking or to reduce tobacco consumption is less clear. There is now significant body of published literature that demonstrates that smoke-free laws can lead to improvements in the health of both workers who are occupationally exposed and of the general population. There is no longer any reason why non-smokers should be exposed to SHS in any workplace. We recommend that all countries adopt national smoke-free laws that are in line with article 8 of the WHO Framework Convention on Tobacco Control that sets out recommendations for the development, implementation, and enforcement of national, comprehensive smoke-free laws.

Keywords: 2nd-Hand Smoke, Acute Myocardial-Infarction, Bar Workers, Canada, Coronary-Heart-Disease, Cross-Sectional Survey, Development, Environmental Tobacco-Smoke, Europe, Free Workplace Legislation, Google Scholar, Health Benefits, Health Outcomes, Lead, Literature, Myocardial Infarction, Outcome, Outcomes, Papers, Particulate Air-Pollution, Primary, Public Places, Questionnaire, Review, Science, Secondhand Smoke, Smoke-Free Laws, Smoking, Smoking Policies, Symptoms, Tobacco, Tobacco Consumption, US, Web of Science, WHO

# Title: International Journal of Public Sector Management

Full Journal Title: International Journal of Public Sector Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Larbi G.A. (1998), Contracting-out in public health and water services in Ghana. *International Journal of Public Sector Management*, **11** (23), 154-163.

Abstract: This article examines contracting-out in practice in public health and water services in Ghana. Drawing on in-depth interviews and discussions with knowledgeable officials, complemented by documentary analysis and secondary sources, the article provides insights into some of the institutional constraints and capacity issues that policy-makers and implementers need to be aware of in seeking to introduce and implement contracting-out policies in a developing country context. Though contracting-out in Ghana’s health and water sectors has so far been used in the provision of support services, attempts to broaden its application to include the direct provision of core services raise a number of capacity questions related to regulatory frameworks, enforcement and monitoring mechanisms, development of management information systems and skills for contract management. The capacity and willingness of the private sector to take on direct provision of public services are also crucial.

Keywords: Contracting-Out, Ghana, Health Service, Water Industry

# Title: International Journal for Quality in Health Care

Full Journal Title: [International Journal for Quality in Health Care](http://intqhc.oxfordjournals.org/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Walshe, K. (2009), Pseudoinnovation: the development and spread of healthcare quality improvement methodologies. *International Journal for Quality in Health Care*, **21** (3), 153-159.

Full Text: [2009\Int J Qua Hea Car21, 153.pdf](2009/Int%20J%20Qua%20Hea%20Car21,%20153.pdf)

Abstract: Over the last two decades, we have seen the successive rise and fall of a number of concepts, ideas or methods in healthcare quality improvement (QI). Paradoxically, the content of many of these QI methodologies is very similar, though their presentation often seeks to differentiate or distinguish them.

This paper sets out to explore the processes by which new QI methodologies are developed and disseminated and the impact this has on the effectiveness of QI programmes in healthcare organizations. It draws on both a bibliometric analysis of the QI literature over the period from 1988 to 2007 and a review of the literature on the effectiveness of QI programmes and their evaluation.

The repeated presentation of an essentially similar set of QI ideas and methods under different names and terminologies is a process of ‘pseudoinnovation’, which may be driven by both the incentives for QI methodology developers and the demands and expectations of those responsible for QI in healthcare organizations. We argue that this process has important disbenefits because QI programmes need sustained and long-term investment and support in order to bring about significant improvements. The repeated redesign of QI programmes may have damaged or limited their effectiveness in many healthcare organizations.

A more sceptical and scientifically rigorous approach to the development, evaluation and dissemination of QI methodologies is needed, in which a combination of theoretical, empirical and experiential evidence is used to guide and plan their uptake. Our expectations of the evidence base for QI methodologies should be on a par with our expectations in relation to other forms of healthcare interventions.

Keywords: Quality Management, Measurement of Quality, General Methodology, Healthcare System, Clinical Governance, Management, NHS, Reorganization, Implementation, Innovations, Involvement, Diffusion, Progress, England

? Wafula, F.N. and Goodman, C.A. (2010), Are interventions for improving the quality of services provided by specialized drug shops effective in sub-Saharan Africa? A systematic review of the literature. *International Journal for Quality in Health Care*, **22** (4), 316-323.

Full Text: 2010\Int J Qua Hea Car22, 316.pdf

Abstract: We set out to determine effectiveness of interventions for improving the quality of services provided by specialized drug shops in sub-Saharan Africa. We searched PUBMED, CAB Abstracts, Web of Science, PsycINFO and Eldis databases and websites for organizations such as WHO and Management Sciences for Health. Finally, we searched manually through the references of retrieved articles. Our search strategy included randomized trials, time-series studies and before and after studies evaluating six interventions; education, peer review, reorganizing administrative structures, incentives, regulation and legislation. We extracted information on design features, participants, interventions and outcomes assessed studies for methodological quality, and extracted results, all using uniform checklists. We obtained 10 studies, all implementing educational interventions. Outcome measures were heterogeneous and included knowledge, communication and dispensing practices. Education improved knowledge across studies, but gave mixed results on communication between sellers and clients, dispensing of appropriate treatments and referring of patients to health facilities. Profit incentives appeared to constrain behaviour change in certain instances, although cases of shops adopting practices at the expense of sales revenue were also reported. Evidence suggests that knowledge and practices of pharmacies and drug shops can be improved across a range of diseases and countries/regions, although variations were reported across studies. Profit incentives appear to bear some influence on the level of success of interventions. More work is required to extend the geographical base of evidence, investigate cost-effectiveness and evaluate sustainability of interventions over periods longer than 1 year.

Keywords: Africa, Behavior, Communication, Cost-Effectiveness, Databases, Developing Countries, Developing-Countries, Drug, Education, Effectiveness, Health, Incentives, Infections, Information, Interventions, Knowledge, Literature, Malaria, Management, Outcomes, Patient-Provider Communication, Peer Review, Peer-Review, Pharmacies, Pharmacy, Pharmacy Practice, Private Health-Care, Pubmed, Quality Improvement, Review, Science, Strategy, Sub-Saharan Africa, Success, Systematic, Systematic Review, Training, Web of Science, Websites, Who

? Pirkle, C.M., Dumont, A. and Zunzunegui, M.V. (2011), Criterion-based clinical audit to assess quality of obstetrical care in low- and middle-income countries: A systematic review. *International Journal for Quality in Health Care*, **23** (4), 456-463.

Full Text: 2011\Int J Qua Hea Car23, 456.pdf

Abstract: Purpose. Low-quality obstetric care in low-and middle-income countries contributes to high in-hospital maternal mortality. Criterion-based clinical audits are increasingly used to measure and improve obstetric care in these settings. This article systematically reviews peer-reviewed literature to determine if these audits are feasible, valid and reliable measurement tools for assessing the quality of obstetric care. Data sources. PUBMED, Google Scholar and Web of Science databases were searched for peer-reviewed articles published between 1995 and 2009 and which used criterion-based clinical audits to measure the quality of obstetric care in low-and middle-income countries. Study selection. Sixty-nine studies were identified by key terms and subsequently reviewed. Ten were retained based on inclusion/exclusion criteria. Data extraction. (i) General characteristics of the study; (ii) compliance with expected standards of care and on maternal/child health outcomes; (iii) selection of the study population and sampling methods; and (iv) quality control and reliability. Results of data synthesis. Criterion-based clinical audit is increasingly used in low-and middle-income countries. Most audits were conducted in sub-Saharan Africa. Studies had cross-sectional study or before-and-after designs. Sampling methods were poorly reported and selection bias was a concern. No studies compared audit against other measures of quality of care or against patient outcomes. Methods for quality control and assurance were generally not documented and reliability was mostly unaddressed. Conclusions. Criterion-based clinical audit appears feasible. No studies have rigorously evaluated its measurement properties in low-and middle-income countries. Without such evaluation, measurement properties of the audit remain under question.

Keywords: Africa, Bias, Compliance, Control, Criterion-Based Clinical Audit, Databases, Evaluation, Google Scholar, Health Outcomes, Literature, Low- and Middle-Income Countries, Management, Maternal Mortality, Maternal Mortality, Measurement, Methods, Mortality, Outcomes, Patient Outcomes, Quality Control, Quality of Care, Reliability, Review, Science, Selection Bias, Standards, Sub-Saharan Africa, Systematic, Systematic Review, Uganda, Web of Science

# Title: International Journal of Quantum Chemistry

Full Journal Title: International Journal of Quantum Chemistry

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0020-7608

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Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Binkley, J.S. and Pople, J.A. (1975), Møller-Plesset theory for atomic ground-state energies. *International Journal of Quantum Chemistry*, **9** (2), 229-236.

Full Text: [1960-80\Int J Qua Che9, 229.pdf](1960-80/Int%20J%20Qua%20Che9,%20229.pdf)

Abstracts: Møller-Plesset theory, in which electron correlation energy is calculated by perturbation techniques, is used in second order to calculate energies of the ground states of atoms up to neon. The unrestricted Hartree-Fock (UHF) Hamiltonian is used as the unperturbed system ‘and the technique is then described as unrestricted Møller-Plesset to second order (U M P 2) . Use of large Gaussian basis sets suggests that the limiting U M P ~ energies with a complete basis of .i, p, and d functions account for 75-8404 of the correlation energy. Preliminary estimates of the contributions of basis functions with higher angular quantum numbers indicate that full U M P 2 limits give even more accurate total energies.

# Title: International Journal of Radiation Biology

Full Journal Title: International Journal of Radiation Biology

ISO Abbreviated Title: Int. J. Radiat. Biol.

JCR Abbreviated Title: Int J Radiat Biol

ISSN: 0955-3002

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Taylor & Francis Ltd

Publisher Address: One Gunpowder Square, London EC4A 3DE, England

Subject Categories:

Biology, Miscellaneous Nuclear Science & Technology Radiology, Nuclear Medicine & Medical Imaging: Impact Factor

? Volf, V., Burgada, R., Raymond, K.N. and Durbin, P.W. (1996), Treatment with 3,4,3-LIHOPO of simulated wounds contaminated with plutonium and Americium in rat. *International Journal of Radiation Biology*, **70** (1), 109-114.

Abstract: The effect of a siderophore analogue 3,4,3-LIHOPO has been investigated in rat after intramuscular injection of 238Pu, 239Pu and 241Am simulating puncture wounds. Various treatment regimens were used to remove the radioactivity from its injection site and to reduce its retention in body tissues. The local deposits could be reduced to 9% of that in untreated controls by a single local injection of 30 mumol kg-1 3,4,3-LIHOPO administered 1 day after the actinides. Tissue retention of radioactivity was most effectively reduced (to 3% of controls) by continuous subcutaneous infusion of 3,4,3-LIHOPO (3 μmol kg-1 day-1), starting immediately after the injection of actinides and continuing for 2 weeks. The administration of 3,4,3-LIHOPO in drinking water was least effective. Treatment efficacy was substantially higher with 238Pu than with an equal activity of 239Pu (the 238Pu mass, however, was almost 300 times lower than that of 239Pu). Accordingly, the biokinetics and removal of 241Am changed when it was injected with 239Pu instead of 238Pu. Continuous infusion of 3,4,3-LIHOPO (3 mumol kg-1day-1), starting 4 and 30 days after intramuscular injection of 238Pu and 241Am reduced their femoral retention after 1 month to 20 and 60% of controls respectively; whole-body retention of 241Am was reduced to 20 and 70% of controls respectively.

# Title: International Journal of Radiation Oncology Biology Physics

Full Journal Title: [International Journal of Radiation Oncology Biology Physics](http://www.sciencedirect.com/science/journal/03603016)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Roach, M., Hanks, G., Thames, H., Schellhammer, P., Shipley, W.U., Sokol, G.H. and Sandler, H. (2006), Defining biochemical failure following radiotherapy with or without hormonal therapy in men with clinically localized prostate cancer: Recommendations of the RTOG-ASTRO Phoenix Consensus Conference. *International Journal of Radiation Oncology Biology Physics*, **65** (4), 965-974.

Full Text: [2006\Int J Rad Onc Bio Phy65, 965.pdf](2006/Int%20J%20Rad%20Onc%20Bio%20Phy65,%20965.pdf)

Abstract: In 1996 the American Society for Therapeutic Radiology and Oncology (ASTRO) sponsored a Consensus Conference to establish a definition of biochemical failure after external beam radiotherapy (EBRT). The ASTRO definition defined prostate specific antigen (PSA) failure as occurring after three consecutive PSA rises after a nadir with the date of failure as the point halfway between the nadir date and the first rise or any rise great enough to provoke initiation of therapy. This definition was not linked to clinical progression or survival; it performed poorly in patients undergoing hormonal therapy (HT), and backdating biased the Kaplan-Meier estimates of event-free survival. A second Consensus Conference was sponsored by ASTRO and the Radiation Therapy Oncology Group in Phoenix, Arizona, on January 21, 2005, to revise the ASTRO definition. The panel recommended: (1) a rise by 2 ng/mL or more above the nadir PSA be considered the standard definition for biochemical failure after EBRT with or without HT; (2) the date of failure be determined “at call” (not backdated). They recommended that investigators be allowed to use the ASTRO Consensus Definition after EBRT alone (no hormonal therapy) with strict adherence to guidelines as to “adequate follow-up.” To avoid the artifacts resulting from short follow-up, the reported date of control should be listed as 2 years short of the median follow-up. For example, if the median follow-up is 5 years, control rates at 3 years should be cited. Retaining a strict version of the ASTRO definition would allow comparisons with a large existing body of literature. (c) 2006 Elsevier Inc.

Keywords: Adherence, Cancer, Conference, Literature

? Stegman, L.D. and Alektiar, K.M. (2006), Trends in the publication of radiotherapy research and randomized controlled trials involving radiotherapy: A bibliometric analysis. *International Journal of Radiation Oncology Biology Physics*, **66** (3), S459.

Full Text: [2006\Int J Rad Onc Bio Phy66, S459.pdf](2006/Int%20J%20Rad%20Onc%20Bio%20Phy66,%20S459.pdf)

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Publication, Radiotherapy, Randomized, Randomized Controlled Trials, Research

? Choi, M., Fuller, C.D. and Thomas, C.R. (2009), Estimation of citation-based scholarly activity among radiation oncology faculty at domestic residency training institutions: 1996-2007. *International Journal of Radiation Oncology Biology Physics*, **74** (1), 172-178.

Full Text: [2009\Int J Rad Onc Bio Phy74, 172.pdf](2009/Int%20J%20Rad%20Onc%20Bio%20Phy74,%20172.pdf)

Abstract: Purpose: Advancement in academic radiation oncology is largely contingent on research productivity and the perceived external influence of an individual’s scholarly work. The purpose of this study was to use the Hirsch index (h-index) to estimate the research productivity of current radiation oncology faculty at U.S. academic institutions between 1996 and 2007. Methods and Materials: We performed bibliometric citation database searches for available radiation oncology faculty at domestic residency-training institutions (n = 826). The outcomes analyzed included the total number of manuscripts, total number of citations, and the h-index between 1996 and 2007. Analysis of overall h-index rankings with stratification by academic ranking, junior vs. senior faculty status, and gender was performed. Results: Of the 826 radiation oncologists, the mean h-index was 8.5. Of the individuals in the top 10% by the h-index, 34% were chairpersons, 88% were senior faculty, and 13% were women. A greater h-index was associated with a higher academic ranking and senior faculty status. Recursive partitioning analysis revealed an h-index threshold of 15 (p <0.0001) as an identified breakpoint between the senior and junior faculty. Overall, women had lower h-indexes compared with men (mean, 6.4 vs. 9.4); however, when stratified by academic ranking, the gender differential all but disappeared. Conclusion: Using the h-index as a partial surrogate for research productivity, it appears that radiation oncologists in academia today comprise a prolific group, however, with a highly skewed distribution. According to the present analysis, the h-index correlated with academic ranking. Thus, it potentially has utility in the process of promotion decisions. Overall, women in radiation oncology were less academically productive than men; the possible reasons for the gender differential are discussed. (C) 2009 Elsevier Inc.

Keywords: Academia, Academic, Academic Productivity, Analysis, Authorship, Bibliometric, Bibliometrics, Citation, Citations, Database, Decisions, Distribution, Faculty, Gender, Group, h Index, h-Index, Hirsch, Hirsch Index, Honorary, Index, Influence, Institutions, Medical Journals, Men, Oncology, Outcomes, Partitioning, Prevalence, Process, Productivity, Promotion, Purpose, Radiation, Radiation Oncology, Ranking, Rankings, Research, Research Productivity, Residency Training, Status, Stratification, Surrogate, Trends, Utility, Women, Work

? Morgan, P.B., Sopka, D.M., Kathpal, M., Haynes, J.C., Lally, B.E. and Li, L. (2009), First author research productivity of United States radiation oncology residents: 2002-2007. *International Journal of Radiation Oncology Biology Physics*, **74** (5), 1567-1572.

Full Text: [2009\Int J Rad Onc Bio Phy74, 1567.pdf](2009/Int%20J%20Rad%20Onc%20Bio%20Phy74,%201567.pdf)

Abstract: Purpose: Participation in investigative research is a required element of radiation oncology residency in the United States. Our purpose was to quantify the first author research productivity of recent U.S. radiation oncology residents during their residency training. Methods and Materials: We performed a computer-based search of PubMed and a manual review of the proceedings of the annual meetings of the American Society for Therapeutic Radiology and Oncology to identify all publications and presented abstracts with a radiation oncology resident as the first author between 2002 and 2007. Results: Of 1,098 residents trained at 81 programs, 50% published >= 1 article (range, 0-9), and 53% presented >= 1 abstract (range, 0-3) at an American Society for Therapeutic Radiology and Oncology annual meeting. The national average was 1.01 articles published and 1.09 abstracts presented per resident during 4 years of training. Of 678 articles published, 82% represented original research and 18% were review articles. Residents contributed 15% of all abstracts at American Society for Therapeutic Radiology and Oncology annual meetings, and the resident contribution to orally presented abstracts increased from 12% to 21% during the study period. Individuals training at programs with >6 residents produced roughly twice as many articles and abstracts. Holman Research Pathway residents produced double the national average of articles and abstracts. Conclusion: Although variability exists among individuals and among training programs, U.S. radiation oncology residents routinely participate in investigative research suitable for publication or presentation at a scientific meeting. These data provide national research benchmarks that can assist current and future radiation oncology residents and training programs in their self-assessment and research planning. (C) 2009 Elsevier Inc.

Keywords: Author, Contribution, Graduate Medical Education, Productivity, Publication, Publications, PubMed, Radiation Oncology Residency, Research, Resident Training

? Njeh, C.F. (2011), Citation and quotation errors: in Regards to Qiu et al. (Int J Radiat Oncol Biol Phys 2010;78/288-296). *International Journal of Radiation Oncology Biology Physics*, **79** (3), 957.

Full Text: [2011\Int J Rad Onc Bio Phy79, 957.pdf](2011/Int%20J%20Rad%20Onc%20Bio%20Phy79,%20957.pdf)

Keywords: Accuracy, Authors Check, Citation, Mar, Partial-Breast Irradiation, References

? Salvo, N., Doble, B., Khan, L., Amirthevasar, G., Dennis, K., Pharm, M.P., DeAngelis, C., Tsao, M. and Chow, E. (2012), Prophylaxis of radiation-induced nausea and vomiting using 5-hydroxytryptamine-3 serotonin receptor antagonists: A systematic review of randomized trials. *International Journal of Radiation Oncology Biology Physics*, **82** (1), 408-417.

Full Text: [2012\Int J Rad Onc Bio Phy82, 408.pdf](file:///H:\Bibliometric%20References\2012\Int%20J%20Rad%20Onc%20Bio%20Phy82,%20408.pdf)

Abstract: Purpose: To systematically review the effectiveness and safety of 5-hydroxytryptamine-3 receptor antagonists (5-HT3 RAs) compared with other antiemetic medication or placebo for prophylaxis of radiation-induced nausea and vomiting. Methods and Materials: We searched the following electronic databases: MEDLINE, Embase, the Cochrane Central Register of Controlled Clinical Trials, and Web of Science. We also hand-searched reference lists of included studies. Randomized, controlled trials that compared a 5-HT3 RA with another antiemetic medication or placebo for preventing radiation-induced nausea and vomiting were included. We excluded studies recruiting patients receiving concomitant chemotherapy. When appropriate, meta-analysis was conducted using Review Manager (v5) software. Relative risks were calculated using inverse variance as the statistical method under a random-effects model. We assessed the quality of evidence by outcome using the Grading of Recommendations Assessment, Development, and Evaluation approach. Results: Eligibility screening of 47 articles resulted in 9 included in the review. The overall methodologic quality was moderate. Meta-analysis of 5-HT3 RAs vs. placebo showed significant benefit for 5-HT3 RAs (relative risk [RR] 0.70; 95% confidence interval [CI] 0.57-0.86 for emesis; RR 0.84, 95% CI 0.73-0.96 for nausea). Meta-analysis comparing 5-HT3 RAs vs. metoclopramide showed a significant benefit of the 5-HT3 RAs for emetic control (RR 0.27, 95% CI 0.15-0.47). Conclusion: 5-Hydroxytryptamine-3 RAs are superior to placebo and other antiemetics for prevention of emesis, but little benefit was identified for nausea prevention. 5-Hydroxytryptamine-3 RAs are suggested for prevention of emesis. Limited evidence was found regarding delayed emesis, adverse events, quality of life, or need for rescue medication. Future randomized, controlled trials should evaluate different 5-HT3 antiemetics and new agents with novel mechanisms of action such at the NK(1) receptor antagonists to determine the most effective drug. Delayed nausea and vomiting should be a focus of future study, perhaps concentrating on the palliative cancer population. (C) 2012 Elsevier Inc.

Keywords: 5-HT3 Receptor Antagonist, Abdominal Radiotherapy, Adverse Events, Antiemetics, Assessment, Cancer, Chemotherapy, Cochrane, Control, Databases, Dexamethasone, Double-Blind, Drug, Effectiveness, Efficacy, Evaluation, Granisetron, Induced Emesis, Mechanisms, Medication, Medline, Meta Analysis, Meta-Analysis, Methods, Model, National-Cancer-Institute, Ondansetron, Outcome, Palliative, Patients, Prevention, Prophylaxis, Quality, Quality of Life, Radiation-Induced Nausea And Vomiting, Radiotherapy-Induced Nausea, Relative Risk, Review, Risk, Safety, Science, Screening, Serotonin, Software, Statistical, Systematic, Systematic Review, Web of Science

# Title: International Journal of Refractory Metals & Hard Materials

Full Journal Title: [International Journal of Refractory Metals & Hard Materials](http://www.sciencedirect.com/science/journal/02634368)

ISO Abbreviated Title:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Ortner, H.M. (2010), The impact factor and other performance measures - much used with little knowledge about. *International Journal of Refractory Metals & Hard Materials*, **28** (5), 559-566.

Full Text: [2010\Int J Ref Met Har Mat28, 559.pdf](2010/Int%20J%20Ref%20Met%20Har%20Mat28,%20559.pdf)

Abstract: It is generally believed that the IF is an objective measure of a journal’s scientific quality. However, the IF is good for a relative comparison at best because it is not directly related to the journal’s quality. It is the aim of this paper to provide important information on how the IF is derived and what it can tell you. The value of the IF is, however, affected by sociological and statistical factors. Sociological factors: Type of journal (publishing mainly letters, full papers or reviews) Average number of authors per paper (this is related to the subject area) Time (month) of publication The publish or perish phenomenon Factors specific to the technical field: Subject area of the journal (i.e. number of scientists working in this area) Size of the journal Number of scientists working the field Type of scientists working in the field (industry vs. university) Further, IFs are statistical measures and as such they are correlated to the number of workers in a certain area. Since this number varies greatly for various fields of science the respective IFs are not directly comparable. Hence, comparisons of IFs should only be made for journals in the same subject area. This knowledge is essential for every scientist but it is only infrequently discussed. In addition, a multitude of further performance measures have been recently proposed for both: The evaluation of journals and The quantification of an individual’s scientific research output It is attempted to give a short overview on this still developing field as far as it seems necessary for general use in the scientific community rather than in the highly specialized field of bibliometrics. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Bibliometrics, Impact Factor, Index, Journal Performance Measures, Journal Quality, Journals, Publication, Research, Research Output, Science

# Title: International Journal of Rehabilitation Research

Full Journal Title: International Journal of Rehabilitation Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Shearer, B., Burnham, J., Wall, J.C. and Turnbull, G.I. (1995), Physical and occupational-therapy - whats common and whats not. *International Journal of Rehabilitation Research*, **18** (2), 168-174

Keywords: Bibliometric Analysis, Occupational Therapy, Physical Therapy, Similarities

? Woodend, A.K., Nair, R.C. and Tang, A.S.L. (1997), Definition of life quality from a patient versus health care professional perspective. *International Journal of Rehabilitation Research*, **20** (1), 71-80.

Abstract: Quality of life assessment is increasingly acknowledged as an important component in selecting optimal health interventions for persons with cardiovascular disease. We hypothesized that cardiac out-patients have the same perception of what comprises quality of life as do their health care providers. A list of items was compiled from all quality of life measures and quality of life research. Staff members, cardiac out-patients and family members were asked what they considered important to the patients’ quality of life by rating the relative importance of each item on the list. The three groups differed in their ratings. of the top ten items ranked by patients, only three items appeared on the staff top ten List, and five on the family member’s list. The patients, in contrast with staff and family, chose aspects of QL that reflected the positive aspects of life. These differences were more marked in the physical, psychological, and activity domains than in the social domain. The study suggests that QL measures developed from the perspective of primary caregivers are probably invalid and therefore QL measures should be developed from a patient perspective.

Keywords: Acute Myocardial-Infarction, Of-Life, Heart-Transplantation, Improve Quality, Follow-Up, Rehabilitation, Surgery, Failure, Therapy, Impact, Artificial Cardiac Pacing, Cardiovascular Diseases, Cardiac Rehabilitation, Measurement, Quality of Life

? Schwartz, C. and BenMenachem, Y. (1999), Assessing quality of life among adults with mental retardation living in various settings. *International Journal of Rehabilitation Research*, **22** (2), 123-130.

Abstract: Fifty-eight Israeli adults with mild to moderate mental retardation, living in Jerusalem, either in a residential institution, various sheltered apartments or in their parents’ home, were studied with respect to their quality of life. Quality of life was evaluated through the assessment of individual’s satisfaction with different elements of life. The results are presented in this article. Overall, significant differences were found in satisfaction with: current residence, friends and free time. and total lifestyle satisfaction. Residents of sheltered apartments expressed the most satisfaction in these three domains. Persons living in the residential institution expressed the least satisfaction with current residence. and people living in their parents’ home expressed the least satisfaction with friends and free time and with total lifestyle satisfaction. The three groups differ significantly on the three domains of life satisfaction even after controlling for background and environmental characteristics such as: age, health limitations, adaptive behaviour, participation in leisure activities, and opportunity to choose and decide.

Keywords: Retarded Adults, Of-Life, Satisfaction, Adjustment, Placement, Services, Clients, Life Satisfaction, Living in Various Settings, Mental Retardation, Quality of Life

? Leung, D.P.K. and Liu, K.P.Y. (2011), Review of self-awareness and its clinical application in stroke rehabilitation. *International Journal of Rehabilitation Research*, **34** (3), 187-195.

Abstract: The objectives of this study were (i) to explore, following a literature review, the concepts of self-awareness, its assessment, and intervention for self-awareness deficits, as well as its clinical significance in stroke rehabilitation; and (ii) to apply the concepts of self-awareness in the context of a rehabilitation program. The search was conducted by the electronic databases Web of Science, Science Direct, MEDLINE, and PsychcInfo. A systematic literature search of publications written in English between 1980 and 2010 was conducted using the keywords, self-awareness or self-regulation. The search was limited to the following keywords: stroke, deficits, assessment, intervention, and rehabilitation. Two important conceptual models, namely, the Pyramid Model of Self-Awareness and the Dynamic Comprehensive Model of Awareness, were reviewed. Suggestions were made to the constraint-induced movement therapy for enhancement of both assessment and treatment of self-awareness deficits. In conclusion, self-awareness is essential for the success of rehabilitation. It is hoped that more studies can be conducted on the effectiveness of awareness enhancement programs incorporated in on-going therapies can be conducted, so that the evidence base can be further built up in this evolving area of practice. International Journal of Rehabilitation Research 34:187-195 (C) 2011 Wolters Kluwer Health | Lippincott Williams & Wilkins.

Keywords: Assessment, Awareness, Brain Injuries, Databases, Deficits, Effectiveness, Health, Intervention, Interventions, Journal, Literature, Literature Review, Medline, Model, Movement, Practice, Publications, Rehabilitation, Research, Review, Science, Self-Awareness, Stroke, Stroke Rehabilitation, Success, Systematic, Therapy, Traumatic Brain-Injury, Treatment, Web of Science

# Title: International Journal of Remote Sensing

Full Journal Title: International Journal of Remote Sensing

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0143-1161

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? McMorrow, J.M., Cutler, M.E.J., Evans, M.G. and Al-Roichdi, A. (2004), Hyperspectral indices for characterizing upland peat composition. *International Journal of Remote Sensing*, **25** (2), 313-325.

Abstract: The erosion of blanket peat is a major environmental issue in the UK. Maps of erosion extent and peat composition, especially humification and moisture content, would aid our understanding of the erosion process and provide information for management decisions. HyMap images, acquired as part of the SAR and Hyperspectral Airborne Campaign (SHAC), were used to test candidate indices of peat composition for eroded blanket peat in the southern Pennines. Peat physical properties, including moisture content and degree of humification (measured as transmission), were derived in the laboratory and related to the remotely sensed data. Strong correlations were found between HyMap SWIR reflectance and transmission, but other peat physical properties were not significantly correlated. Spectral indices were calculated to express the depth of cellulose, lignin and water absorption features. Strong positive correlations were found between transmission and an adjusted cellulose absorption index (CAI), r 0.71, and the gradient of its shoulders between 2020 and 2200 nm, r 0.89. Other indices also performed well. Normalized indices performed better because they allowed for differences in brightness. Higher moisture content in poorly humified peats may have reinforced the effect of deeper ligno-celluloic absorptions, but further sampling is required to test this. The results suggest the potential for hyperspectral remote sensing to provide information on surface peat composition across large areas.

Keywords: Infrared Reflectance Spectroscopy, Litter Decomposition, Derivative Analysis, Soil Reflectance, Organic-Matter, Long-Term, Nitrogen, Spectra, Lignin, Leaf

# Title: International Journal of Research in Marketing

Full Journal Title: [International Journal of Research in Marketing](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=01678116)

ISO Abbreviated Title: Int. J. Res. Mark.

JCR Abbreviated Title: Int J Res Mark

ISSN: 0167-8116

Issues/Year: 3

Journal Country/Territory: Netherlands

Language: English

Publisher: Elsevier Science BV

Publisher Address: Po Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Business: Impact Factor 1.188 (2002)

Pieters, R., Baumgartner, H., Vermunt, J. and Bijmolt, T. (1999), Importance and similarity in the evolving citation network of the *International Journal of Research in Marketing*. *International Journal of Research in Marketing*, **16** (2), 113-127.

Full Text: [I\Int J Res Mar16, 113.pdf](I/Int%20J%20Res%20Mar16,%20113.pdf)

Abstract: The citation network of the *International Journal of Research in Marketing* (*IJRM*) is examined from 1981 to 1995. A time-heterogenous log-multiplicative model is estimated to examine simultaneously the importance and similarity of journals in the network over time. Two distinct types of journal similarity, cohesion and structural equivalence, are considered and modeled in an integrative fashion. The findings show that the overall importance of *IJRM* in its network is growing rapidly albeit from a low base. The importance of psychology journals in the network appears to be decreasing. Clear cohesive and structurally equivalent groups of core marketing, methodology, managerial and psychology journals with distinct functions in the network are identified. Recommendations for future citation research are offered as well.

Keywords: Citation Analysis, Social Networks, Log-Multiplicative Models, Bibliometrics

? Talukdar, D., Hariharan, V.G. and Boo, C. (2011), Empirical regularity in academic research productivity patterns in marketing. *International Journal of Research in Marketing*, **28** (3), 248-257.

Full Text: [2011\Int J Res Mar28, 248.pdf](2011/Int%20J%20Res%20Mar28,%20248.pdf)

Abstract: In any academic discipline, published articles in their respective journals represent “production units” of scientific knowledge, and bibliometric distributions reflect the patterns in this productivity across authors or “producers”. We use a comprehensive data set from 11 leading marketing journals to examine whether there is any empirical regularity in the patterns of research productivity in the marketing literature. Our results present strong evidence that there is indeed a distinct empirical regularity. It is the so-called generalized Lotka’s Law of patterns in scientific productivity: the number of authors publishing n papers is approximately 1/n(c) of those publishing one paper. We find the empirically estimated value of the exponent c to be 2.05 for the overall bibliometric data across the leading marketing journals. For individual journals, the estimated values of c range from 2.15 to 2.83, with lower values indicating higher authorship concentration levels. We also find that variations in authorship concentration levels across journals and over time are driven by a journal’s maturity, its topical focus, its attractiveness as a publication outlet, the characteristics of its review process, and the extent of author collaboration present in the journal. We discuss the general implications of our findings. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Author, Author Concentration, Authors, Authorship, Bibliometric, Bibliometric Distributions, Bibliometric Distributions, Collaboration, Cumulative Advantage, Cumulative Advantage, Editors, Empirical Regularity, Impact, Journal, Journals, Knowledge, Law, Literature, Lotka’s Law, Lotkas Law, Mechanism, Papers, Productivity, Productivity Patterns, Publication, Publishing, Quality, Research, Research Productivity, Review, Scientific Productivity, Search

# Title: International Journal of Retail & Distribution Management

Full Journal Title: International Journal of Retail & Distribution Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0959-0552

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Findlay, A. and Sparks, L. (2002), European retail journals: A bibliometric analysis. *International Journal of Retail & Distribution Management*, **30** (8), 373-382.

Full Text: [I\Int J Ret Dis Man30, 373.pdf](I/Int%20J%20Ret%20Dis%20Man30,%20373.pdf)

Abstract: The 1990s have seen a major expansion in both the interest in retailing as an academic research subject and in the availability of European retail academic journals. Using a bibliometric approach, this paper investigates the development of published academic retail research in these journals. It identifies different emphases within the retail journals and retail research. Overall, however, retailing is identified increasingly as a synthetic rather than an interdisciplinary subject. A gulf between the direction that European scholars and US scholars are following is considered.

Keywords: Retailing, Journal Publishing, Research Measurement

# Title: International Journal of Social Research Methodology

Full Journal Title: International Journal of Social Research Methodology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lee, R.M. and Esterhuizen, L. (2000), Computer software and qualitative analysis: trends, issues and resources. *International Journal of Social Research Methodology*, **3** (3), 231-243.

Full Text: Int J Soc Res Met3, 231

Abstract: Developments during the 1990s in the use of computer software for qualitative data analysis are surveyed. Salient trends are identified as are wider issues associated with software use. Also listed are some of the resources now available to potential and actual users of computer-assisted qualitative data analysis software (CAQDAS).

# Title: International Journal of Special Libraries

Full Journal Title: International Journal of Special Libraries

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0019-0217

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Fan, W.Y. (2001), The traditional Chinese medical literature analysis and retrieval system (TCMLARS) and its application. *International Journal of Special Libraries*, **35** (3), 147-156.

Full Text: [I\Int J Spe Lib35, 147.pdf](I/Int%20J%20Spe%20Lib35,%20147.pdf)

Abstract: The Traditional Chinese Medical Literature Analysis and Retrieval System TCMLARS is a database system established by the Institute of Information on Traditional Chinese Medicine, China Academy of Traditional Chinese Medicine, to meet the increased need for traditional Chinese medical information services in the 1980’s. The system contained over 340,000 references and abstracts to literature on Traditional Chinese Medicine including Chinese materia medica, acupuncture, qigong, Chinese massage and health promotion. Source material for TCMLARS is drawn from more than 800 Chinese biomedical journals published since 1984. Over 30,000 records are added to the system annually. There are 15 databases in the system, 4 of which include both Chinese and English versions. Extensive indexing according to *Chinese Traditional Medicine and Materia Medica Subject Headings and Medical Subject Headings* (MeSH) is done for each citation. Information can be searched from almost all of the fields including title, author, author affiliation, subject headings, key words, classification, publication type, and abstract. The database system is available via website (http://www.cintcm.com, http://www.cintcm.ac.cn, http://www.sinomd.com), or CD-ROM or floppy disk. A bibliometric study reviewing the traditional Chinese medical literature on neoplasm was conducted using TCMLARS. 10, 185 references were pulled up from the databases (1984-1998) by the subject heading “neoplasms”. For advanced searches, the following subheadings were used: traditional Chinese drug therapy, acupuncture-moxibustion therapy, qigong therapy, massage therapy, acupoint therapy, integrated Chinese traditional and Western medicine therapy. Further analyses were performed on neoplasm type, year of publication, author’s organizational affiliation, type of literature, and the research grant. This study clearly outlines the extent of clinical work and research on neoplasms treated by Traditional Chinese Medicine in China. TCMLARS is proving to be the most efficient and effective means of literature retrieval and analysis for Traditional Chinese Medicine in the world.

Keywords: Literature Database, Traditional Chinese Medicine, Neoplasms, Bibliometrics

# Title: International Journal of Sport Finance

Full Journal Title: International Journal of Sport Finance

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Santos, J.M.S. and Garcia, P.C. (2011), A bibliometric analysis of sport economics research. *International Journal of Sport Finance*, **6** (3), 222-244.

Full Text: 2011\Int J Spo Fin6, 222.pdf

Abstract: In this paper, we carry out a bibliometric study of sports economics research indexed in the Social Sciences Citation Index (SSCI) database from 1956 to 2009. Quantitative evidence provided by some standard bibliometric indicators supports the idea that sports economics can be considered as a successful and fast-growing area. The statistical analysis of publications’ counts allows us to identify the authors, journals, and countries that have contributed in a decisive way to the progress of sports economics research. Furthermore, most recent authorship and citation concentration trends also reveal an advanced process of consolidation of this research field. In addition to journals specializing in sports which, mainly in recent years, have become significant channels for publishing sports economics research articles published in general journals maintain a significant relative weight within the total output. This reveals that the interest of research on sports economics goes beyond this specific field.

Keywords: Analysis, Authors, Authorship, Bibliometric, Bibliometric Indicators, Bibliometric Study, Bibliometrics, Citation, Departments, Economics, Interest, Journals, Market, Patterns, Publications, Published Research, Publishing, Relative Impacts, Research, Social Sciences, Social Sciences Citation Index, Sports, Sports Economics, SSCI, Statistical, Trends

# Title: International Journal of Sport Nutrition and Exercise Metabolism

Full Journal Title: International Journal of Sport Nutrition and Exercise Metabolism

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Burdon, C.A., O’Connor, H.T., Gifford, J.A. and Shirreffs, S.M. (2010), Influence of beverage temperature on exercise performance in the heat: A systematic review. *International Journal of Sport Nutrition and Exercise Metabolism*, **20** (2), 166-174.

Abstract: Purpose: Increased core temperature (T(c)), impaired cardiovascular function, and dehydration contribute to fatigue during prolonged exercise in the heat. Although many studies have examined mechanisms addressing these factors, few have investigated the effect of cold beverage temperature on thermoregulation and exercise performance in the heat. Methods: Citations from MEDLINE (Ovid), Sport Discus (EBSCOhost), AUSPORT and AusportMed (Informit), Web of Science, and SCOPUS were identified from the earliest record until September 2008 using the search terms drink temperature, beverage temperature, fluid temperature, water temperature, and cold fluid combined with body temperature and thermoregulation. To be included, studies needed to assess core or rectal temperature during exercise in moderate or hot environmental conditions. After quality rating was completed by two reviewers, the difference in mean T(c) and exercise performance was calculated. Results: Ten studies meeting search inclusion criteria were available for analysis. Three were excluded because sufficient detail or statistical data were not reported. A meta-analysis was not performed because the studies were deemed too different to group. Three of the remaining 7 studies found modulated T(c) with cold beverage consumption, and from the 4 that conducted exercise performance tests, performance improved by 10% with cold fluids. Conclusion: Cold fluid may attenuate T(c) rise and improve exercise performance in the heat; however, study findings are mixed. Research using well-trained athletes and fluid-ingestion protocols replicating competition scenarios is required. Potential sensory effects of cold fluid in maintaining motivation also need to be assessed as a mechanism underpinning improved performance.

Keywords: Analysis, Carbohydrate Mouth Rinse, Cardiovascular, Citations, Dehydration, Drink Temperature, Endurance Capacity, Endurance Performance, Environmental, Exercise, Fatigue, Fluid Ingestion, Fluid Temperature, Intensity Exercise, Meal Temperature, Mechanism, Medline, Meta-Analysis, Methods, Performance, Prolonged Exercise, Research, Review, Science, Scopus, Statistical, Systematic, Systematic Review, Thermoregulation, Thermoregulatory Responses, Volume, Voluntary Dehydration, Web of Science

# Title: International Journal of Sports Medicine

Full Journal Title: International Journal of Sports Medicine

ISO Abbreviated Title: Int. J. Sports Med.

JCR Abbreviated Title: Int J Sports Med

ISSN: 0172-4622

Issues/Year: 8

Journal Country/Territory: Germany

Language: English

Publisher: Georg Thieme Verlag

Publisher Address: PO Box 30 11 20, D-70451 Stuttgart, Germany

Subject Categories:

Sport Sciences: Impact Factor

? Brenner, I., Shek, P.N., Zamecnik, J. and Shephard, R.J. (1998), Stress hormones and the immunological responses to heat and exercise. *International Journal of Sports Medicine*, **19** (2), 130-143.

Abstract: This review focuses on the response of “stress” hormones to heat, exercise (single or repeated bouts), and combinations of these stimuli, with particular reference to their impact upon immune function. Very hot conditions induce a typical stress response, with secretion of catecholamines and cortisol. The catecholamines induce a demargination of leukocytes, and cortisol subsequently causes cells to migrate to lymphoid tissue. Sustained exercise, even in a thermally comfortable environment, induces a larger hormonal response than moderate thermal stress. With moderate exercise, increases in leukocyte numbers are related mainly to plasma norepinephrine concentrations, but with more intense exercise epinephrine concentrations assume a major importance. As exercise continues, plasma cortisol levels also rise, inducing an influx of neutrophils from bone marrow and an efflux of other leukocyte subsets. A combination of exercise and heat stress augments both hormonal and leukocyte responses. But these changes seem to be reversed if temperatures are clamped by exercising in cold water. If a second bout of exercise is performed with an inter-test interval of 30-45 min, neither hormone concentrations nor immune responses show any great cumulative effect under temperate conditions. However, in a hot environment the second exercise bout induces a larger and more persistent neutrophilia. Training influences these various responses mainly by decreasing the stress imposed when exercising at a given absolute work-rate.

# Title: International Journal of Surgery

Full Journal Title: [International Journal of Surgery](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=28553&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=10e6df541a97a04f67ad1c5ab3022a7b)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Jaffer, U. and Cameron, A.E.P. (2006), Deceit and fraud in medical research. *International Journal of Surgery*, **4** (2), 122-126.

Full Text: [2006\Int J Sur4, 122.pdf](2006/Int%20J%20Sur4,%20122.pdf)

Abstract: Deceit and fraud in medical research is a serious problem for the credibility of published literature. Although estimating its prevalence is difficult, reported incidences are alarming. The spectrum of the problem ranges from what may seem as rather innocuous gift authorship to wholesale fabrication of data. Potential factors which may have promoted fraud and deceit include financial gain, personal fame, the competitive scientific environment and scientific hubris. Fraud and deceit are difficult to detect and are generally brought to the fore by whistleblowers. Although most cases may be dealt with at an institutional level, regulatory organisations such as the Committee on Publication Ethics (COPE) and Medical Research Ethics Committee (MREC) have been established to monitor and try to remedy the problem.

Keywords: Fraud, Deceit, Medical Research, Medical Ethics

? Markar, S.R., Venkat-Raman, V., Ho, A., Karthikesalingam, A., Kinross, J., Evans, J. and Bloom, I. (2011), Laparoscopic versus open appendicectomy in obese patients. *International Journal of Surgery*, **9** (6), 451-455.

Full Text: [2011\Int J Sur9, 451.pdf](2011/Int%20J%20Sur9,%20451.pdf)

Abstract: Background: Although there appears to be no outright benefit of laparoscopic versus open surgery for acute appendicitis in the general population, it has been suggested that in obese patients a laparoscopic approach may offer more conclusive gains. The aim of this pooled analysis of comparative studies was to evaluate clinical outcome following laparoscopic and open appendicectomy in the obese population. Methods: A systematic literature search of MEDLINE, Embase, Web of Science and the Cochrane Library databases was performed. Primary outcomes were length of operation (min) and length of hospital stay (days). Secondary outcomes were presence of post-operative complications, wound and intra-abdominal complications. Weighted mean differences were calculated to assess the size of the effect of laparoscopic appendicectomy on continuous variables and Pooled odds ratio were calculated for discrete variables. Results: 2309 appendicectomies were included in this analysis, 1122 laparoscopic and 1187 open appendicectomies. Analysis of primary outcome measures revealed a shorter length of post-operative stay associated with laparoscopic appendicectomy (weighted mean difference = -1.26; 95% confidence interval = -2.36 to -0.16; p = 0.02). There was no significant difference between the groups for length of operation, post-operative complications, intra-abdominal or wound complications. Conclusion: The results of this pooled analysis indicate that laparoscopic appendicectomy may be beneficial in the obese population with a shorter length of hospital stay, and a similar incidence of postoperative complications. (C) 2011 Surgical Associates Ltd. Published by Elsevier Ltd. All rights reserved.

Keywords: Acute, Analysis, Appendectomy, Appendicectomy, Appendicitis, Author, Choice, Cochrane, Complications, Databases, Differences, England, Hospital, Incidence, Laparoscopy, Literature, Medline, Metaanalysis, Methods, Obesity, Outcome, Outcomes, Patients, Pooled Analysis, Postoperative Complications, Primary, Ratio, Science, Surgery, Systematic, Web of Science

# Title: International Journal of Surgical Pathology

Full Journal Title: International Journal of Surgical Pathology

ISO Abbreviated Title: Int. J. Surg. Pathol.

JCR Abbreviated Title: Int J Surg Pathol

ISSN: 1066-8969

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Westminster Publ Inc

Publisher Address: 708 Glen Cove Ave, Glen Head, NY 11545

Subject Categories:

Pathology: Impact Factor 0.663, / (2002)

Surgery: Impact Factor 0.663, / (2002)

Yan, K.W. and Chan, J.K.C. (2003), Pulmonary pathology of severe acute respiratory syndrome (SARS). *International Journal of Surgical Pathology*, **11** (2), 118.

Full Text: [I\Int J Sur Pat11, 118.pdf](I/Int%20J%20Sur%20Pat11,%20118.pdf)

# Title: International Journal of Technology Assessment in Health Care

Full Journal Title: International Journal of Technology Assessment in Health Care

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0266-4623

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Eckerlund, I. and Gerdtham, U.G. (1998), Econometric analysis of variation in cesarean section rates: A cross-sectional study of 59 obstetrical departments in Sweden. *International Journal of Technology Assessment in Health Care*, **14** (4), 774-787.

Full Text: 1998\Int J Tec Ass Hea Car14, 774.pdf

Abstract: The objective of this study was to explain the variation in cesarean section rates among hospitals (obstetrical departments) in Sweden, and to discuss its potential economic consequences. Using data from The Swedish Medical Birth Registry 1991, we made a cross-sectional study of the cesarean section rate at the departmental level. We identified some 20 determinants, demand-related as well as supply-related. A general model including all these regressors was specified, After reducing this model, we were able to explain about one-quarter of the variation, We conclude that the large variation in cesarean section rates indicates inefficiency, due mainly to overutilization, but perhaps also underutilization. It is difficult to calculate the economic consequences or the welfare loss to society, We estimated an additional cost for unnecessary cesarean sections of 13-16 million Swedish crowns (SEK) per year.

Keywords: Cesarean Section, Practice Patterns, Economics, Regression Analysis, Medical-Care, Health-Insurance, Birth-Rate, Delivery, Demand, Cost, Information, Technology, Behavior

? Ramsay, C.R., Grant, A.M., Wallace, S.A., Garthwaite, P.H., Monk, A.F. and Russell, I.T. (2000), Assessment of the learning curve in health technologies: A systematic review. *International Journal of Technology Assessment in Health Care*, **16** (4), 1095-1108.

Full Text: [2000\Int J Tec Ass Hea Car16, 1095.pdf](2000/Int%20J%20Tec%20Ass%20Hea%20Car16,%201095.pdf)

Abstract: Objective: We reviewed and appraised the methods by which the issue of the learning curve has been addressed during health technology assessment in the past.

Method: We performed a systematic review of papers in clinical databases (BIOSIS, CINAHL, Cochrane Library, EMBASE, HealthSTAR, MEDLINE, Science Citation Index, and Social Science Citation Index) using the search term “learning curve:”

Results: The clinical search retrieved 4,571 abstracts for assessment, of which 559 (12%) published articles were eligible for review. Of these, 272 were judged to have formally assessed a learning curve. The procedures assessed were minimal access (51%), other surgical (41%), and diagnostic (8%). The majority of the studies were case series (95%). Some 47% of studies addressed only individual operator performance and 52% addressed institutional performance. The data were collected prospectively in 40%, retrospectively in 26%, and the method was unclear for 31%. The statistical methods used were simple graphs (44%), splitting the data chronologically and performing a t test or chi-squared test (60%), curve fitting (12%), and other model fitting (5%).

Conclusions: Learning curves are rarely considered formally in health technology assessment. Where they are, the reporting of the studies and the statistical methods used are weak. As a minimum, reporting of learning should include the number and experience of the operators and a detailed description of data collection. Improved statistical methods would enhance the assessment of health technologies that require learning.

Keywords: Learning, Clinical Competence, Technology Assessment, Biomedical Models, Statistical, Laparoscopic Colorectal Surgery, Randomized Controlled Trial, Heart-Transplantation, Radiofrequency Ablation, Vein Harvest, Experience, Complications, Competence, Cholecystectomy, Outcomes

? Royle, P. and Milne, R. (2003), Literature searching for randomized controlled trials used in Cochrane reviews: Rapid versus exhaustive searches. *International Journal of Technology Assessment in Health Care*, **19** (4), 591-603.

Full Text: [2003\Int J Tec Ass Hea Car19, 591.pdf](2003/Int%20J%20Tec%20Ass%20Hea%20Car19,%20591.pdf)

Abstract: Objectives: To analyze sources searched in Cochrane reviews, to determine the proportion of trials included in reviews that are indexed in major databases, and to compare the quality of these trials with those from other sources. Methods: All new systematic reviews in the Cochrane Library, Issue1 2001, that were restricted to randomized controlled trials (RCTs) or quasi-RCTs were selected. The sources searched in the reviews were recorded, and the trials included were checked to see whether they were indexed in four major databases. Trials not indexed were checked to determine how they could be identified. The quality of trials found in major databases was compared with those found from other sources. Results: The range in the number of databases searched per review ranged between one and twenty-seven. The proportion of the trials in the four databases were Cochrane Controlled Trials Register = 78.5%, MEDLINE = 68.8%, Embase = 65.0%, and Science/Social Sciences Citation Index = 60.7%. Searching another twenty-six databases after Cochrane Controlled Trials Register (CCTR), MEDLINE, and Embase only found 2.4% additional trials. There was no significant difference between trials found in the CCTR, MEDLINE, and Embase compared with other trials, with respect to adequate allocation concealment or sample size. Conclusions: There was a large variation between reviews in the exhaustiveness of the literature searches. CCTR was the single best source of RCTs. Additional database searching retrieved only a small percentage of extra trials. Contacting authors and manufacturers to find unpublished trials appeared to be a more effective method of obtaining the additional better quality trials.

Keywords: Allocation, Database, Databases, Literature, MEDLINE, Quality, Quality of, Randomized, Randomized Controlled Trials, Review, Reviews, Sample Size, Size, Small, Source, Sources, Systematic Reviews

? Hopewell, S. and Clarke, M. (2003), How important is the size of a reprint order? *International Journal of Technology Assessment in Health Care*, **19** (4), 711-714.

Full Text: [2003\Int J Tec Ass Hea Car19, 711.pdf](2003/Int%20J%20Tec%20Ass%20Hea%20Car19,%20711.pdf)

Abstract: Objectives: This study aims to assess the impact of articles with very high reprint orders (“high-reprint articles”) by measuring their citation in the subsequent literature as compared with a control group of articles. Methods: The twenty-one articles (published in the Lancet in 1998) with reprint orders of over 10,000 were matched with a control set of twenty-one articles with smaller reprint orders. The Science Citation Index was used to obtain the number of citations for each of the forty-two articles. Results: The twenty-one high-reprint articles were cited 2,548 times; the mean number of citations was 121 (range, 3 to 499 citations per article). Five of the twenty-one high-reprint articles had more than 200 citations, but seven (33%) were cited twenty-five times or fewer. The twenty-one control articles were cited 986 times; the mean number of citations was forty-seven (range, 1 to 165). Fifteen (71%) of the twenty-one control articles were cited twenty-five times or fewer. Thirteen of the high-reprint articles were reports of randomized trials with a mean of 163 citations. In the control articles, six were reports of randomized trials with a mean of eighty-eight citations. Conclusions: Articles with a high-reprint order were cited more frequently than other articles. However, some high-reprint articles were cited infrequently. If the size of a reprint order is related to the importance of an article, those articles with very high reprint orders may, therefore, be perceived as more important. Further research is needed to explore other aspects of the relative importance and impact of high-reprint articles.

Keywords: Citation, Citation Analysis, Citations, Literature, Publication Bias, Reprints, Research

? Meads, C. and Nouwen, A. (2005), Does emotional disclosure have any effects? A systematic review of the literature with meta-analyses. *International Journal of Technology Assessment in Health Care*, **21** (2), 153-164.

Full Text: 2005\Int J Tec Ass Hea Car21, 153.pdf

Abstract: Objectives: Emotional disclosure has been widely publicized as having beneficial effects on physical and psychological health. A full systematic review was undertaken, with standard health technology appraisal methods, with the aim to assess the effects of emotional disclosure on healthy participants and those with pre-existing morbidity, particularly on longer-term physical health, performance, and psychological outcomes. Methods: Randomized controlled trials of emotional disclosure were obtained from database searches (MEDLINE (1966-2003), EMBASE (1980-2003), Cochrane Library (2002, issue 4), Web of Science (1981-2003), Cinahl (1982-2003), and Theses (March 2003), Internet sites (including Professor J.W. Pennebaker’s home pages), and personal contacts. Quality was assessed qualitatively and by Jadad score. Meta-analysis was conducted, using Revman 4.1 software, where more than two trials reported the same outcome. Results: Sixty-one trials were found meeting the inclusion criteria. Most had less than 100 participants and the median Jadad score was 0. A wide variety of physical, physiological, immunological, performance, and psychological outcomes were measured, but fewer were reported. There was no clear improvement for emotional disclosure compared with controls in objectively measured physical health and most other outcomes assessed. Conclusions: The opinion that this intervention is beneficial needs to be reassessed in light of the totality of evidence available.

Keywords: Cochrane, Disclosure, Emotional Disclosure, Events, Expression, Health Technology Assessment, Internet, Intervention, Literature, Meta Analysis, Meta-Analysis, Methods, Morbidity, Outcome, Outcomes, Physical Health, Psychotherapy, Quality, Randomized Controlled Trials, Randomized-Trials, Review, Rheumatoid-Arthritis, Science, Self-Regulation, Software, Stressful Experiences, Systematic, Systematic Review, Traumatic Experiences, Web of Science, Written Disclosure

? Cook, J.A., Ramsay, C.R. and Fayers, P. (2007), Using the literature to quantify the learning curve: A case study. *International Journal of Technology Assessment in Health Care*, **23** (2), 255-260.

Full Text: [2007\Int J Tec Ass Hea Car23, 255.pdf](2007/Int%20J%20Tec%20Ass%20Hea%20Car23,%20255.pdf)

Abstract: Objectives: The aim of this study was to assess whether a literature review of a technology can allow a learning curve to be quantified. Methods: The literature for fiberoptic intubation was searched for studies reporting information relevant to the learning curve. The Cochrane Library, Medline, Embase, and Science Citation index were searched. Studies that reported a procedure time were included. Data were abstracted on the three features of learning: initial level, rate of learning, and asymptote level. Random effects meta-analysis was performed. Results: Only twenty-one studies gave explicit information concerning the previous experience of the operator(s). There were thirty-two different definitions of procedure time. From four studies of fiberoptic nasotracheal intubation, the mean starting level and time for the 10th procedure was estimated to be 133 seconds (95 percent confidence interval, 113-153) and 71 seconds (95 percent confidence interval, 62-79), respectively. Conclusions: The review approach allowed learning to be quantified for our example technology Poor and insufficient reporting constrained formal statistical estimation. Standardized reporting of nondrug techniques with adequate learning curve details is needed to inform trial design and cost-effectiveness analysis.

Keywords: Airway, Citation, Clinical Competence, Fiberoptic Nasotracheal Endoscopy, Learning, Literature, Literature Review, Meta-Analysis, Randomized Controlled Trials, Randomized Trials, Review, Tracheal Intubation

? Lundberg, J., Brommels, M., Skår, J. and Tomson, G. (2008), Measuring the validity of early health technology assessment: Bibliometrics as a tool to indicate its scientific basis. *International Journal of Technology Assessment in Health Care*, **24** (1), 70-75.

Full Text: [2008\Int J Tec Ass Hea Car24, 70.pdf](2008/Int%20J%20Tec%20Ass%20Hea%20Car24,%2070.pdf)

Abstract: Objectives: The aim of this study was to assess whether publications of importance for improving the health system and its technologies are highly cited intrascientifically. Methods: Bibliometric assessment of the 596 publications used as sources in the fifty SBU Alerts from 2001 to 2004 from the Swedish Council on Technology Assessment in Health Care was carried out using the Thomson Scientific citation indexes. Normalized citation scores were calculated for all included studies. Additional factors such as the time and place of the research, subject categories, and journal source were analyzed. Results: On average, the sources in SBU Alert have been cited eight times more than the world average consistently during the time period and across research areas. Articles used as its scientific basis are often published in a few, high impact, general medical journals. However, many of the articles are published in field-specific journals with low impact factors. Most articles used in SBU Alert are published by authors based in the United States or the United Kingdom. However, Swedish, Danish, and Dutch publications are overrepresented in its science base, whereas Japanese, Taiwanese, Indian, and Russian publications are underrepresented. Conclusions: Publications used as sources in a Swedish system for identification and early assessment of new methods in health care are also highly cited within the scientific community. This finding increases the appropriateness of using bibliometric indicators in evaluations of clinical research and suggests that decision makers through SBU Alert are getting scientifically sound advice.

Keywords: Assessment, Authors, Bibliometric, Bibliometric Indicators, Bibliometrics, Biomedical, Biomedical Funding Decisions, Biomedical Research, Care, Citation, Citation Indexes, Clinical, Clinical Research, Community, Decision, Dutch, Evaluating Payback, General, Health, Health Care, Health System, Health Technology Assessment, Identification, Impact, Impact Factors, Indian, Indicators, Japanese, Journal, Journals, Medical, Medical Journals, Methods, Performance, Publications, Research, Russian, Science, Source, Sources, Taiwanese, Technologies, Technology, Technology Assessment, Tool, United Kingdom, United States, Validity, World

# Title: International Journal of Technology Management

Full Journal Title: International Journal of Technology Management

ISO Abbrev. Title: Int. J. Technol. Manage.

JCR Abbrev. Title: Int J Technol Manage

ISSN: 0267-5730

Issues/Year: 8

Language: English

Journal Country/Territory: Switzerland

Publisher: Inderscience Enterprises Ltd

Publisher Address: World Trade Center Bldg, 29 Route De Pre-Bois, Case Postale 896, CH-1215 Geneva, Switzerland

Subject Categories:

Engineering, Multidisciplinary: Impact Factor 0.419, 53/79 (2009)

Operations Research & Management Science: Impact Factor 0.419, 66/73 (2009)

? Geisler, E. (2002), The metrics of technology evaluation: Where we stand and where we should go from here. *International Journal of Technology Management*, **24** (4), 341-374.

Full Text: 2002\Int J Tec Man24, 341.pdf

Abstract: The complexities of technology generation, transfer, and commercialisation processes have always gravely taxed the way we measure and assess them. This paper reviews the existing metrics for evaluation of science and technology, with emphasis on evaluation of industrial R&D and technology. Among the categories of metrics, this paper reviews econometric methods, patents, process methods, and bibliometric methods. The paper also reviews models of the innovation continuum, in an effort to link such models to the metrics categories. Based on the review of the state of the art, the paper proposes future directions for the development and the application of metrics of technology evaluation. A process-outcomes stage model is outlined and its advantages are listed. This stage-model is suggested as a more effective method to evaluate R&D and technology along the entire innovation continuum.

Keywords: Bibliometric, Bibliometric Methods, Development, Development Performance, Development Portfolios, Evaluation, Industrial Innovation, Innovation, Metrics, Patents, Process Model, R&D, Science, Science and Technology, Technology

? Etemad, H. (2004), E-commerce: the emergence of a field and its knowledge network. *International Journal of Technology Management*, **28** (7-8), 776-800.

Abstract: Electronic commerce (e-commerce) describes the manner in which transactions take place over electronic networks, mostly over the internet. It includes the process of supplying, buying and selling goods, services and information electronically. This paper uses bibliometric epistemology to suggest that a number of publications have played catalytic roles in the formation of a knowledge network that underlies the rapidly developing field of e-commerce. The first four of the six properties of knowledge (Latour, 1987) the ‘what’, ‘where’, ‘when’, by ‘whom’, ‘how’, and ‘why’, - are presented in the results. The paper presents the most highly cited e-commerce documents (including books and journals), highly cited researchers, their respective fields, topics and the publication media that disseminated their works. The formation stages of e-commerce clearly point to the emergence of an inter-disciplinary and comprehensive field.

Keywords: Bibliometric, Bibliometric Epistemology, E-Commerce, Entrepreneurship, Inter-Disciplinary Studies, Journals, Knowledge Network, Management, Network, Publication, Publications

? Lin, C.H., Yang, H.L. and Liou, D.Y. (2010), A cross-national comparative analysis of industrial policy and competitive advantage. *International Journal of Technology Management*, **49** (1-3), 93-106.

2010\Int J Tec Man49, 93.pdf

Abstract: While many schools of thought in economic planning agree that innovation constitutes the driving force behind the competitive performance of nations, the efficiency of its supporting industrial policy is still subject to debate. This paper applies the performance framework in competitive advantage issues associated with the data envelopment analysis (DEA) method to evaluate the relative efficiency of industrial technology investments across countries. Each country’s annual research and development (R&D) expenditures are treated as input while patents and academic publications, indexed by Science Citation Index (SCI) and Engineering Index (EI), are considered as outputs. Three of the ten countries studied were the most efficient: China, Singapore and Taiwan. The latter two are members of ‘the East Asian Tigers’. Further, Malmquist Index (MI) analysis indicates that the total observed countries achieved higher efficiency in 2003 compared with 2002. Technological change contributed more to the improvement of MI than did technical efficiency change.

Keywords: China, Citation, Competitive Advantage, Data Envelope Analysis, DEA, Economic, Efficiency, Industrial Policy, Innovation, Input, Output, Patents, Productivity, Publications, R&D, Research, Research and Development, SCI, Science, Science Citation Index, Technology

? Klincewicz, K. and Miyazaki, K. (2011), Sectoral systems of innovation in Asia. The case of software research activities. *International Journal of Technology Management*, **53** (2-4), 161-189.

Full Text: [2011\Int J Tec Man53, 161.pdf](2011/Int%20J%20Tec%20Man53,%20161.pdf)

Abstract: The article compares sectoral systems of innovation (SSI) related to software in the selected Asian countries: China, India, Japan, Korea, Singapore and Taiwan, focusing on outputs of scientific research for years 2002-2006 and using tech mining research method. The paper characterises the relative importance of specific domains of applied software research in every country and measures the responsiveness of researchers to emerging technologies. The analysis helps identify potential inefficiencies and strategic threats in the software sectors of the concerned countries.

Keywords: Analysis, Asia, Asian, Bibliometrics, China, Country, Emerging Technologies, India, Innovation, Japan, Korea, Mining, Potential, R&D Management, Research, Research Method, Scientific Research, Software, Software Industry, Strategic, System of Innovation, Systems, Taiwan, Tech Mining, Technologies, Technology Transfer

# Title: International Journal of Thermophysics

Full Journal Title: [International Journal of Thermophysics](http://www.kluweronline.com/issn/0195-928X/)

ISO Abbreviated Title: Int. J. Thermophys.

JCR Abbreviated Title: Int J Thermophys

ISSN: 0195-928X

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Kluwer Academic/Plenum Publ

Publisher Address: 233 Spring St, New York, NY 10013

Subject Categories:

Thermodynamics: Impact Factor 0.773, / (2001)

Chemistry, Physical: Impact Factor 0.773, / (2001)

Mechanics: Impact Factor 0.773, / (2001)

Physics, Applied: Impact Factor 0.773, / (2001)

? Shukla, K. and Rajagopalan, R. (1995), Structures and phase-transitions in colloidal dispersions from theory and simulation. *International Journal of Thermophysics*, **16** (2), 327-335.

Abstract: Equilibrium properties of uncharged colloidal dispersions with particles interacting via harsh short-ranged repulsive forces and strong short-ranged attractive forces are determined by means of an approach in which colloids are treated as supramolecular versions of simple fluids. The interparticle interactions are represented by short-ranged square-well potentials. Structure factors and phase diagrams for the dispersions are determined analytically by mapping the square-well potential onto the adhesive-hard-sphere model by equating the respective second virial coefficients. Theoretical predictions are compared with molecular simulation results for the conditions relevant to real colloidal dispersions. Our results show that the adhesive-hard-sphere model can describe accurately structure factors and phase diagrams of nonionic microemulsions and inverted micellar systems containing AOT surfactant dispersed in oil. Both upper-critical and lower-critical consolute points in colloidal dispersions dominated by short-ranged attractive forces can be described using the same formalism.

Keywords: Adhesive Hard Spheres, Colloidal Dispersions, Interparticle Interactions, Micellar Systems, Microemulsions, Phase Transitions, Monte-Carlo Simulation, Gibbs Ensemble, Scattering, Equilibria, Fluids, Model

# Title: International Journal of Toxicology

Full Journal Title: International Journal of Toxicology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1091-5818

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

(2001), Final report on the safety assessment of Lard Glyceride, Hydrogenated Lard Glyceride, Lard Glycerides, Hydrogenated Lard Glycerides, Lard, and Hydrogenated Lard. *International Journal of Toxicology*, **20** (3S), 57-64.

Full Text: [I\Int J Tox20, 57.pdf](I/Int%20J%20Tox20,%2057.pdf)

Abstract: Lard obtained from the rendering of fatty porcine tissue is used in cosmetic products, as are several of its derivatives. These derivatives include Lard Glycerides (mono-, di-, and triglycerides derived from Lard), Lard Glyceride (the monoglycerides only), Hydrogenated Lard Glycerides, Hydrogenated Lard Glyceride, and Hydrogenated Lard. The latter three are produced by controlled hydrogenation of the described precursor. These ingredients function as skin-conditioning agents and, with the exception of Lard, as viscosity-increasing agents in several cosmetic products. No information was available regarding the fate during processing of impurities such as pesticides or heavy metals that may be found in animal tissue. Lard itself is established by the Food and Drug Administration (FDA) as a GRAS (generally recognized as safe) substance. Animal studies report adverse effects expected with the feeding of high fat diets, but other animal toxicity data were not available. Lard was not mutagenic in transgenic mice. Cell proliferation assays showed more proliferation in mice fed Lard compared to those fed plant-source fats, but another study showed no difference. Cocarcinogenic effects were observed when high-fat diets containing Lard were fed, with known carcinogens, to mice, rats, and hamsters. Consistent with the FDA GRAS determination, it was concluded that these ingredients may be used safely in cosmetic formulations. However, it was considered important to limit the presence of heavy metals and/or polychlorinated biphenyl (PCB) or other pesticide contamination. Accordingly, limits were established as follows: lead, not more than 0.1 ppm; arsenic (as As), less than or equal to3 ppm; mercury (as Hg), less than or equal to1 ppm; and total PCB/pesticide contamination, not more than 40 ppm, with not more than 10 ppm for any specific residue.

Keywords: Different Dietary Fats, Colon Carcinogenesis, Mammary Carcinogenesis, Corn-Oil, Rats, Inhibition, Promotion, Quantity, Hamsters, Lipids

# Title: International Journal of Tuberculosis and Lung Disease

Full Journal Title: International Journal of Tuberculosis and Lung Disease

ISO Abbreviated Title: Int. J. Tuberc. Lung Dis.

JCR Abbreviated Title: Int J Tuberc Lung D

ISSN: 1027-3719

Issues/Year: 12

Journal Country/Territory: France

Language: English

Publisher: Int Union Against Tuberculosis Lung Disease (I U A T L D)

Publisher Address: 68 Boulevard Saint-Michel, 75006 Paris, France

Subject Categories:

Infectious Diseases: Impact Factor 1.737, / (2001)

Respiratory System: Impact Factor 1.737, / (2001)

? Chan-Yeung, M. (2003), Severe acute respiratory syndrome: A lesson in infectious disease. *International Journal of Tuberculosis and Lung Disease*, **7** (5), 407-408.

? Angeby, K.A.K., Hoffner, S.E. and Diwan, V.K. (2004), Should the ‘bleach microscopy method’ be recommended for improved case detection of tuberculosis? Literature review and key person analysis. *International Journal of Tuberculosis and Lung Disease*, **8** (7), 806-815.

Abstract: SETTING: it has been proposed that the sensitivity of direct sputum smear microscopy can be improved if sputum is liquefied with sodium hypochlorite (NaOCl or household bleach), and concentrated by centrifugation before acid-fast staining. OBJECTIVE: To summarise the results of the studies of the bleach method for improved sensitivity of sputum microscopy and to describe the opinions and knowledge of key persons in National Tuberculosis Control Programmes (NTPs) about this method. DESIGN: We searched MEDLINE, EMBASE and Web of Science for studies comparing the bleach method to direct sputum smear microscopy in low- or middle-income countries. Each study was assessed regarding methodology and field applicability. We also sent out questionnaires concerning the bleach method to key persons in NTPs in 85 countries. RESULTS: In 15 of the 19 studies identified there was a statistically significant improvement in the proportion of positive tests or sensitivity ranging from 7-253%. The majority (73%) of the key persons had heard of the bleach method. Forty-four per cent thought it could improve case detection in their countries, while 49% did not know; 93% of them would promote the bleach method; the most common reasons for doing so would be recommendations from the WHO or the IUATLD, or favourable studies performed in their own country. The bleach method was used routinely in only three countries. CONCLUSION: There is enough evidence to recommend the evaluation and introduction of the bleach method in most settings where mycobacterial culture is not performed routinely.

Keywords: Acid-Fast Bacilli, Analysis, Culture, Design, Developing-Countries, Diagnosis, Diagnosis, Digestion, Embase, Evaluation, Improved Sensitivity, Knowledge, Literature Review, Methodology, Microscopy, Pulmonary Tuberculosis, Questionnaires, Review, Science, Sedimentation, Sodium Hypochlorite, Sputum, Sputum Smear Technique, Tuberculosis, Web of Science, Who

? Ramos, J.M., Padilla, S., Masia, M. and Gutierrez, F. (2008), A bibliometric analysis of tuberculosis research indexed in PubMed, 1997-2006. *International Journal of Tuberculosis and Lung Disease*, **12** (12), 1461-1468.

Abstract: OBJECTIVE: To describe a bibliometric review of the literature oil tuberculosis (TB)) research indexed in PubMed over a 10-year period. METHODS: Medline was used via the PubMed online service of the US National Library of Medicine from 1997 to 2006. The search strategy was: [(tuberculosis) OR (tuberculosis) In all fields]. RESULTS: A total of 35735 references were located. The average annual growth rate was +4.7%. The articles were published in 2874 scientific journals. Sixteen journals contained 25% of the TB journal literature. The main journal was the International Journal of Tuberculosis and Lung Disease. Western Europe was the most productive region, with 31.1% of the articles. The USA ranked second (21%)and Asia third (19.9%). The USA is the predominant country, followed by India Japan and the United Kingdom. When normalised by population, the order of prominence is Switzerland, New Zealand and Denmark. Normalised by GDP, Gambia, Malawi and Guinea-Bissau were the most productive countries. Normalised by estimated number of TB cases, Iceland, Switzerland and Norway were in leading positions. CONCLUSIONS: There was increasing research activity in the field of TB during the period 1997-2006. The countries with more estimated cases of TB produced less research in TB than industrialised countries.

Keywords: Activity, Analysis, Asia, Bibliometric, Bibliometric Analysis, Bibliometry, Cases, Country, Denmark, Europe, European-Union, Field, Geography, Growth, Growth Rate, Health Research, Iceland, Impact, India, Japan, Journal, Journals, Literature, Literature Review, Malawi, Methods, New Zealand, Norway, Parasitology, Population, Publications, PUBMED, References, Research, Research Productivity, Results, Review, Scientific Journals, Search, Search Strategy, Service, Strategy, Switzerland, Trends, Tuberculosis, United Kingdom, US, USA, Western Europe, Western-Europe

# Title: International Journal of Uncertainty Fuzziness and Knowledge-Based Systems

Full Journal Title: International Journal of Uncertainty Fuzziness and Knowledge-Based Systems

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Van Eck, N.J. and Waltman, L. (2007), Bibliometric mapping of the computational intelligence field. *International Journal of Uncertainty Fuzziness and Knowledge-Based Systems*, **15** (5), 625-645.

Abstract: In this paper, a bibliometric study of the computational intelligence field is presented. Bibliometric maps showing the associations between the main concepts in the field are provided for the periods 1996-2000 and 2001-2005. Both the current structure of the field and the evolution of the field over the last decade are analyzed. In addition, a number of emerging areas in the fild are identified. It turns out that the computational intelligence can best be seen as a field that is structured around four important types of problems, namely control problems, classification problems, regression problemsm and optimization problems. Within the computational intelligence field, the neural networks and fuzzy systems sudfields are fairly intertwined, whereas the evolutionary computation subfield has a relatively independent postion.

Keywords: Bibliometric, Bibliometric Mapping, Bibliometric Study, Bibliometrics, Classification, Computational Intelligence, Discipline, Evolutionary Computation, Fuzzy Systems, Intelligence, Jackknife, Maps, Neural Networks, Neural-Network Research, Science

# Title: International Journal of Urban and Regional Research

Full Journal Title: [International Journal of Urban and Regional Research](http://www.blackwell-synergy.com/servlet/useragent?func=showIssues&code=ijur)

ISO Abbreviated Title: Int. J. Urban Regional

JCR Abbreviated Title: Int J Urban Regional

ISSN: 0309-1317

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Blackwell Publ Ltd, Oxford

Publisher Address:

Subject Categories:

Impact Factor

Findlay, A.M., Jones, H. and Davidson, G.M. (1998), Migration transition or migration transformation in the Asian dragon economies? *International Journal of Urban and Regional Research*, **22** (4), 643-663.

Full Text: [I\Int J Urb Reg Res22, 643.pdf](I/Int%20J%20Urb%20Reg%20Res22,%20643.pdf)

Abstract: There has been a marked tendency to interpret the recent transformation of international migration systems in Eastern Asia in terms of a ‘migration transition’ model. The transition in these countries from net emigration to net immigration, with major inflows from poorer adjacent countries, is seen as being driven by an intricate regional pattern of uneven development but growing economic integration. This paper challenges this view through an examination of the trade, investment and migration linkages of the region’s four dragon economies (Hong Kong, Singapore, South Korea and Taiwan). It argues that the key influences on their international migration streams reflect, above all, the functions of these states as second-order, global city regions. Their place in the global capitalist system creates a shared demand for very particular types of both highly skilled and unskilled labour, but the migration policies of the four states are independently, and therefore distinctively, socially constructed.

Keywords: World

# Title: International Journal of Water

Full Journal Title: [International Journal of Water](http://www.inderscience.com/browse/index.php?journalID=32)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Balkaya, N. (2002), Pesticide removal from wastewater. *International Journal of Water*, **2** (2-3), 212-219.

Full Text: Int J Env Watl2, 212

Abstract: In this study, the removal of 2,2 – dichlorovinyl – o,o – dimethyl phosphate (DDVP) from wastewater by adsorption was carried out. DDVP is an organophosphorus insecticide widely used in agriculture in Turkey. Adsorbents used in the study were agricultural waste straw, wood chips and ground corncobs. Adsorption of DDVP onto these materials from wastewater was evaluated by using a batch system. Optimum experimental conditions such as optimum adsorbent dose and contact time were investigated. Straw, wood chip and ground corncob were compared with each other for their ability to remove DDVP. As a result, it was concluded that these materials can be used for DDVP removal from wastewater.

Keywords: DDVP Removal, Adsorption, Wastewater, Straw, Wood Chips, Ground Corncobs, Pesticides, Pesticide Removal

# Title: International Library Review

Continued as [The International Information & Library Review](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6828&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=fd59de0a60354431098b035e1c9189ce)

Full Journal Title: [International Library Review](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=23223&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=d1c1fa1e9a483b354fcf3598a7391c81)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Adeniran, O.R. (1988), Bibliometrics of computer-science literature in Nigeria. *International Library Review*, **20** (3), 347-359

Keywords: Bibliometrics

Shalini, R. and Khan, M.A. (1989), Communication behaviour of Indian geophysicists: A citation analysis. *International Library Review*, **19** (4), 401-411.

Full Text: [I\Int Lib Rev19, 401.pdf](I/Int%20Lib%20Rev19,%20401.pdf)

Islam, M. (1989), Research and scientific publication in Saudi Arabia. *International Library Review*, **21** (3), 355-361.

Full Text: [I\Int Lib Rev21, 355.pdf](I/Int%20Lib%20Rev21,%20355.pdf)

# Title: International Microbiology

Full Journal Title: [International Microbiology](http://www.im.microbios.org/)

ISO Abbreviated Title: Internatl. Microbiol.

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Vieira, R.H.S.F. and Volesky, B. (2000), Biosorption: A solution to pollution? *International Microbiology*, **3** (??), 17-24.

Full Text: [I\Int Mic3, 17.pdf](I/Int%20Mic3,%2017.pdf)

Abstract: To solve the water pollution problem by toxic heavy metal contamination resulting from humans technological activities has for long presented a challenge. Biosorption can be a part of the solution. Some types of biosorbents such as seaweeds, molds, yeasts, bacteria or crab shells are examples of biomass tested for metal biosorption with very encouraging results. The uptake of heavy metals by biomass can in some cases reach up to 50% of the biomass dry weight. New biosorbents can be manipulated for better efficiency and multiple re-use to increase their economic attractiveness.

Keywords: Pollution, Biosorption, Biosorbents, Heavy Metals, Decontamination

? Arguimbau, L. (2008), Global trends in research resources and scientific output in microbiology in Spain (1998-2007). *International Microbiology*, **11** (3), 213-220.

Full Text: [2008\Int Mic11, 213.pdf](2008/Int%20Mic11,%20213.pdf)

Abstract: This work assesses the main features of microbiological research developed in Spain over the last decade (1998-2007), observing its changes and trends along the time and comparing them to those which have taken place in other life sciences. This analysis encompasses the entire scientific cycle: the organizations involved (basically, universities, research centers, scientific societies, and companies), resources invested (human and economic), and outputs or results obtained (journals, articles, doctoral theses, and other documents or publications). Summarizing, there is a positive trend in Spanish microbiology regarding research projects and scientific articles; the scientific output (research articles) of Spanish microbiologists ranks 6th in the world, which is higher than the ranking of Spain with respect to economic development.

Keywords: Analysis, Bibliometric Analysis, Changes, Companies, Developed, Development, Economic, Economic Development, Human, Journals, Life, Life Sciences, Microbiology, Organizations, Publications, Ranking, Research, Research Productivity, Resources, Respect, Sciences, Scientific Output, Spain, Spanish, Time, Trend, Trends, Universities, Work, World

# Title: International Nursing Review

Full Journal Title: [International Nursing Review](http://www.blackwell-synergy.com/servlet/useragent?func=showIssues&code=inr)

ISO Abbreviated Title: Int. Nurs. Rev.

JCR Abbreviated Title: Int Nurs Rev

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Fox, P.G. and Kumchum, S. (1996), Caring for Myanmar refugees in Thailand. *International Nursing Review*, **43** (5), 154-158.

Full Text: Int Nur Rev43, 154.pdf

Abstract: Massive refugee movements continue due to conflicts between and within nations. To combat the major causes of mortality in refugee camps-undernutrition, measles, diarrhoea, pneumonia and malaria13-nurses are following the principles of primary health care and are promoting adequate food, safe drinking water, shelter, environmental sanitation and immunization.

? Bjørn, A., Hundrup, Y.A. and Wagner, L. (2008), Doctoral prepared nurses in Denmark and their scientific production between 1976 and 2005. *International Nursing Review*, **55** (2), 227-233.

Full Text: [2008\Int Nur Rev55, 227.pdf](2008/Int%20Nur%20Rev55,%20227.pdf)

Abstract: Background: Nursing research in Denmark has evolved over the last 30 years. By 2005, 48 Danish nurses had earned a doctoral degree. The Danish Nurses Organization formalized a strategy for development of nursing research for the period 1999-2002. The strategy was evaluated in 2004. One point in the evaluation was that the nurses’ publication of peer-reviewed articles in journals with an Impact Factor did not show in the bibliographic measure used in health sciences.

Purpose: The purpose of this study is to identify the number of Danish nurses holding a doctoral degree by the end of 2005 and to document their scientific production.

Methods: A descriptive design based on a national register of all nurses in Denmark holding doctoral degrees was used to explore the curricula vitae and publication lists of 38 out of 48 (79%) nurses on the register. Authorship of all 48 graduated nurses was sought in the databases: PubMed and CINAHL.

Conclusion: A pattern of growing engagement in publishing peer-reviewed articles was identified among the Danish nurses holding a doctoral degree. Fifty per cent of these doctoral prepared nurses published peer-reviewed papers. The majority apparently pursued a career in health sciences. Nursing as an academic discipline is evolving in Denmark but, with its roots in clinical nursing, scientists may have to be aware of the necessity to prevail as a discipline through scientific production.

Keywords: Denmark, Doctoral Prepared Nurses, Nursing Science, Peer Review, PhD, Publishing, Research, Nursing-Research

? Bennett, P.N. and Hany, A. (2009), Barriers to kidney transplants in Indonesia: A literature review. *International Nursing Review*, **56** (1), 41-49.

Full Text: 2009\Int Nur Rev56, 41.pdf

Abstract: People living with chronic kidney disease will require renal dialysis or a kidney transplant to maintain life. Although Indonesia has a developing healthcare industry, Indonesia’s kidney transplant rates are lower than comparable nations. To explore the healthcare literature to identify barriers to kidney transplants in particular in relation to Indonesia. Healthcare databases were searched (CINAHL, MEDLINE, EBSCOhostEJS, Blackwell Synergy, Web of Science, PUBMED, Google Scholar and Proquest 5000) using the search terms: transplant, kidney disease, renal, dialysis, haemodialysis, Indonesia and nursing. The search was limited to English and Indonesian language data sources from 1997 to 2007. Reference lists of salient academic articles were hand searched. The results of our search identified six articles that met our criteria. Costs are the major barrier to kidney transplant in Indonesia, followed by cultural beliefs, perception of the law, lack of information and lack of infrastructure. In addition, kidney disease prevention strategies are required. There are many complex socio-economic, geographical, legal, cultural and religious factors that contribute to low kidney transplant rates in Indonesia. Although an increase in transplantation rates will require strategies from various agencies, healthcare professionals, including nurses, can play a role in overcoming some barriers. Community education programmes, improving their own education levels and by increasing empowerment in nursing we may contribute to improved kidney transplant rates in Indonesia.

Keywords: Asia, Barriers, Chronic Kidney Disease, Community, Databases, Developing-Countries, Dialysis, Dialysis, Disease, Disease Prevention, Donors, Education, Google Scholar, Healthcare, Healthcare Professionals, Indonesia, Industry, Information, Kidney, Kidney Disease, Kidney Transplant, Literature, Literature Review, Nurses, Nursing, Organ Donation, Perception, Prevention, Pubmed, Quality-Of-Life, Recipients, Renal, Replacement Therapy, Review, Science, Stage Renal-Disease, Synergy, Transplant, Web of Science

? Woodbridge, M. and Bland, M. (2010), Supporting Indian nurses migrating to New Zealand: A literature review. *International Nursing Review*, **57** (1), 40-48.

Full Text: 2010\Int Nur Rev57, 40.pdf

Abstract: Background: New Zealand, like many other Western countries, is struggling to cope with increasing demands for nursing services. Registered nurses are being actively recruited internationally and New Zealand has become a popular destination for nurses who wish to emigrate, including those from India. These nurses have unique cultural, professional and educational needs yet it is unclear how to best support them as they move to their destination countries. Aims: The issues around nursing migration and its effects have been discussed in many forums, but there is evidence of a gap in understanding the issues around acculturation and socialization. This selected literature review sought to identify the significant factors that impact on migrating nurses becoming competent and confident registered nurses in the New Zealand practice environment. Methods: A bibliographical database search was undertaken (Web of Knowledge, Web of Science, CINAHL, MEDLINE, Academic Search Elite, and Ebscohost EJS) along with national and international nursing websites for the period 2002-2009. Search terms included Indian nurse, international nurse, migration, experience, cultural safety, globalization, nurse migration, nurse recruitment, New Zealand and research. The search was limited to texts published in English, with preference given to peer-reviewed research-based articles. Results: A significant volume of literature was located. The key themes that arose were migration, education, language, nursing skills, competence, cultural safety and reflection on practice. Literature considered to best reflect these main themes, and of most relevance to New Zealand, was selected for this review, with preference given to research reports and official nursing publications. Conclusion: Strategies such as providing ongoing professional education, ensuring cultural safety and offering mentoring in practice environments will contribute to a safe passage for migrating nurses. Further research is required into the acculturation and socialization of Indian nurses, especially those moving to New Zealand.

Keywords: Acculturation, Barriers, Bibliographical Database, Cultural Safety, Education, Environment, Experiences, Globalization, Impact, India, Internationally Educated Nurses, Knowledge, Literature, Literature Review, Methods, New Zealand, Nurse Migration, Nurses, Nursing, Nursing-Students, Practice, Professional, Publications, Recruitment, Research, Review, Safety, Science, Trends, Web of Knowledge, Web of Science, Websites

? Ergul, S., Ardahan, M., Temel, A.B. and Yildirim, B.Ö. (2010), Bibliometric review of references of nursing research papers during the decade 1994-2003 in Turkey. *International Nursing Review*, **57** (1), 49-55.

Full Text: [2010\Int Nur Rev57, 49.pdf](2010/Int%20Nur%20Rev57,%2049.pdf)

Abstract: Aim: To identify important information on the state of academic nursing and the characteristics of academic nursing publications in Turkey. Methods: The study consists of retrospective bibliometric research. The selected sample of the research consisted of six Turkish nursing journals published between 1994-2003 from a total population of ten journals. Seventy-four issues of these six journals were included and 825 research papers were analysed. A series of classic bibliometric indexes were used. Results: The average number of references per scientific paper is 16.19 [+/- standard deviation (SD) 8.56]. The changes in the number of references taken from journals over time do not show strong fluctuations but were statistically significant (P < 0.001). The average number of references per paper is 17.71 (+/- SD 8.09) for research papers, while it is 14.50 (+/- SD 8.76) for reviews. The Price’s index is 23.8% and the insularity index is 31.8%. Conclusions: The number of references used for papers has been increasing in recent years. The use of journals within references is high while the use of books is low. The Price’s index tendency is decreasing. The high insularity index observed in the articles may be considered as a negative indicator of nursing journals in Turkey.

Keywords: Analysis of References, Articles, Bibliometric, Bibliometric Indexes, Bibliometric Research, Bibliometrics, Books, Education, Impact, Journals, Nursing Research, Publications, Research, Research Papers, Review, Turkey

? Kiekkas, P., Theodorakopoulou, G., Spyratos, F. and Baltopoulos, G.I. (2010), Psychological distress and delusional memories after critical care: A literature review. *International Nursing Review*, **57** (3), 288-296.

Full Text: 2010\Int Nur Rev57, 288.pdf

Abstract: Background: A considerable number of intensive care unit (ICU) survivors report delusional memories, which refer to dreams, nightmares, paranoid delusions and hallucinations experienced in the ICU. These memories often have a strong vividness, long duration and high emotional impact. Aim: The aim of this review was to investigate and synthesize published literature about psychological distress associated with delusional memories of adult ICU survivors. Methods: Using key terms, a search was conducted in major health care electronic databases [Cumulative Index for Nursing and Allied Health Literature (CINAHL), PUBMED, Web of Science and PsycInfo] focusing on articles published between 1990 and 2009 in English-language journals. Findings: Ten articles met the inclusion criteria. Recall of delusional memories at various intervals after ICU discharge was associated with post-traumatic stress disorder (PTSD)-related symptoms in many studies, while associations with other aspects of psychological distress, mainly feelings of fear, anxiety and depression, were also reported. Recent studies did not seem to confirm the protective role of factual memories. Conclusions: The findings support the association between delusional memories and PTSD-related symptoms, but further research is needed to confirm their association with other psychological disorders. Development of a safety sense in the ICU can protect patients against the emotional impact of both delusional and stressful factual ICU memories. Appropriate follow-up of high-risk patients could improve their long-term psychological recovery.

Keywords: Adult, Anxiety, Care, Critical, Critical Care, Databases, Depression, Disorder, Distress, Experiences, Follow-Up, Hallucinations, Health, Health Care, High-Risk Patients, Hypothesis, Icu, Impact, Intensive, Intensive Care, Intensive Care Unit, Intensive-Care, International Issues, Journals, Literature, Literature Review, Methods, Nursing, Posttraumatic Stress, Posttraumatic Stress Disorder, Posttraumatic-Stress-Disorder, Psychological, Psychology, Pubmed, Quality-Of-Life, Research, Review, Safety, Science, Sedation, Stress, Symptoms, Trauma, Unit, Web of Science

? Peng, J. and Hui, Z.Y. (2011), Nursing research in three regions in China: A bibliometric study. *International Nursing Review*, **58** (1), 21-25.

Full Text: [2011\Int Nur Rev58, 21.pdf](2011/Int%20Nur%20Rev58,%2021.pdf)

Abstract: Objective: To analyse scientific papers published by Chinese authors in nursing journals included in the Science Citation Index Expanded and compare the published scientific papers from mainland China (ML), Taiwan (TW) and Hong Kong (HK). Methods: All articles published in 62 journals that were related to nursing originating from ML, TW and HK from 1999 to 2008 were retrieved from the PubMed and Institute for Scientific Information (ISI) Web of Knowledge database. The total number of articles published in nursing journals, impact factors and citation reports and articles were estimated for quantity and quality comparisons. Results: The number of articles from the three regions increased significantly from 1999 to 2008. There were 1015 articles in total from the three regions: ML (48), HK (414) and TW (553) in PubMed. In the ISI Web of Knowledge database, TW derived the highest total citations (1755 citations from 500 articles), followed by HK (1316 citations from 347 articles) and ML (158 citations from 55 articles). HK had the highest average citations of 3.79, followed by TW (3.51) and then ML (2.87). Discussion: The difference between the quantity and quality of nursing research articles published in ML, TW and HK is significant, although the gap appears to be narrowing. Long-term job stresses, low levels of education and language barriers are likely the main factors. ML, TW and HK have the same culture and ethnicity. We expect that ML will benefit significantly from increased exchanges with TW and HK in nursing research and education. We also speculate that TW and HK will benefit from exchanges because ML may have diverse nursing problems.

Keywords: Authors, Barriers, Bibliometric, Bibliometric Study, China, Chinese, Citation, Citations, Culture, Database, Education, Ethnicity, Hong Kong, Impact, Impact Factor, Impact Factors, Institute for Scientific Information, ISI, Journals, Mainland China, Mar, Nursing, Nursing Journals, Nursing Research, Papers, Pubmed, Quality, Quality of, Research, Science, Science Citation Index, Science Citation Index Expanded, Taiwan

? Traynor, M. (2011), Bibliometrics as politics: The case of emerging disciplines. *International Nursing Review*, **58** (1), 26-27.

Full Text: [2011\Int Nur Rev58, 26.pdf](2011/Int%20Nur%20Rev58,%2026.pdf)

Abstract: Academic nurses are increasingly turning to bibliometrics to assess the state and status of research publication in nursing in countries around the world. Early bibliometric studies were carried out by Cattell as part of a project to advance research in psychology in the early decades of the 20th century. There are some echoes in nursing’s moves to increase its standing over the last 40 years. The interpretation of bibliometric studies can reveal embedded values about academic disciplinary activity and normative views of scientific work. Patterns of publishing by nurse academics appear increasingly to resemble those in biomedicine as a whole.

Keywords: Advance, Bibliometric, Bibliometric Studies, Bibliometrics, Biomedicine, Mar, Nurses, Nursing, Nursing Research, Politics, Professionalization, Psychology, Publication, Publishing, Research, State, Work, World

# Title: International Orthopaedics

Full Journal Title: [International Orthopaedics](http://www.springerlink.com/content/100518/?p=3e34de20b2d040d9b9f920720509eaa0&pi=0)

ISO Abbreviated Title:

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ISSN:

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Impact Factor

? Changulani, M., Okonkwo, U., Keswani, T. and Kalairajah, Y. (2008), Outcome evaluation measures for wrist and hand - which one to choose? *International Orthopaedics*, **32** (1), 1-6.

Full Text: [2008\Int Ort32, 1.pdf](2008/Int%20Ort32,%201.pdf)

Abstract: The aim of this study was to critically analyse the various outcome measures available for assessing wrist and hand function. To this end, an extensive literature search was performed on Medline, PubMed and the Science Citation Index, focusing on terms associated with the method of development of the outcome measures item generation, item reduction, validity, reliability, internal consistency and their strengths and weaknesses. The most commonly used outcome measures described in literature were the DASH score (disability of shoulder, arm and hand questionnaire), the PRWE score (patient-rated wrist evaluation questionnaire), the Brigham and Women’s carpal tunnel questionnaire and the Gartland and Werley score. Our study provides very useful evidence to suggest that the PRWE score is the most responsive instrument for evaluating the outcome in patients with distal radius fractures, while the DASH score is the best instrument for evaluating patients with disorders involving multiple joints of the upper limb. The Brigham and Women’s score is a disease-specific outcome instrument for carpal tunnel syndrome; it has been validated and demonstrated to show good responsiveness and reliability in evaluating outcome in patients with carpal tunnel release. The Gartland and Werley score, although the most commonly described instrument in the literature for evaluating outcome after wrist surgery, has not been validated so to date.

Keywords: Arm, Citation, Development, Disability, Evaluation, Fracture, Literature, Medline, Questionnaire, Reduction, Reliability, Science, Science Citation Index, Shoulder, Surgery, Validity

? Ibrahim, T., Tleyjeh, I.M. and Gabbar, O. (2008), Surgical versus non-surgical treatment of chronic low back pain: A meta-analysis of randomised trials. *International Orthopaedics*, **32** (1), 107-113.

Full Text: [2008\Int Ort32, 107.pdf](2008/Int%20Ort32,%20107.pdf)

Abstract: We performed a meta-analysis of randomised controlled trials to investigate the effectiveness of surgical fusion for the treatment of chronic low back pain compared to non-surgical intervention. Several electronic databases (MEDLINE, EMBASE, CINAHL and Science Citation Index) were searched from 1966 to 2005. The meta-analysis comparison was based on the mean difference in Oswestry Disability Index (ODI) change from baseline to the specified follow-up of patients undergoing surgical versus non-surgical treatment. Of the 58 articles identified, three studies were eligible for primary analysis and one study for sensitivity analysis, with a total of 634 patients. The pooled mean difference in ODI between the surgical and non-surgical groups was in favour of surgery (mean difference of ODI: 4.13, 95%CI: -0.82 to 9.08, p = 0.10, I-2 = 44.4%). Surgical treatment was associated with a 16% pooled rate of early complication (95%CI: 12-20, I-2 = 0%). Surgical fusion for chronic low back pain favoured a marginal improvement in the ODI compared to non-surgical intervention. This difference in ODI was not statistically significant and is of minimal clinical importance. Surgery was found to be associated with a significant risk of complications. Therefore, the cumulative evidence at the present time does not support routine surgical fusion for the treatment of chronic low back pain.

Keywords: Articles, Change, Chronic, Citation, Clinical-Trials, Comparison, Databases, Disability, Effectiveness, Fusion, Groups, Instrumentation, Intensive Rehabilitation, Intervention, Medline, Meta-Analysis, Multicenter, Pain, Primary, Randomised Trials, Risk, Science, Science Citation Index, Sensitivity Analysis, Spondylolisthesis, Stabilization, Surgery, Swedish-Lumbar-Spine, Systematic Reviews, Treatment

# Title: International Peat Journal

(Int. Peat J.)

McLellan, J.K. and Rock, C.A. (1986), The application of peat in enviromental polution control: A review. *International Peat Journal*, **1**, 1-14.

# Title: International Psychogeriatrics

Full Journal Title: International Psychogeriatrics

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? Sampson, E.L., Ritchie, C.W., Lai, R., Raven, P.W. and Blanchard, M.R. (2005), A systematic review of the scientific evidence for the efficacy of a palliative care approach in advanced dementia. *International Psychogeriatrics*, **17** (1), 31-40.

Full Text: [2005\Int Psy17, 31.pdf](2005/Int%20Psy17,%2031.pdf)

Abstract: Background: Patients with dementia often receive poor end-of-life care, with inadequate pain control and without access to the palliative care services that patients with cancer are offered. This has been identified as an area of need in recent U.K. Government reports and by the Alzheimer’s Society (U.K.). Our objective was to perform a systematic review of the scientific literature regarding the efficacy of a palliative care model in patients with dementia. Methods: A systematic review was carried out to identify controlled trials that investigated the efficacy of palliative care in patients with dementia. Data sources included were MEDLINE, EMBASE, PsycINFO, CINAHL, British Nursing Index, AMED, Cochrane Database of Systematic Reviews, Web of Science, Cochrane Central Register of Controlled Trials, International Standard Randomised Controlled Trial register, the NHS Economic Evaluation Database and the System for Information on Grey Literature in Europe. Other data was sourced from hand searches of papers identified on electronic databases and review articles. Results: The search identified 30 review articles, but only four papers were eligible for full appraisal and only two of these met the full criteria for inclusion. These papers gave equivocal evidence of the efficacy for a palliative model of care in dementia. Conclusion: Despite the increased interest in palliative care for patients with dementia there is currently little evidence on which to base such an approach. This may in part be due to the ethical difficulties surrounding such research, prognostic uncertainty in clinicians and the lack of clear outcome measures for patients who are unable to express their needs or wishes. Further systematic research is urgently needed to educate an important and developing area of clinical practice.

Keywords: Alzheimer’S Disease, Alzheimers-Disease, Cancer, Caregivers, Clinician, Cochrane, Control, Databases, Death, Dementia, Efficacy, Embase, End-Of-Life Care, End-Stage Dementia, Europe, Evaluation, Families, Hospice, Interest, Literature, Metastatic Cancer, Methods, Model, Nursing, Of-Life Care, Outcome, Pain, Palliative Care, Papers, Practice, Research, Review, Science, Systematic, Systematic Review, Terminal Care, Web of Science

? Unutzer, J. (2009), Top cited papers in *International Psychogeriatrics*: 2. Quality adjusted life years in older adults with depressive symptoms and chronic medical disorders. *International Psychogeriatrics*, **21** (2), 265-267.

Full Text: [2009\Int Psy21, 265.pdf](2009/Int%20Psy21,%20265.pdf)

Keywords: Chronic Diseases, Collaborative Care, Cost, Health-Services, HMO, Major Depression, Management, Outcomes, Primary-Care Patients, Randomized Controlled-Trial

? Gauthier, S. and O’Brien, J. (2009), Top cited papers in *International Psychogeriatrics*: 3. Efficacy of donepezil on behavioral symptoms in patients with moderate to severe Alzheimer’s disease. *International Psychogeriatrics*, **21** (3), 454-456.

Full Text: [2009\Int Psy21, 454.pdf](2009/Int%20Psy21,%20454.pdf)

Keywords: BPSD, Memantine, Psychological Symptoms

? Gerdner, L.A. (2009), Top cited papers in *International Psychogeriatrics*: 4. Effects of individualized vs. classical “relaxation” music on the frequency of agitation in elderly persons with Alzheimer’s disease and related disorders. *International Psychogeriatrics*, **21** (4), 667-671.

Full Text: [2009\Int Psy21, 667.pdf](2009/Int%20Psy21,%20667.pdf)

Keywords: Dementia, Residents

? O’Brien, J.T. (2009), Top cited papers in *International Psychogeriatrics*: 5. A controlled study of repetitive transcranial magnetic stimulation as a treatment of depression in the elderly. *International Psychogeriatrics*, **21** (5), 855-860.

Full Text: [2009\Int Psy21, 855.pdf](2009/Int%20Psy21,%20855.pdf)

Keywords: Consensus Statement, Depression, Electroconvulsive-Therapy, Geriatric Depression, Late-Life Depression, Major Depression, Subcortical Hyperintensities, Subsyndromal Depression, Treatment Response, Vascular Depression, White-Matter Hyperintensities

? Ballard, C., Margallo-Lana, M., O’Brien, J.T., James, I., Howard, R. and Fossey, J. (2009), Top cited papers in international psychogeriatrics: 6A. Quality of life for people with dementia living in residential and nursing home care: the impact of performance on activities of daily living, behavioral and psychological symptoms, language skills, and psychotropic drugs. *International Psychogeriatrics*, **21** (6), 1026-1030.

Full Text: [2009\Int Psy21, 1026.pdf](2009/Int%20Psy21,%201026.pdf)

Keywords: Agitation, Disease, Facilities, Management, Nursing, Randomized-Trial

? Fuh, J.L. and Cummings, J.L. (2009), Top cited papers in *International Psychogeriatrics*: 6B. Behavioral disorders and caregivers’ reaction in Taiwanese patients with Alzheimer’s disease. *International Psychogeriatrics*, **21** (6), 1031-1036.

Full Text: [2009\Int Psy21, 1031.pdf](2009/Int%20Psy21,%201031.pdf)

Keywords: Abilities Screening Instrument, Chinese Version, Dementia Patients, Mental-State-Examination, Mild Cognitive Impairment, Neuropsychiatric-Inventory, Nursing-Home Residents, of-the-Literature, Older-Adults, Psychological Symptoms

? Han, L. and Ames, D. (2009), Top cited papers in *International Psychogeriatrics*: 6C. tracking cognitive decline in Alzheimer’s disease using the mini-mental state examination: A meta-analysis (“Mini” Is Not Necessarily Trivial!). *International Psychogeriatrics*, **21** (6), 1037-1040.

Full Text: [2009\Int Psy21, 1037.pdf](2009/Int%20Psy21,%201037.pdf)

Keywords: Care, Dementia, Efficacy

? Vasse, E., Vernooij-Dassen, M., Spijker, A., Rikkert, M.O. and Koopmans, R. (2010), A systematic review of communication strategies for people with dementia in residential and nursing homes. *International Psychogeriatrics*, **22** (2), 189-200.

Full Text: [2010\Int Psy22, 189.pdf](2010/Int%20Psy22,%20189.pdf)

Abstract: Background: The impairment of verbal skills of people with dementia challenges communication. The aim of this review was to study the effects of nonpharmacological interventions in residential and nursing homes on (1) communication between residents with dementia and care staff, and (2) the neuropsychiatric symptoms of residents with dementia. Method: PUBMED, PsychInfo, Web of Science, the Cochrane Library, and reference lists from relevant publications were systematically searched to find articles about controlled interventions with communication strategies. The data collected were pooled and subjected to a meta-analysis. Results: Nineteen intervention studies were selected for this review. They included structured and communicative “sessions at set times” for residents (e.g. life review) and communication techniques in activities of “daily care” applied by care staff (e.g. sensitivity to nonverbal communication). A meta-analysis of five set-time interventions (communication) and another meta-analysis of four set-time interventions (neuropsychiatric outcomes) found no significant overall effects. Individual set-time intervention studies report positive effects on communication when interventions are single-task sessions, like life review or one-on-one conversation. Interventions around daily care activities had positive effects on communication outcomes. Effects of both types of interventions on neuropsychiatric symptoms were divergent. Conclusion: This review indicates that care staff can improve their communication with residents with dementia when strategies are embedded in daily care activities or interventions are single-task sessions at set times. These results offer the possibility of improving the quality of care, but not of directly reducing neuropsychiatric symptoms. More research is needed to study the effect of communication interventions on neuropsychiatric symptoms.

Keywords: Activities, Alzheimers-Disease, Assistants, Caregivers, Clinical-Trial, Cochrane, Cognitive Impairment, Communication, Dementia, Homes, Intervention, Intervention Studies, Interventions, Meta-Analysis, Metaanalysis, Morning Care, Neuropsychiatric Symptoms, Nonpharmacological Intervention, Nursing, Nursing Homes, Outcomes, Program, Psychosocial Intervention, Publications, Quality of Care, Research, Residential, Residential Facilities, Residents, Review, Science, Symptoms, Systematic, Systematic Review, Therapy, Web of Science

? Pitfield, C., Shahriyarmolki, K. and Livingston, G. (2011), A systematic review of stress in staff caring for people with dementia living in 24-hour care settings. *International Psychogeriatrics*, **23** (1), 4-9.

Full Text: [2011\Int Psy23, 4.pdf](2011/Int%20Psy23,%204.pdf)

Abstract: Background: Family carers of people with dementia are at risk of psychological morbidity, and it is suggested that this may also be the case in paid carers as caring for people with dementia can be emotionally and physically demanding. Care homes have historically had difficulty recruiting and retaining staff, and job stress has previously been linked to high turnover amongst long-term care staff. We performed a systematic review of studies of the prevalence of psychological stress in staff caring for people with dementia in residential long-term care settings. Methods: We conducted a comprehensive literature search of MEDLINE, PsychINFO and Web of Science databases up to May 2009, supplemented by a search of the references of all relevant articles. Search terms encompassed nursing staff, residential care and psychological distress. Validity of studies was graded by two authors independently using a standardized checklist. Results: We identified 601 studies of which five met our inclusion criteria. Two studies reported on prevalence rates of staff distress and found 37% and 5% levels of being “at risk” from burnout, four studies reported mean stress scores and all were low. Conclusions: All studies were either small or used instruments with unsatisfactory psychometric properties and so our conclusions are limited by the lack of good quality evidence. The preliminary evidence suggests that most staff who remain working in homes do not have a high prevalence of psychological stress or level of symptoms.

Keywords: Attitudes, Authors, Burnout, Burnout, Care, Caregivers, Carers, Databases, Dementia, Distress, Homes, Homes, Job Strain, Laser-Ad, Literature, Long-Term Care, Medline, Methods, Morbidity, Nursing, Nursing Staff, Old Age, Prevalence, Psychological Stress, Residential, Residents, Review, Risk, Satisfaction, Science, Stress, Symptoms, Systematic, Systematic Review, Web of Science, Workers

? Lapp, L.K., Agbokou, C. and Ferreri, F. (2011), PTSD in the elderly: The interaction between trauma and aging. *International Psychogeriatrics*, **23** (6), 858-868.

Full Text: [2011\Int Psy23, 858.pdf](2011/Int%20Psy23,%20858.pdf)

Abstract: Background: Because an increasingly large cohort of individuals is approaching their elderly years, there is concern about how the healthcare system will cope with the greater demands placed upon it. One area of concern is the impact of trauma and post traumatic stress disorder (PTSD) in the aged. Although several reviews have highlighted the lack of knowledge and research on the topic, there still remain gaps in the literature. Nevertheless, some recent behavioral, endocrinological and neuroimaging studies may provide new insights into the discussion. The central aims of this paper are to summarize the etiological, epidemiological and clinical aspects of PTSD, trauma, and the elderly, and to integrate this knowledge with (i) what is known about PTSD in adults, and (ii) the behavioral, hormonal and cerebral changes associated with healthy aging. Methods: A comprehensive search was performed with ISI Web of Science and PUBMED for articles pertinent to the psychology and biology of PTSD, trauma, and the elderly. Results: There exist both significant similarities and differences between adults and elderly with PTSD concerning cognitive and biological profile. Evidence suggests that PTSD in the elderly does not follow a simple clinical trajectory. Conclusions: PTSD in the elderly must be considered within the context of normal aging. Strong claims about an interaction between PTSD and aging are difficult to make due to sample heterogeneity, but it is clear that PTSD in this age group presents unique aspects not seen in younger cohorts. Further research must integrate their studies with the biological, psychological, and social changes already associated with the aging process.

Keywords: Adults, Aged, Aging, Biology, Case Series, Combat Veterans, Disorder, Elderly, Former Prisoners, Hippocampal Volume, Holocaust Survivors, Impact, ISI, Knowledge, Literature, Methods, Myocardial-Infarction, Normal, Older-Adults, Posttraumatic-Stress-Disorder, Profile, Ptsd, Pubmed, Research, Risk-Factors, Science, Social, Stress, Trajectory, Trauma, War-II Survivors, Web of Science

? Robinson, L., Gemski, A., Abley, C., Bond, J., Keady, J., Campbell, S., Samsi, K. and Manthorpe, J. (2011), The transition to dementia - individual and family experiences of receiving a diagnosis: A review. *International Psychogeriatrics*, **23** (7), 1026-1043.

Full Text: [2011\Int Psy23, 1026.pdf](2011/Int%20Psy23,%201026.pdf)

Abstract: Background: Consensus recommends early recognition of memory problems through multi-disciplinary assessment in memory clinics; however, little is known about the experiences of people accessing such services. The aim of this review was to synthesis empirical evidence on patient and carer experiences in the transition to dementia. Methods: This review updates an earlier review (Bamford et al., 2004) on the topic of disclosure of the diagnosis of dementia. Key electronic databases were searched including OVID Medline, CINAHL, Web of Science, EMBASE, and Sociological Abstracts; this was supplemented by hand searching of reference lists and contact with experts in the field. Only papers published after 2003 were included. Results: of the 35 papers included in the review, only one study observed the process of disclosure and only two papers explored the effects on the person with dementia’s health. The vast majority of people with dementia wished to know their diagnosis. The key challenges for the person with dementia were coming to terms with losses on multiple levels. Although there may be short-term distress, the majority of people with dementia do not appear to experience long-term negative effects on their psychological health. For family carers, becoming the main decision-maker and adjusting to increased responsibility were common concerns. Conclusions: There is still little empirical research observing the process of diagnostic disclosure in dementia. Studies exploring the views of patients and their families suggest this should be an ongoing process with the provision of support and information tailored to individual needs. The term “Alzheimer’s disease” appears to have more negative connotations than the word “dementia”.

Keywords: Alzheimers-Disease, Assessment, Attitudes, Caregivers, Carers, Databases, Dementia, Diagnosis, Disclosure, Distress, Embase, Families, Family, Hand, Impact, Information, Life, Memory, Methods, Mild Cognitive Impairment, Papers, Patients, Perspectives, Primary-Care, Psychological, Research, Review, Science, Sense, Web of Science

# Title: International Review of Administrative Sciences

Full Journal Title: [International Review of Administrative Sciences](http://ras.sagepub.com/content/by/year)

ISO Abbreviated Title:

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? Hu, G.W., Pan, W.W. and Wang, J. (2010), The distinctive lexicon and consensual conception of e-Government: An exploratory perspective. *International Review of Administrative Sciences*, **76** (3), 577-597.

Full Text: [2010\Int Rev Adm Sci76, 577.pdf](2010/Int%20Rev%20Adm%20Sci76,%20577.pdf)

Abstract: Presently, the field of e-Government still lacks a coherent identity. For its future development, it would be useful to identify a distinctive lexicon and widely shared conception to help scholars understand its essence. In this study, exploratory work was conducted using a large-scale survey of e-Government articles from 1993 to 2008. A total of 752 abstracts from the world’s leading databases (i.e. Science Citation Index Expanded (SCIE), Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI) and Conference Proceedings Citation Index-Science (CPCI-S)) were retrieved, and 528 were analyzed using Computer-Aided Text Analysis (CATA) software. Based on the content analysis, a widely shared conception of the field held by its members was determined and a methodology to obtain a consensual definition of an academic field was designed.

Keywords: Citation, Cities, Conceptual Construction, Consensual Conception, E-Govemment, E-Government, Electronic Government, Firm, Issues, Knowledge, Lexicographic Analysis, Management, Opinion, Public Administration, Public-Services, Science Citation Index, Science Citation Index Expanded, Semantic Reasoning, United-States

# Title: International Review of Chemical Engineering

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Impact Factor

? Giraldo, L. and Moreno-Piraján, J.C. (2010), Removal of copper(II) from aqueous solutions with activated carbon obtained by chemical activation of orange peel. *International Review of Chemical Engineering*, **July**.

Abstract: Activated carbons (ACs) were prepared by pyrolysis of orange peel in the presence of zinc chloride (ZnCl2) (chemical activation). Orange peel from the Colombian orange cultivar was impregnated with aqueous solutions of ZnCl2 following a variation of the incipient wetness method. Different concentrations were used to produce impregnation ratios of 40, 70, 110 and 160 wt%. Activation was carried out under an argon flow at a temperature of 823 K with a 4 h soaking time. The porous texture of the obtained ACs was characterized by physical adsorptions of N2 at 77 K and CO2 at 273 K. The impregnation ratio had a strong influence on the pore structure of these ACs, which could be easily controlled by simply varying the proportion of ZnCl2 used in the activation. Thus, a low impregnation ratio led to essentially microporous ACs. At intermediate impregnation ratios, ACs with a wider pore size distribution (from micropores to mesopores) were obtained. Finally, high impregnation ratios yielded essentially mesoporous carbons with a large surface area and pore volume. The four best-fit three-parameter isotherms Sips, Toth, Prausnitz-Radke and Vieth-Sladek suggest that the adsorption capacity of activated carbons from orange peel for copper ions was 63 mg/g.

Keywords: Orange Peel, Adsorption, Surface Area, Activated Carbon, Langmuir, Prausnitz-Radlke

# Title: International Review of Psychiatry

Full Journal Title: International Review of Psychiatry

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? White, C.J., de Burgh, H.T., Fear, N.T. and Iversen, A.C. (2011), The impact of deployment to Iraq or Afghanistan on military children: A review of the literature. *International Review of Psychiatry*, **23** (2), 210-217.

Abstract: The aim of this review is to evaluate what is known about the impact on children of parental deployment to Iraq or Afghanistan. We searched for relevant studies with a minimum sample size of 50 which were published between 2003 and 2010 using Google Scholar, MEDLINE, PUBMED, PsycINFO and Web of Science. Bibliographies of retrieved articles were also searched. Nine US-based studies were identified for inclusion in the review, five were cross-sectional, two were longitudinal and two were analyses of routinely collected data. Researchers found an increase in emotional and behavioral problems in children when a parent was deployed. Several mediating factors were identified, such as the family demographics and the number and duration of parental deployments. Parental psychopathology was most consistently identified as a risk factor for childhood emotional and behavioral disorders in the research. Limitations of the current research and subsequent recommendations for future research are also outlined.

Keywords: Army, Behavior, Bibliographies, Children, Families, Google Scholar, Impact, Induced Separation, Literature, Maltreatment, Medline, Parent, Parental Deployment, Pubmed, Research, Researchers, Resilience, Review, Risk, Science, Service Members, Veterans, Web of Science, Young-Children

# Title: International Society for Fluoride Research

Full Journal Title: International Society for Fluoride Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Phantumvanit, P. and LeGeros, R.Z. (1997), Characteristics of bone char related to efficacy of fluoride removal from highly fluoridated water. *International Society for Fluoride Research*, **30** (4), 207-218.

# Title: International Sportmed Journal

Full Journal Title: International Sportmed Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Schwabe, K., de Villiers, R., Collins, M. and Schwellnus, M.P. (2007), Achilles tendon blood flow changes in response to acute exercise. *International Sportmed Journal*, **8** (3), 117-140.

Abstract: Objective: This review examines the relationship between symptoms/signs of Achilles tendon injury and changes in morphology and blood flow in the tendon and also the effects of an acute exercise bout on morphology and blood flow in the Achilles tendon. Data sources: PUBMED and ISI Web of Science were searched from 1983 to 2007 using the terms Achilles tendon, blood flow and vascular, disease, imaging and ultrasound, and exercise. Additionally, the references of papers identified through this search were examined for relevant studies. Study section: One hundred and fourteen studies were identified that examined Achilles tendon disorders, risk factors for disease, and imaging of the Achilles tendon. A further twenty-four studies were identified that looked at the vascularity of the Achilles tendon, the association of the vascularity with symptoms and pathology, and the effect of exercise on tendon vascularity. Data extraction: Studies were critically evaluated and summarised in this review. No meta-analytic procedures were performed. Data synthesis: There is not always a clear relationship between morphological changes and the presence of symptoms and signs. The majority of studies show that there is a relationship between neovacularisation and chronic painful tendinosis. However, more recent studies show no association between tendon symptoms and the presence on neovascularisation. Studies show an increase in the blood flow in the Achilles tendon in response to exercise. Conclusions: Some, but not all, studies show an association between neovascularisation and chronic painful tendons. Studies show that blood flow in a tendon increases in response to an acute bout of exercise, and that this returns back to normal post-exercise and that this response may not always be pathological. Future studies should examine the long-term consequences of this repeated transient increase in tendon blood flow in response to an acute exercise bout. The precise mechanism for these changes in blood flow will also require further investigation.

Keywords: Achilles Tendon, Badminton Players, Blood, Blood Flow, Color Doppler, Disease, Exercise, Imaging, Injury, Intrinsic Risk-Factors, Ironman Triathlon, ISI, Mechanism, Normal, Papers, Patellar Tendons, Pathology, Peritendinous Tissue, Power Doppler, Pubmed, Review, Risk, Risk Factors, Science, Skeletal-Muscle, Surgical Findings, Symptoms, Tendon, Ultrasound, Ultrasound Stimulation, Web of Science

# Title: International Studies Perspectives

Full Journal Title: International Studies Perspectives

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Sillanpaa, A. and Koivula, T. (2010), Mapping conflict research: A bibliometric study of contemporary scientific discourses. *International Studies Perspectives*, **11** (2), 148-171.

Abstract: This paper employs bibliometric methods to map the structure of conflict research. Citation information is restructured by means of cluster and network analyses for the purpose of identifying the different discourses and fields contributing to conflict research. The data are derived from more than 1,300 articles published in 40 high-quality journals between 2000 and 2006. Four main discourses are identified within the field, and it is concluded that Democratic Peace Theory constitutes a powerful discursive core of contemporary conflict research, affecting most other discourses as well. It is suggested that instead of systemic foci, contemporary conflict research is dominated by the investigation of dyadic forms of interaction and that, somewhat surprisingly, the substantive focus of the most frequently cited research has remained on interstate war. The study intends to help researchers to be sensitive to gaps and focal points in contemporary research, and promote further discussion about the current state of the field. Applied approach provides academics, students, and practitioners with a usable and transparent procedure for structuring discourses and communicating about them further.

Keywords: Bibliometric, Bibliometrics, Citation, Citation Analysis, Citation Analysis, Civil-War, Cocitation Analysis, Conflict Research, Democracy, Disputes, Domestic Conflict, Economic Interdependence, International Conflict, Journals, Liberal Peace, Research, Researchers, Scientific Discourse, Trade

# Title: International Studies Quarterly

Full Journal Title: International Studies Quarterly

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Lake, D.A. (2010), Rightful rules: Authority, order, and the foundations of global governance. *International Studies Quarterly*, **54** (3), 587-613.

Full Text: [2010\Int Stu Qua54, 587.pdf](2010/Int%20Stu%20Qua54,%20587.pdf)

Abstract: Global governance is an important and increasingly popular topic of inquiry. Nonetheless, existing research remains too statist, privileging states and limiting other forms of governance to the interstices of state power. Drawing on social contract theory, I offer an alternative approach that begins with the central role of authority in political life and develops a synthetic understanding of governance that applies equally to its myriad forms. I argue that we have, as a discipline, relied on a formal-legal conception of authority that is inappropriate to an international setting and has unduly limited enforcement to violence. I propose that global governance and its many forms can be understood and unified by a concept of relational authority, which treats authority as a social contract in which a governor provides a political order of value to a community in exchange for compliance by the governed with the rules necessary to produce that order. This conception of relational authority is followed by three illustrations of its central logic in (i) state-to-state hierarchy by the United States over Caribbean states, (ii) supranational authority by the World Trade Organization over member states, and (iii) private authority by credit rating agencies over corporations and sovereign borrowers. The conclusion outlines the research agenda that follows from this approach.

Keywords: Anarchy, Choice, Institutions, Politics, Power, Research

# Title: International Sugar Journal

Full Journal Title: International Sugar Journal

ISO Abbreviated Title: Int. Sugar J.

JCR Abbreviated Title: Int Sugar J

ISSN: 0020-8841

Issues/Year: 12

Journal Country/Territory: Wales

Language: English

Publisher: Int Sugar Journal Ltd

Publisher Address: PO Box 26N St Port Talbot, West Glamorgan SA13 1NX, Wales

Subject Categories:

Agriculture Food Science & Technology: Impact Factor

? Abdel Kader, A., Aly, A.N.H. and Girgis, B.S. (1996), Bone char decolorization efficiency: A laboratory study over four consecutive cycles. *International Sugar Journal*, **98** (1174), 546-548.

# Title: International Symposium on Extraction and Processing for the Treatment and Minimixation of Wastes

? Green, D.H. *et al.* (1994), A technical and economic comparison between conventional precipitation and membrance-midia treatment of the wastewater at the ASARCO Globe Plant, Denver, Colorado. *International Symposium on Extraction and Processing for the Treatment and Minimixation of Wastes*, February 27 – March 3, in San Francisco, California.

# Title: International Symposium on Peat/Peatland

Morine, G., King, P., Spigarelli, S. and Marken, J. (1989), Adsorption of aqueous Cu(II) and Cr(III) ions on peat and processed peats. *International Symposium on Peat/Peatland*, 302-309.

# Title: Introduction to the Principles of Heterogeneous Catalysis

Academic Press, New York

? Thomas, J.M. and Thomas, W.J. (1967), *Introduction to the Principles of Heterogeneous Catalysis*, Academic Press Inc., London, 32.

# Title: International Urology and Nephrology

Full Journal Title: International Urology and Nephrology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Diokno, A.C. (2010), Editorial comment: Hippocratic Oath and plagiarism. *International Urology and Nephrology*, **42** (3), 709.

Keywords: Plagiarism

# Title: International Urogynecology Journal

Full Journal Title: International Urogynecology Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Cartwright, R. and Cardozo, L. (2007), What is the best method of assessing academic performance in urogynaecology? Comparison of peer evaluation and bibliometric indices. *International Urogynecology Journal*, **18** (S1), S97-S98.

# Title: Introduction to Wastewater Treatment Processes

Academic Press Inc., London

Ramalho, R.S. (1983), *Introduction to Wastewater Treatment Processes*, Academic Press Inc., London.

# Title: Investigational New Drugs

Full Journal Title: [Investigational New Drugs](http://www.kluweronline.com/issn/0167-6997/)

ISO Abbreviated Title: Invest. New Drugs

JCR Abbreviated Title: Invest New Drug

ISSN: 0167-6997

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Kluwer Academic Publ

Publisher Address: Spuiboulevard 50, PO Box 17, 3300 AA Dordrecht, Netherlands

Subject Categories:

Oncology: Impact Factor 2.842, 34/114 (2001)

Pharmacology & Pharmacy: Impact Factor181 (2000)

? Wojtowiczpraga, S.M., Dickson, R.B. and Hawkins, M.J. (1997), Matrix metalloproteinase inhibitors. *Investigational New Drugs*, **15** (1), 61-75.

Abstract: The matrix metalloproteinases (MMPs) are a family of at least fifteen secreted and membrane-bound zinc-endopeptidases. Collectively, these enzymes can degrade all of the components of the extracellular matrix, including fibrallar and non-fibrallar collagens, fibronectin, laminin and basement membrane glycoproteins. MMPs are thought to be essential for the diverse invasive processes of angiogenesis and tumor metastasis. Numerous studies have shown that there is a close association between expression of various members of the MMP family by tumors and their proliferative and invasive behavior and metastatic potential. In some of human cancers a positive correlation has also been demonstrated between the intensity of new blood vessel growth (angiogenesis) and the likelihood of developing metastases. Thus, control of MMP activity in these two different contexts has generated considerable interest as a possible therapeutic target. The tissue inhibitors of metalloproteinases (TIMPs) are naturally occurring proteins that specifically inhibit matrix metalloproteinases, thus maintaining balance between matrix destruction and formation. An imbalance between MMPs and the associated TIMPs may play a significant role in the invasive phenotype of malignant tumors. TIMP-1 has been shown to inhibit tumor-induced angiogenesis in experimental systems. These findings raised the possibility of using an agent that affects expression or activity of MMPs as an anti-cancer therapy. TIMPs are probably not suitable for pharmacologic applications due to their short half-life in vivo. Batimastat (BB-94) and marimastat (BB-2516) are synthetic, low-molecular weight MMP inhibitors. They have a collagen-mimicking hydroxamate structure, which facilitates chelation of the zinc ion in the active site of the MMPs. These compounds inhibit MMPs potently and specifically. Batimastat was the first synthetic MMP inhibitor studied in humans with advanced malignancies, but its usefulness has been limited by extremely poor water solubility, which required intraperitoneal administration of the drug as a detergent emulsion. Marimastat belongs to a second generation of MMP inhibitors. In contrast to batimastat, marimastat is orally available. Both of these agents are currently in Phase I/II trials in US, Europe and Canada. Some other new agents, currently in clinical trials, have been shown to inhibit MMP production. Bryostatins, naturally occurring macrocyclic lactones, have both in vitro and in vivo activity in numerous murine and human tumors. In culture, bryostatin-l has been shown to induce differentiation and halt the growth of several malignant cell lines. While the exact mechanism responsible for anti-tumor activity is unclear, an initial event in the action of bryostatin-l is activation of protein kinase C (PKC), followed by its down regulation. Bryostatin-l does not directly affect the activity of MMPs, but it can inhibit the production of MMP-1, 3, 9, 10 and 1 1 by inhibiting PKC. TIMP-1 levels could also be modulated by bryostatin-l, as it is encoded by a PKC responsive gene.

Keywords: Matrix Metalloproteinase Inhibitors, Angiogenesis, Human Malignancies, Clinical Trials, human tissue inhibitor, abdominal aortic-aneurysm, melanoma cell-adhesion, IV collagenase, gelatinase-A, breast-cancer, tumor-cells, human colon, in-vivo, interstitial collagenase

# Title: In Vitro Cellular and Developmental Biology-Animal

? Nicholson, D.L., Maier, R.H. and Pories, W.J. (1993), Zinc-enhanced cytotoxicity in cisplatin sensitive and resistant human ovarian-cancer cells. *In Vitro Cellular and Developmental Biology-Animal*, **29A** (8), 625-626.

# Title: Investigación Bibliotecológica

Full Journal Title: [Investigacion Bibliotecologica](http://www.ejournal.unam.mx/cuadros2.php?r=13)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Costas, R. and Bordons, M. (2007), Algorithms to solve the lack of normalization in author names in bibliometric studies. *Investigación Bibliotecológica*, **21** (42), 13-32.

Full Text: Inv Bib21, 13.pdf

Abstract: Two algorithms to detect and solve normalization problems of author names in data originated in Thomson’s ISI Science Citation Index are presented. The first algorithm allows detection of different names which could belong to the same person. The second One, based on the degree of similarity between two variants of the same name on a document, helps to determine whether two similar names correspond or not to the same person. In order to determine the efficacy of the algorithms, a control of normalized author data from a previous study has been used. The First algorithm detects 67% of name variants existing in the Population under study, and the second one was successful in 74% of the cases.

Keywords: Algorithms, Author Name Normalization, Bibliometric, Bibliometric Studies, Citation, Citation Index, Medline, Model, Name Variations, Science, Science Citation Index, Similarity, Thomson Isi

? Portal, S.G. (2007), Foremost Latin American journals in library and information science: Their subject and geographic dissemination and concentration. *Investigación Bibliotecológica*, **21** (42), 79-108.

Full Text: Inv Bib21, 79.pdf

Abstract: A study is presented on the principal Latin American scientific journals in library and information science processed by the INFOBILA System. Starting from the most productive publication nucleus, the level of dissemination attained by these journals in the main commercial data bases and specialized services (ULRICH, LISA, ISA, LL and others) is determined, and their subject and geographic concentration, through the application of Pratt’s Index, is also shown. Application of this indicator in these disciplines in the Latin American region reveals a high Subject dispersion and a high geographic concentration among the 25 “key” journals studied, while the correspondence analysis between the subject and the Country of edition of the journals corroborates these patterns of behavior, as indicated by the spatial distribution between these two variables.

Keywords: Analysis, Bibliometric Survey, Correspondence Analysis, Geographic Concentration, Information Science, Journals, Latin American Region, Library and Information Science, Library and Information Science Periodicals, Pratt’S Index, Publication, Science, Scientific Journals, Subject Concentration

? Miguel, S., Moya-Anegon, F. and Herrero-Solana, V. (2007), Co-citation analysis as research method in Library Information Science. *Investigación Bibliotecológica*, **21** (43), 139-155.

Full Text: Inv Bib21, 139.pdf

Abstract: The pertinence and Utility of co-citation analysis as a research method in Library and Information Science (LIS) are shown by means of bibliometric nd content analysis of the main works published on this topic. The size and evolution of the literature are analysed, as well as the documentary typology and the subject of the journals where the main contributions are published. The most frequently used methods and techniques for the analysis and visualization of the knowledge structures of scientific domains are described, and the proposed models of maps are presented. Some of the applications and possible uses of the results of these analyses are shown, as well as their advantages and limitations.

Keywords: Analysis, Author Cocitation, Bibliometric, Bibliometrics, Co-Citation, Co-Citation Analysis, Cocitation Analysis, Content Analysis, Decision-Support Systems, Domains, Intellectual Structure, Journals, Knowledge, Library and Information Science, Literature, Literatures, Representation, Research, Research Methods, Retrieval, Scholarly Communication, Science, Science Maps, Visualization

? Alvarado, R.U. and Suarez, J. (2008), Epidemic theory in the literature on Lotka’s law. *Investigación Bibliotecológica*, **22** (46), 91-111.

Full Text: Inv Bib22, 91.pdf

Abstract: The objective of the present study is to analyse the epidemic model as a deterministic process represented by a system of differential equations and apply it to authors producing literature on Lotka’s law from 1922 to 2005. An epidemic process starting in 1965 and showing a high rate or transient authors is observed. Those authors publishing in languages different from English found the area already infected.

Keywords: Authors, Authors’ Productivity, Bibliometrics, Communication, Epidemic, Epidemic Process, Goffman’s Law, Growth, Ideas, Infected, Informetrics, Languages, Law, Literature, Lotka’s Law, Mathematical Approach, Model, Objective, Process, Publishing, Scientometrics, Spread, Transient

? Sierra-Flores, M.M. and Barnard, J.M.R. (2009), The most productive research groups of the National Autonomous University of Mexico (UNAM) in the area of physics, 1990-1999. *Investigación Bibliotecológica*, **23** (48), 127-155.

Full Text: Inv Bib23, 127.pdf

Abstract: In today’s world knowledge exchange and scientific collaboration have become fundamental for the scientific development of countries. Consequently, the study of collaboration and its characteristics should constitute an element of analysis and evaluation for regional and national organizations, as well as for science policy units associated with universities. Bibliometrics is one of the techniques applied to the study of collaboration, which has permitted the identification of research groups and their dynamics over time. Although many Studies have been carried Out on collaboration, these have been primarily at macro level; few are available on more micro levels of analysis within universities. For this reason, the present paper focuses on the application of metric indicators for the Study of physics research at the National Autonomous University of Mexico (UNAM) and its characteristic specialists groups in the decade of the 90s. In particular, the characteristics of the highly productive research groups (GIMP) and their evolution are explored. The results and the methodology applied can be extrapolated to other knowledge areas and can be used as a point of comparison and evaluation for other disciplines at the UNAM and like universities.

Keywords: Bibliometric Indicators, Bibliometrics, Collaboration, Cooperation, Evaluation, Groups, Indicators, Physics, Research, Science, Scientific Co-Authorship, Scientific Collaboration, UNAM, Universities

? Portal, S.G. and Uriza, M.A. (2009), Serialized *Journals on Library and Information Science*: Current status. *Investigación Bibliotecológica*, **23** (48), 179-209.

Full Text: Inv Bib23, 179.pdf

Abstract: A general overview of serialized journals on Library and Information Science is provided based on their bibliometric behavior in sources such as ULRICH’S and JCR-SSCI; additionally, using the specialized services of the Library and Information Sciences Abstracts (LISA), in accord with the Bradford Mathematical Model, a nucleus of the most “productive” journals is identified. The journals making up this nucleus are assessed in accord with the algorithm developed by Ali, Young and Ali.

Keywords: Bibliometrics, Citation Analysis, Evaluation of Scientific Journals, Library and Information Sciences, Scientific Journals

# Title: Inzynieria Chemiczna I Procesowa

Full Journal Title: Inzynieria Chemiczna I Procesowa

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0208-6425

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chojnacka, K. and Noworyta, A. (2001), Mechanism of heavy metal ions biosorption by a blue-green alga *Spirulina* sp. *Inzynieria Chemiczna I Procesowa*, **22** (3B), 331-336.

Abstract: The paper presents research carried on biosorption of heavy metals mechanism recognition, particularly Cr3+, Cd2+ and Cu2+, carried by a blue-green alga *Spirulina* sp. cultivated in photoautotrophic and mixotrophic and manner, as well as cell lyophilisate. 4 hypothetical biosorption mechanisms were considered: sorption, microprecipitation, ion exchange and metal uptake into the cell’s interior. Performed experiments revealed dominating mechanism of ion exchange.

? Zapala, W. and Petrus, R. (2001), Mathematical modelling of the effect of modifier concentration with the use of stoichiometric sorption kinetics. *Inzynieria Chemiczna I Procesowa*, **22** (3E), 1531-1536.

Abstract: The aim of this paper is to present preliminary results of the mathematical analyse of the effect of modifier concentration in mobile phase on the retention of chromatographic peaks in the case of chromatographic separation of ortho- and para- chloronitrobenzene isomers with the use of multicomponent eluent. The analysis was conducted basing on mathematical model of chromatographic column with the stechiometric kinetic equation.

Keywords: Analysis, Concentration, Kinetic, Kinetics, Mathematical Model, Model, Modelling, Paper, Retention, Separation, Sorption, Sorption Kinetics

? Rogacki, G., Modrzejewska, Z. and Wawrzyniak, P. (2004), Formation of chitosan microgranules in supercritical drying process. *Inzynieria Chemiczna I Procesowa*, **25** (2), 375-380.

? Gluszcz, P., Zakrzewska, K. and Ledakowicz, S. (2004), Mercury sorption from aqueous solutions: Equilibrium and kinetics. *Inzynieria Chemiczna I Procesowa*, **25** (3), 889-894.

Abstract: The results of the equilibrium and kinetics investigations for the process of mercury sorption from aqueous solutions onto seven different types of active carbon are presented. The effective diffusion coefficients in the particles were obtained from the transient-state sorption experiments and the isotherms, saturation capacity of the sorbents and its dependence on the temperature and pH were identified.

? Kaminski, W., Tomczak, E. and Jaros, K. (2007), Sorption kinetics of heavy metal ions from multicomponent solutions on a chitosan sorbent. *Inzynieria Chemiczna I Procesowa*, **28** (3), 725-734.

Abstract: The aim of this study was to determine and formulate equations describing the sorption kinetics of copper(II), chromium(VI) and zinc(II) ions in a glass column filled with chitosan beads in water solutions. The sorption efficiency of single ions and ions in mixtures has been analysed.

Keywords: Adsorption

# Title: Ion Exchange

McGraw-Hill, New York

Helfferich, F. (1962), *Ion Exchange*, McGraw-Hill, New York.

# Title: Ion Exchange and Adsorption

Full Journal Title: Ion Exchange and Adsorption

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1001-5493

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhan, Y.Z., Yang, X.D. and Li, Y.B. (2006), Adsorption characteristic of congo red and crystal violet onto sawdust. *Ion Exchange and Adsorption*, **22** (2), 134-139.

Full Text: [2006\Ion Exc Ads22, 134.pdf](2006/Ion%20Exc%20Ads22,%20134.pdf)

Abstract: The adsorption characteristics of Congo red and crystal violet onto sawdust were investigated by static adsorption method. The result shows that the sawdust is effective low cost adsorbent with high removal of dyes. The best percent color removal of these two dyes is about 96%. The crystal violet adsorption by sawdust is almost unaffected by pH in the range 4-10. With the increase of pH, the color removal decreases slowly from 96.6% to 91.1%. The system pH plays significant role in Congo red adsorption. As pH increase from 4 to 7, the color removal increases rapidly from 22.5% to max 96.0%, and then decreases slowly to 91.4% as the increase of pH. The adsorption isotherm of two dyes can be well fitted the Freundlich equation. The adsorption kinetics can be well described by the pseudo-second order kinetics model. The parameters of adsorption isotherm and kinetics are calculated.

Keywords: Dye, Adsorption, Sawdust, Adsorption Isotherm, Pseudo-Second Order Kinetics

# Title: Ion Exchange Developments and Applications

The Royal Society of Chemistry,

Weatherley, L.R., Aker, G.A. and Al-Duri, B. (1996), Acid dye removal from textile industry effluent using biologically active carbon adsorbent. in *Ion Exchange Developments and Applications*, (Edited by Greig, J.A.), The Royal Society of Chemistry, 120-127.

Webb, M. (1996), Synthtic clay anion exchangers: Their structure, modification and application in removing colour and toxins from textile process waters. in *Ion Exchange Developments and Applications*, (Edited by Greig, J.A.), The Royal Society of Chemistry, 135-142.

Ulmanu, M., Segarceanu, T., Vasiliu, C. ans Anger, I. (1996), Removal of copper from dilute aqueous solutions by adsorbent and ion exchange materials. in *Ion Exchange Developments and Applications*, (Edited by Greig, J.A.), The Royal Society of Chemistry, 151-159.

Cortina, J.L., Miralles, N. and Aguilar, M. (1996), Kinetics studies on heavy metal ions removal by impregnated resins containing organophosphorus extractants. in *Ion Exchange Developments and Applications*, (Edited by Greig, J.A.), The Royal Society of Chemistry, 396-403.

Ponomareva, E.I., Zagorodnyaya, A.N., Abisheva, Z.S., Abishev, D.N. and Zharmenov, A.A. (1996), Kinetics of rhenium sorption from sulphuric acid medium using weak base anioite AH-21. in *Ion Exchange Developments and Applications*, (Edited by Greig, J.A.), The Royal Society of Chemistry, 435-441.

# Title: Ion Exchange Technology: Advances in Pollution Control

Technomic Publishing Co.

? Trujillo, E.M., Spinti, M. and Zhuang, H. (1995), Immobilized biomass: A new class of heavy-metalselective ion exchangers. in *Ion Exchange Technology: Advances in Pollution Control*, (Edited by Sengupta, A.K.), Technomic Publishing Co., 225-270.

# Title: Iranian Journal of Biotechnology

Full Journal Title: [Iranian Journal of Biotechnology](http://ijb.nigeb.ac.ir/index.php/ijb/index)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

# Title: Iranian Journal of Chemistry & Chemical Engineering-International English Edition

Full Journal Title: Iranian Journal of Chemistry & Chemical Engineering-International English Edition

ISO Abbrev. Title: Iran J. Chem. Chem. Eng.-Int. Engl. Ed.

JCR Abbrev. Title: Iran J Chem Chem Eng

ISSN: 1021-9986

Issues/Year: 4

Language: English

Journal Country/Territory: Iran

Publisher: Jihad Daneshgahi

Publisher Address: Po Box 13145-1494, Tehran 00000, Iran

Subject Categories:

Chemistry, Multidisciplinary: Impact Factor 0.124, 143/147 (2010)

Engineering, Chemical: Impact Factor 0.124, 125/135 (2010)

? Ghazy, S.E. and Ragab, A.H. (2005), Removal of lead ions from aqueous solution by sorptive-flotation using limestone and oleic acid. *Iranian Journal of Chemistry & Chemical Engineering-International English Edition*, **26** (4), 83-92.

Full Text: [2005\Ira J Che Che Eng-Int Eng Edi26, 83.pdf](2005/Ira%20J%20Che%20Che%20Eng-Int%20Eng%20Edi26,%2083.pdf)

Abstract: A simple, rapid and economic procedure was presented to remove lead(II) from aqueous solution under the optimized conditions. It is bayed on the sorption of Pb2+ ions from aqueous solutions onto limestone fines (LS), which is an inexpensive and widespread over the globe, followed by flotation with oleic acid (HOL) surfactant. The different parameters (namely: solution pH, sorbent, surfactant and lead concentrations, shaking times, ionic strength, temperature and the presence of foreign ions) influencing the sorptive-flotation process were examined. Nearly, 99% of Pb2+ ions were removed from aqueous solutions at pH 7 after shaking for 5 min and at room temperature (similar to 25 degrees C). The procedure was successfully applied to recover lead(II) spiked to some natural water samples. A. mechanism for sorption and flotation is suggested.

Keywords: Lead, Sorptive-Flotation, Limestone, Oleic Acid, Activated Carbon, Water Samples, Calcite, Aluminum, Cadmium, Preconcentration, Hydroxyapatite, Surfactant, Separation, Retention

? Bashardoost, R., Vahabzadeh, F., Shokrollahzadeh, S. and Monazzami, A.R. (2010), Sorption performance of live and heat-inactivated loofa-immobilized *Phanerochaete chrysosporium* in mercury removal from aqueous solution. *Iranian Journal of Chemistry & Chemical Engineering-International English Edition*, **29** (4), 79-89.

Full Text: [2011\Ira J Che Che Eng-Int Eng Edi29, 79.pdf](2011/Ira%20J%20Che%20Che%20Eng-Int%20Eng%20Edi29,%2079.pdf)

Abstract: The sorption behavior of loofa-immobilized Phanerochaete chrysosporium mycelia in two forms, Live (L) and Heat-Inactivated (HIA), was studied for the removal of Hg2+ ions from aqueous solution. Using the Langmuir isotherm, the two key parameters for the sorption performance, q(m) and the coefficient b, were obtained; the qm values for Hg2+ ions were 72.46 mg/g and 92.59 mg/g and the b coefficients were 0.073 L/mg and 0.114 L/mg for the L and HIA biosorbents, respectively. Using the Freundlich isotherm, the values of k(F) were determined as 13.28 and 21.30, and the values of the coefficient n were 3.22 and 3.51 for the L and HIA biosorbents, respectively. Although the biosorption data were well fitted by both the Langmuir and Freundlich models, the Langmuir isotherm gave a better fit, with a higher correlation coefficient than the Freundlich model. Moreover, the essential characteristic of the Langmuir isotherm model, described as the separation factor, was indicative of the favorable adsorption of Hg2+ onto both of the test biosorbents (0 < R < 1). A pseudo-second-order rate equation, as suggested by Lagergren and modified by Ho and Mckay, was used for the kinetic analysis, and the resulting values of K(2ads) were 1.16x10(-3) g/mg.min and 1.08x10(-3) g/mg.min for the L and HIA biosorbents, respectively. Regenerating the biosorbents was possible using hydrochloric acid to leach the sequestered mercury ions, providing an easy way to reduce the cost of the process. The prevailing criteria in the industrial selection and use of biosorbents were satisfactorily met by this system.

Keywords: Adsorption, Aqueous Solution, Biomass, Biosorbents, Biosorption, Biosorption Kinetics, Cadmium, Freundlich, Freundlich Isotherm, Hg(II), Immobilization, Ions, Isotherm, Kinetic, Langmuir, Langmuir Adsorption Isotherm, Langmuir and Freundlich Models, Langmuir Isotherm, Lead, Loofa Sponge, Mercury, Mercury Ions, Metal Removal, Pb(II), Phanerochaete Chrysosporium, Removal, Separation, Sorption, Sponge

? Itodo, A.U., Abdulrahman, F.W., Hassan, L.G., Maigandi, S.A. and Happiness, U.O. (2011), Chemistry of pyrolysis and kinetic studies of shea nut *(Vitellaria paradoxa*) shells activated carbon for textile wastewater treatment. *Iranian Journal of Chemistry & Chemical Engineering-International English Edition*, **30** (2), 51-57.

Full Text: [2011\Ira J Che Che Eng-Int Eng Edi30, 51.pdf](2011/Ira%20J%20Che%20Che%20Eng-Int%20Eng%20Edi30,%2051.pdf)

Abstract: Phosphoric acid (H3PO4) and Zinc chloride (ZnCl2) catalyzed shea nut shells, subjected to a one way activation scheme was employed to study the adsorption kinetics and mode of diffusion of industrial dye uptake. Thermodynamics data obtained in this study indicate that the sorption of dye spontaneously increases with time and decreases after equilibration was reached. The adsorption follows the pseudo second order kinetic model which gave the least % SSE (0.449-1.348), best linearity (R2 = 0.998-0.999) and closer agreement between the experimental and calculated *q*e values (*q*e exp., 96.985/*q*e cal., 100.00). Mode of transport deviate from the intraparticle diffusion model. According to this study, percent dye removal coupled with the close proximity of generated data to those reviewed in literatures, is an indication that shea nut shells could compare, to a good extent with commercial activated carbon for organic dye removal from dyestuff wastewater.

Keywords: Activated Carbon, Adsorption, Adsorption Kinetics, Carbon, Chloride, Diffusion, Dye, Dye Removal, Kinetic, Kinetic Model, Kinetics, Pseudo Second Order, Pyrolysis, Removal, Shea Nuts, Sorption, Textile Effluent, Thermodynamics, Transport, Uptake, Vitellaria Paradoxa, Wastewater, Zinc

? Xiong, C.H., Meng, Y. and Yao, C.P. (2011), Characters of kinetic and equilibrium of adsorption of Eu(III) by an cation exchange resin. *Iranian Journal of Chemistry & Chemical Engineering-International English Edition*, **30** (1), 97-105.

Full Text: [2011\Ira J Che Che Eng-Int Eng Edi30, 97.pdf](2011/Ira%20J%20Che%20Che%20Eng-Int%20Eng%20Edi30,%2097.pdf)

Abstract: The sorption and desorption behaviors of Eu(III) from aqueous solutions with cation exchange resins containing carboxyl groups (D155 resin) were studied in terms of varied Eu(III) concentration, adsorbent dosage, pH, contact time and temperature. Batch shaking sorption experiments were carried out to evaluate the performance of D155 resin in the removal of Eu(III) from aqueous solutions. The loading of Eu(III) ions onto D155 resin was found to increase significantly with the initial Eu(III) concentration increasing. The sorption was strongly dependent on pH of the medium with enhanced sorption as the pH changes from 4.00 to 6.40. The concentration of Eu(III) in aqueous solution was determined by UV-visible spectrophotometer. The adsorption kinetics, tested with Lagergren-first-order model and pseudo-second-order model, showed better agreement with Lagergren-first-order kinetics. The suitability of the Freundlich and Langmuir adsorption models was also investigated for europium sorbent system. The thermodynamic parameters such as ΔG, which were all negative, indicated that the adsorption of Eu(III) ions onto D155 resin was spontaneous and the positive value of ΔH showed that the adsorption was endothermic in nature. Eu(III) ions can be eluted by using the 0.5mol/L HCl solution. The surface characteristic of Eu(III) on D155 resin before and after adsorption was shown using IR spectroscopic technique. Therefore, it has a good potential of the removal of Eu(III) from aqueous solutions.

Keywords: Adsorbent, Adsorption, Adsorption Kinetics, Aqueous Solution, Aqueous-Solutions, Batch, Cation Exchange, Cation Exchange Resin (D155 Resin), Chelating Resin, Desorption, Equilibrium, Eu(III), Europium, Europium(III), Freundlich, Kinetic, Kinetics, Langmuir, Metal-Ions, N,N,N’,N’-Tetraoctyl Diglycolamide, Peat, pH, Pseudo Second Order, Rare-Earth-Elements, Removal, Resin, Resins, Sorbent, Sorption, Stationary-Phase, Temperature, Thermodynamic, Thermodynamic Parameters, Waste-Water

# Title: Iranica Journal of Energy & Environment

Full Journal Title: [Iranica Journal of Energy & Environment](http://idosi.org/ijee/online.htm)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

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Subject Categories:

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? Radia, H., Ghoreyshi, A.A. and Younesi, H. (2011), Isotherm and kinetics of Fe(II) adsorption onto chitosan in a batch process. *Iranica Journal of Energy & Environment*, **2** (3), 250-257.

Full Text: [2011\Ira J Ene Env2, 250.pdf](2011/Ira%20J%20Ene%20Env2,%20250.pdf)

# Title: Iranian Journal of Environmental Health Science & Engineering

Full Journal Title: [Iranian Journal of Environmental Health Science & Engineering](http://journals.tums.ac.ir/description.aspx?org_id=59&culture_var=en&journal_id=13&segment=en)

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ISSN: 1735-1979

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Language:

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Subject Categories:

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? Barkhordar, B. and Ghiasseddin, M. (2004), Comparision of Langmuir and Freundlich equilibriums in Cr, Cu and Ni adsorption by *Sargassum*. *Iranian Journal of Environmental Health Science & Engineering*, **1** (2), 58-64.

Full Text: [2004\Ira J Env Hea Sci Eng1, 58.pdf](2004/Ira%20J%20Env%20Hea%20Sci%20Eng1,%2058.pdf)

Abstract: Heavy metals are present in different types of industrial effluents, being responsible for environmental pollution. Biosorption is a promising alternative method to treat industrial effluents, mainly because of its low cost and high metal binding capacity. In this work application of Langmuir and Freundlich sorption models for chromium, copper and nickel biosorption process by Sargassum seaweed biomass was studied in batch system. The work considered the effects of some important parameters such as retention time and initial concentration on remained concentration of heavy metals. Dried Sargassum was contacted with metal solution on different retention times (10, 20, 30, 45 and 60 min) and variation of initial concentration (10, 25, 50, 75 and100 mg/l) at constant pH and temperature. The obtained charts were linear for Langmuir and Freundlich equilibriums and their slopes and y-intercepts were calculated (Constants a, b, n, k). Results showed that the constants were in a same range; therefore Langmuir and Freundlich sorption models were in good agreement with experimental results.

Keywords: Adsorption, Batch System, Biomass, Biosorption, Capacity, Chromium, Copper, Cu, Freundlich, Heavy Metals, Langmuir, Metal, Metals, Models, Nickel, Ph, Sargassum, Sorption, Sorption Models, System, Temperature

? Izanloo, H. and Nasseri, S. (2005), Cadmium removal from aqueous solutions by ground pine cone. *Iranian Journal of Environmental Health Science & Engineering*, **2** (1), 33-42.

Full Text: [2005\Ira J Env Hea Sci Eng2, 33.pdf](2005/Ira%20J%20Env%20Hea%20Sci%20Eng2,%2033.pdf)

Abstract: A study on the removal of cadmium ions from aqueous solutions by pine cone was conducted in batch conditions. Kinetic data and equilibrium removal isotherms were obtained. The influence of different experimental parameters such as contact time, initial concentration of cadmium, pine cone mass and particle size, and temperature on the kinetics of cadmium removal was studied. Results showed that the main parameters that played an important role in removal phenomenon were initial cadmium concentration, particle size and pine cone mass. The necessary time to reach equilibrium was between 4 and 7 hours based on the initial concentration of cadmium. The capacity of cadmium adsorption at equilibrium increased with the decrease of pine cone particle size. The capacity of cadmium adsorption at equilibrium by pine cone increased with the quantity of pine cone introduced (1–4 g/L). Temperature in the range of 20-30°C showed a restricted effect on the removal kinetics (13.56 mg/g at 20°C and a low capacity of adsorption about 11.48 mg/g at 30°C). The process followed pseudo second-order kinetics. The cadmium uptake of pine cone was quantitatively evaluated using adsorption isotherms. Results indicated that the Langmuir model gave a better fit to the experimental data in comparison with the Freundlich equation.

Keywords: Cadmium Removal, Kinetic, Equilibrium, Pine Cone, Isotherm Models, Adsorption

? Nabizadeh, R., Naddafi, K., Saeedi, R., Mahvi, A.H., Vaezi, F., Yaghmaeian, K. and Nazmara, S. (2005), Kinetic and equilibrium studies of lead and cadmium biosorption from aqueous solutions by sargassum spp. biomass. *Iranian Journal of Environmental Health Science & Engineering*, **2** (3), 159-168.

Full Text: [2005\Ira J Env Hea Sci Eng2, 159.pdf](2005/Ira%20J%20Env%20Hea%20Sci%20Eng2,%20159.pdf)

Abstract: Contamination of the aqueous environment by heavy metals is a worldwide environmental problem. Biosorption of lead(II) and cadmium(II) from aqueous solutions by brown algae *Sargassum spp*. biomass was studied in a batch system. The heavy metals uptake was found to be rapid and reached to 88-96% of equilibrium capacity of biosorption in 15min. The pseudo second-order and saturation rate equations were found in the best fitness with the kinetic data (*R2* > 0.99). The data obtained from experiments of single-component biosorption isotherm were analyzed using the Freundlich, Langmuir, Freundlich-Langmuir and Redlich-Peterson isotherm models. The Redlich-Peterson equation described the biosorption isotherm of Pb2+ and Cd2+ with high correlation coefficient (*R2* > 0.99) and better than the other equations. The effect of Na+, K+, Mg2+ and Ca2+ on the biosorption of Pb2+ was not significant, but the metal ions affected the biosorption of Cd2+ considerably. According to the Langmuir model, the maximum uptake capacities (*qm*) of *Sargassum* spp. for Pb2+ and Cd2+ were obtained as 1.70 and 1.02 mmol/g, respectively. Although the *Sargassum spp.* used in this study can be classified as an efficient biosorbent.

Keywords: Aqueous, Batch System, Biomass, Biosorbent, Biosorption, Brown Algae, Cadmium, Capacity, Contamination, Equilibrium, Freundlich, Heavy Metals, Isotherm, Kinetic, Langmuir, Langmuir Model, Lead, Metal, Metal Ions, Metals, Models, Pb2+, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Sargassum, Second Order, Solutions, System

? Dehghani, M., Nasseri, S., Amin, S., Naddafi, K., Taghavi, M., Yunosian, M. and Maleki, N. (2005), Atrazine adsorption desorption behavior in Darehasaluie Kavar corn field soil in Fars Province of Iran. *Iranian Journal of Environmental Health Science & Engineering*, **2** (4), 221-228.

Full Text: [2005\Ira J Env Hea Sci Eng2, 221.pdf](2005/Ira%20J%20Env%20Hea%20Sci%20Eng2,%20221.pdf)

Abstract: Adsorption desorption behaviors of widely applied atrazine soil were studied, employing a batch technique as a case study in Darehasaluie Kavar corn field in Fars Province in 2005. Samples were collected into 0 to 20 cm soil depth, where was cultivated under a crop rotation (corn-wheat) during the past 10 years. Sorption kinetics exhibited two phenomena: an immediate rapid sorption (1.31 g/g soil after 12 hours) followed by a slow sorption process (1.37 g/g soil after 24 hours). Desorption behavior of atrazine was similar to its adsorption, but at a very slower rate. Atrazine desorption efficiencies were much less effective and incomplete even after a long equilibration time (only 9.16% after 96 hours). The adsorption desorption rate for most of the time was positively related to the amount of applied atrazine and the time required for equilibration (P<0.01). Desorption data exhibited hysteresis phenomena. Atrazine adsorption data described well according to Freundlich (r2=0.95), Langmuir (r2=0.82) and Temkin (r2=0.84) isotherms. However, the fit to Freundlich adsorption model in a non linear form (1/n <1) was closer than the others. Desorption isotherm could be well described by the Temkin (r2=0.96) and Freundlich (r2=0.92) isotherms, but the fit to Temkin model was closer than that of Freundlich.

Keywords: Adsorption, Atrazine, Desorption, Freundlich, Iran, Isotherm, Isotherms, Kinetics, Langmuir, Sorption, Sorption Kinetics

? Gholami, F., Mahvi, A., Omrani, G., Nazmara, S. and Ghasri, A. (2006), Removal of chromium(VI) from aqueous solution by *Ulmus* leaves. *Iranian Journal of Environmental Health Science & Engineering*, **3** (2), 97-102.

Full Text: [2006\Ira J Env Hea Sci Eng3, 97.pdf](2006/Ira%20J%20Env%20Hea%20Sci%20Eng3,%2097.pdf)

Abstract: The Cr(VI) adsorption characteristics of Ulmus leaves (UL) and their ash were examined as a function of contact time, initial pH, and initial metal ion concentration. Batch adsorption experiments were performed. The effects of Ca2+, Mg2+, Na+ and K+ on adsorption were studied. Maximum removal was achieved in the pH = 7, contact time of 60 minutes and with initial Cr(VI) concentration of 2 mg/L. Because at pH6.5, precipitation of chromium may take place, optimum pH was selected at 6. Maximum adsorption rate values were found at the first 60 min at pH = 6. The effect of the adsorbent on COD removal from aqueous solution showed that 2 g/L of adsorbent caused 130 and 75 mg/L increase in COD of deionized water in 60 min for UL and its ash, respectively. The chromium adsorption data obtained under the optimum condition were described by the Langmuir and Freundlich isotherms. Studies showed that the Langmuir adsorption model better fitted than Freundlich, with R2 > 0.99. Also UL ash was more efficient than living leaves in removing chromium from aqueous solution.

Keywords: Adsorption, Adsorption Rate, Aqueous, Batch Adsorption, Chromium, Chromium Adsorption, COD, Freundlich, Freundlich Isotherms, Isotherms, Langmuir, Langmuir and Freundlich Isotherms, Metal, pH, Removal, Water

? Reddy, S. and Kotaiah, B. (2006), Comparative evaluation of commercial and sewage sludge based activated carbons for the removal of textile dyes from aqueous solutions. *Iranian Journal of Environmental Health Science & Engineering*, **3** (4), 239-246.

Full Text: [2006\Ira J Env Hea Sci Eng3, 239.pdf](2006/Ira%20J%20Env%20Hea%20Sci%20Eng3,%20239.pdf)

Abstract: The sorption of dyes from aqueous solutions on to sludge-based activated carbon have been studied and compared with commercial activated carbon. Adsorption parameters for the Langmuir and Freundlich isotherms were determined and the effects of effluent pH, adsorbent dosage, contact time and initial dye concentration were studied. A pseudo-second order kinetic model has been proposed to correlate the experimental data.

Keywords: Activated Carbon, Adsorption, Aqueous, Carbon, Dye, Dyes, Evaluation, Freundlich, Freundlich Isotherms, Isotherms, Kinetic, Langmuir, Langmuir and Freundlich Isotherms, pH, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Sludge, Solutions, Sorption

? Sen, M. and Dastidar, M. (2007), Biosorption of Cr (VI) by resting cells of Aspergillus sp. *Iranian Journal of Environmental Health Science & Engineering*, **4** (1), 9-12.

Full Text: [2007\Ira J Env Hea Sci Eng4, 9.pdf](2007/Ira%20J%20Env%20Hea%20Sci%20Eng4,%209.pdf)

Abstract: Biosorption of Cr(VI) from aqueous solution was studied in a batch bioreactor using the resting cells of filamentous fungal biomass (Aspergillus sp.) isolated from industrial wastewaters. The specific Cr(VI) removal (mg/g of dried biomass) decreased with increase in pH and increased with increase in initial Cr(VI) concentration, upto 500 mg/L. By increasing biomass concentration from 2.4 to 5.2 g/L, the specific metal removal remained almost constant. The studies carried out by using the resting cells from various stages of growth indicated maximum Cr(VI) removal of 34.8 mg/g using the biomass from the beginning of the stationary phase. The adsorption equilibrium constants Q (42.9 mg/g) and b (0.0091/mg) were obtained from the Langmuir adsorption isotherm model.

Keywords: Adsorption, Adsorption Isotherm, Aqueous, Biomass, Biosorption, Cr(VI), Cr(VI) Removal, Equilibrium, Fungal Biomass, Isotherm, Langmuir, Metal, pH, Removal

? Mamisahebei, S., Khaniki, G., Torabian, A., Nasseri, S. and Naddafi, K. (2007), Removal of arsenic from an aqueous solution by pretreated waste tea fungal biomass. *Iranian Journal of Environmental Health Science & Engineering*, **4** (2), 85-92.

Full Text: [2007\Ira J Env Hea Sci Eng4, 85.pdf](2007/Ira%20J%20Env%20Hea%20Sci%20Eng4,%2085.pdf)

Abstract: Arsenic contamination in water poses a serious threat on human health. The tea fungus known as Kombucha is a waste produced during black tea fermentation. The objective of this study was to examine the main aspect of a possible strategy for the removal of arsenates employing tea fungal biomass. The pretreatment of biomass with FeCl3 was found to improve the biosorption efficiency. Arsenics uptake was found to be rapid for all concentrations and reached to 79% of equilibrium capacity of biosorption in 20 min and reached equilibrium in 90 min. The pseudo second-order and first-order models described the biosorption kinetics of As(V) with good correlation coefficient (R2 > 0.93) and better than the other equations. The data obtained from the experiment of biosorption isotherm were analyzed using the Freundlich and Langmuir isotherm models. The equation described the isotherm of As(V) biosorption with relatively high correlation coefficient (R2 > 0.93). According to the Langmuir model, the maximum uptake capacities (qm) of tea fungal biomass for As(V) were obtained 3.98×10-3 mmol/gr. The effect of Na+, K+, Mg+2 and Ca+2 on equilibrium capacities of As was not significant. The variation of sorption efficiency with pH showed that optimum biosorption takes place in the pH ranges of 6 to 8. Promising results were obtained in laboratory experiments and effective As(V) removals were observed.

Keywords: Aqueous, Arsenic, Biomass, Biosorption, Biosorption Kinetics, Capacity, Equilibrium, First Order, Freundlich, Fungal Biomass, Fungus, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Model, Models, pH, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Removal, Second Order, Sorption, Water

? Tiwari, R., Ramudu, P., Srivastava, R. and Gupta, M. (2007), Sorption and desorption studies of metallic zinc on an alluvial soil. *Iranian Journal of Environmental Health Science & Engineering*, **4** (3), 139-146.

Full Text: [2007\Ira J Env Hea Sci Eng4, 139.pdf](2007/Ira%20J%20Env%20Hea%20Sci%20Eng4,%20139.pdf)

Abstract: The sorption of metallic zinc from the pH-adjusted aqueous solution at varying initial concentrations onto a clay soil through batch equilibrium experiments has been studied. The pH of the initial concentrations ranging between 50 mg/L to 250 mg/L has been varied from 3 to 7. The sorption data fitted very well with both Langmuir and Freundlich isotherm models and Freundlich model gave higher correlation coefficients. The maximum sorption of metallic zinc occurred at pH=6. The pseudo-second order kinetics model was most agreeable with the experimental sorption data, whereas the pseudo-first order model was found to be insufficient. A nonionic surfactant was tested for its desorption potential and was found to be fairly effective at 2% concentration with removal of more than 60% sorbed Zinc.

Keywords: Aqueous, Clay, Desorption, Desorption Studies, Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Kinetics, Langmuir, Models, pH, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-First Order, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Removal, Sorption, Surfactant, Zinc

? Salmasi, R. and Salmasi, F. (2007), Influences of soil properties on chromium(III) sorption. *Iranian Journal of Environmental Health Science & Engineering*, **4** (3), 169-172.

Full Text: [2007\Ira J Env Hea Sci Eng4, 169.pdf](2007/Ira%20J%20Env%20Hea%20Sci%20Eng4,%20169.pdf)

Abstract: Soil adsorbing properties reduce sorption ability of the metal, which in turn may influence decision for remediation at contaminated sites. The objective of this study is presentation of a model based on soil properties to estimate the sorption of Cr(III) in chromium contaminated soils. Twenty uncontaminated soil samples, with properties similar to the contaminated soils were selected from around of city of Tabriz and treated with Cr as CrCl3. A multiple regression analysis with statgraph software was used to drive an expression that related Cr sorption to common soil properties. The results showed that four soil properties were important in determining the amount of Cr adsorbed by the soils including pH, cation exchange capacity, total inorganic carbon and clay content with nearly 80% variability in Cr sorption and a reasonable level of confidence by this model. The obtained model suggested that Cr(III) sorption was enhanced by higher soil pH, more total inorganic carbon, more clay, and higher cation exchange capacity.

Keywords: Capacity, Carbon, Cation Exchange, Chromium, Clay, Cr(III), Cr(III) Sorption, Metal, pH, Remediation, Software, Soil, Soils, Sorption

? Mahvi, A.H., Nabizadeh, R., Gholami, F. and Khairi, A. (2007), Adsorption of chromium from wastewater by *Platanus orientalis* leaves. *Iranian Journal of Environmental Health Science & Engineering*, **4** (3), 191-196.

Full Text: [2007\Ira J Env Hea Sci Eng4, 191.pdf](2007/Ira%20J%20Env%20Hea%20Sci%20Eng4,%20191.pdf)

Abstract: The Cr(VI) adsorption characteristics of Platanus orientalis leaves and their ash were examined as a function of contact time, initial pH and metal ion concentration. Batch adsorption experiments were performed. The effects of Ca2+, Mg2+, Na+ and K+ on adsorption were studied. The effect of this adsorbent on COD in wastewater showed that 2 g/L of adsorbent caused increase of 110 mg/L and 76 mg/L COD in deionized water in 120 minutes for Platanus orientalis leaves and their ash, respectively. The maximum removal took place in the pH range of 6-7, contact time of 60 minutes and initial concentration of 2 mg/L. Studies showed that the Freundlich adsorption model better fitted with the results than Langmuir with R2 > 0.85. The study showed Platanus orientalis leaves ash was more favorable than living ones as well as in removing chromium from the aqueous solution.

? Arivoli, S., Hema, M. and Barathiraja, C. (2008), Comparative study on metal ions adsorption on a low cost carbonaceous adsorbent kinetic equilibrium and mechanistic studies. *Iranian Journal of Environmental Health Science & Engineering*, **5** (1), 1-10.

Full Text: [2008\Ira J Env Hea Sci Eng5, 1.pdf](2008/Ira%20J%20Env%20Hea%20Sci%20Eng5,%201.pdf)

Abstract: A carbonaceous adsorbent prepared from an indigenous waste and treated by acid was tested for its efficiency in removing metal ions of Fe(II), Co(II) and Ni(II). The process parameters studied included agitation time, initial metal ion concentration, carbon dosage, pH, other ions and temperature. The kinetics of adsorption followed first order reaction equation and the rate was mainly controlled by intraparticle diffusion. Freundlich and Langmuir isotherm models were applied to the equilibrium data. The adsorption capacity obtained from the Langmuir isotherm plots was found around 28mg/g for all selected metal ions at an initial pH of 6. The temperature variation study showed that the metal ions adsorption is endothermic and spontaneous with increased randomness at the solid solution interface. Significant effect on adsorption was observed on varying pH of the metal ion solutions. The type I and II isotherms obtained, positive Delta H-0 values, pH dependent results and desorption of metal ions in mineral acid suggests that the adsorption of metal ions on this type of adsorbent involves both chemisorption and physical adsorption mechanisms.

Keywords: Adsorption, Adsorption Capacity, Capacity, Carbon, Chemisorption, Desorption, Diffusion, Endothermic, Equilibrium, First Order, Freundlich, Intraparticle Diffusion, Isotherm, Isotherms, Kinetic, Kinetics, Kinetics of Adsorption, Langmuir, Langmuir Isotherm, Mechanisms, Metal, Metal Ions, Models, Ni(II), pH, Positive, Solutions, Temperature

? Kazemian, H. and Mallah, M.H. (2008), Removal of chromate ion from contaminated synthetic water using MCM-41/ZSM-5 composite. *Iranian Journal of Environmental Health Science & Engineering*, **5** (1), 73-77.

Full Text: [2008\Ira J Env Hea Sci Eng5, 73.pdf](2008/Ira%20J%20Env%20Hea%20Sci%20Eng5,%2073.pdf)

Abstract: In the present study removal of chromate anion (CrO42-) from a synthetic aqueous solution by a synthesized MCM-41/ZSM-5 composite and its modified form with the anionic surfactant of hexadecyl-teri methyl ammonium bromide; (surfactant modified composite) was investigated. According to the data obtained from batch test of MCM-41/ZSM-5 composite and surfactant modified composite, it is obvious that modification of the composite with anionic surfactant improves its affinity toward the oxyanion (917mL/g for MCM-41/ZSM-5 composite in comparison to 1870mL/g for surfactant modified composite). It was concluded that sorption capacity and selectivity of the composite will be remarkly improve toward chromate anion by modification of its surface by a surfactant; therefore surfactant modified composite is a suitable candidate for removal of chromate anion from contaminated solutions.

Keywords: Aqueous, Capacity, Chromate, Composite, Removal, Solutions, Sorption, Surfactant, Water

? Khanafari, A., Eshghdoost, S. and Mashinchian, A. (2008), Removal of lead and chromium from aqueous solution by *Bacillus circulans* biofilm. *Iranian Journal of Environmental Health Science & Engineering* , **5** (3), 195-200.

Full Text: [2008\Ira J Env Hea Sci Eng5, 195.pdf](2008/Ira%20J%20Env%20Hea%20Sci%20Eng5,%20195.pdf)

Abstract: The different methods are used for the removal of heavy metals as important contaminants in water and wastewater. Biosorption is an alternative to traditional physicochemical in removing toxic metals from wastewaters and groundwater resources. In this study biosorption of lead and chromium ions from solution was studied using Bacillus circulans isolated from Anzali wetland in batch and biofilter modes and optimum conditions were determined. The experimental results showed 900-950 mg/L and 1050-1100 mg/L, for minimum bactericidal concentration and minimum inhibitory concenteration for lead and chromium, respectively. Results of metal concentration in solution containing 500 mg/L in batch culture showed a reduction about 65% and 48% in five and four days for lead and chromium, respectively. The highest value of lead and chromium uptake in solution with 500 mg/L was 78% and 40% in biofilter mode, respectively. The biosorption of lead and chromium were increased up to pH=5.5, 6, 5.5 and 7, respectively. In the other hand, maximum sorption occurred at neutral pH. There was a significant decreasing of biosorption levels by lowering pH fewer than 3. Accumulation of lead and chromium was determined by scanning electron microscopy analysis of the biofilm exposed to 500 mg/L metal concentration. Based on this analysis, the highest metal concentrations were observed in regions with including bacteria.

Keywords: Aqueous, Biofilm, Biofilter, Biosorption, Chromium, Heavy Metals, Lead, Metal, Metals, pH, Removal, Sorption, Toxic Metals, Wastewater, Water

? Asgari, A., Vaezi, F., Nasseri, S., Dordelmann, O., Mahvi, A. and Fard, E. (2008), Removal of hexavalent chromium from drinking water by granular ferric hydroxide. *Iranian Journal of Environmental Health Science & Engineering*, **5** (4), 277-282.

Full Text: [2008\Ira J Env Hea Sci Eng5, 277.pdf](2008/Ira%20J%20Env%20Hea%20Sci%20Eng5,%20277.pdf)

Abstract: Removal of chromium can be accomplished by various methods but none of them is cost-effective in meeting drinking water standards. For this study, granular ferric hydroxide was used as adsorbent for removal of hexavalent chromium. Besides, the effects of changing contact time, pH and concentrations of competitive anions were determined for different amounts of granular ferric hydroxide. It was found that granular ferric hydroxide has a high capacity for adsorption of hexavalent chromium from water at pH7 and in 90 min contact time. Maximum adsorption capacity was determined to be 0.788 mg Cr+6/g granular ferric hydroxide. Although relatively good adsorption of sulfate and chloride had been specified in this study, the interfering effects of these two anions had not been detected in concentrations of 200 and 400 mg/L. The absorbability of hexavalent chromium by granular ferric hydroxide could be expressed by Freundlich isotherm with R2>0.968. However, the disadvantage was that the iron concentration in water was increased by the granular ferric hydroxide. Nevertheless, granular ferric hydroxide is a promising adsorbent for chromium removal, even in the presence of other interfering compounds, because granular ferric hydroxide treatment can easily be accomplished and removal of excess iron is a simple practice for conventional water treatment plants. Thus, this method could be regarded as a safe and convenient solution to the problem of chromium-polluted water resources.

Keywords: Adsorption, Adsorption Capacity, Capacity, Chromium, Chromium Removal, Freundlich, Freundlich Isotherm, Hexavalent Chromium, Isotherm, pH, Removal, Standards, Sulfate, Treatment, Water, Water Treatment

? Gaur, N. and Dhankhar, R. (2009), Equilibrium modelling and spectroscopic studies for the biosorption of Zn+2 ions from aqueous solution using immobilized *Spirulina platensis*. *Iranian Journal of Environmental Health Science & Engineering*, **6** (1), 1-6.

Full Text: [2009\Ira J Env Hea Sci Eng6, 1.pdf](2009/Ira%20J%20Env%20Hea%20Sci%20Eng6,%201.pdf)

Abstract: Biosorption equilibrium of zinc ions to Spirulina platensis both in free and immobilized forms were studied in batch system with respect to pH, metal ion concentration, algal dosages and time. The maximum adsorption was observed at pH=8, optimum metal ion concentration and algal dose were 100 mg/L and 1g/100mL, respectively. Biosorption equilibrium was established in 90 minutes. The maximum attainable biosorption was found to be 97.1% for Spirulina platensis. The equilibrium adsorption capacities of adsorbents used for zinc ions were measured and extrapolated using Langmuir and Freundlich isotherms models. Langmuir model was found to be in better correlation with experimental data. The maximum Langmuir constants Q(o) (mg/g) and b were 92.93 and 0.0012, respectively for Spirulina platensis embedded in calcium alginate matrix. The immobilized Spirulina platensis in calcium of alginate matrix was the best biosorbent. 0.1 M EDTA was used as an eluant, which allowed the reuse of biomass in three biosorption-desorption cycles without considerable loss in biosorption capacity. 8995 % zinc ions were desorbed with EDTA. The functional groups involved in zinc biosorption were identified by using Fourier Transform Infra Red spectroscopy. Spectroscopic analysis of algae revealed the presence of carboxyl, hydroxyl, amino, amide and imine groups, which were responsible for biosorption of zinc ions.

Keywords: Adsorption, Alginate, Batch System, Biomass, Biosorbent, Biosorption, Capacity, Edta, Equilibrium, Freundlich, Freundlich Isotherms, Groups, Immobilized, Isotherms, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Model, Metal, Models, pH, Spectroscopy, Spirulina, Spirulina Platensis, System

? Shokoohi, R., Saghi, M.H., Ghafari, H.R. and Hadi, M. (2009), Biosorption of Iron from aqueous solution by dried biomass of activated sludge. *Iranian Journal of Environmental Health Science & Engineering*, **6** (2), 107-114.

Full Text: [2009\Ira J Env Hea Sci Eng6, 107.pdf](2009/Ira%20J%20Env%20Hea%20Sci%20Eng6,%20107.pdf)

Abstract: This study was conducted to investigate the removal of iron by dried biomass of activated sludge. Dried activated sludge, prepared as a powder, was tested as a sorbent for the removal of iron from aqueous solutions. The effects of various experimental parameters including initial iron concentration, mass of biomass and contact time were examined and optimal experimental conditions were obtained. The equilibrium time for iron adsorption onto biomass was determined as 150 min. The rate of iron removal was directly correlated to biomass amount and contact time. Increasing contact time from 0.5 h to 2.5 h resulted in 25% improvement in iron removal efficiency. When the weight of the biomass increased from 0.1g to 0.9 g, the iron removal efficiency increased from 62% to 95%. High initial iron concentration had an adverse effect on iron removal efficiency. Increasing initial iron concentration from 2 to 10 (mg/L) caused declining the iron removal efficiency from 70% to 56%. Freundlich, Langmuir, Dubinin-Radushkevich and Temkin isotherm models could describe the adsorption equilibrium of the iron onto the activated sludge. Meanwhile, Freundlich isotherm represented a better correlation compared to other isotherms (R-2 > 0.999). Also Elovich kinetic models fits well with experimental data (R-2>0.997).

Keywords: Adsorption, Aqueous, Biomass, Biosorption, Elovich, Equilibrium, Freundlich, Freundlich Isotherm, Iron, Isotherm, Isotherms, Kinetic, Kinetic Models, Langmuir, Models, Removal, Sludge, Solutions, Temkin Isotherm

? Nagda, G.K. and Ghole, V.S. (2009), Biosorption of Congo red by hydrogen peroxide treated Tendu waste. *Iranian Journal of Environmental Health Science & Engineering*, **6** (3), 195-200.

Full Text: [2009\Ira J Env Hea Sci Eng6, 195.pdf](2009/Ira%20J%20Env%20Hea%20Sci%20Eng6,%20195.pdf)

Abstract: Solid wastes from agro-industrial operations can be recycled as non-conventional adsorbents if they are inert and harmless and reduce the cost of wastewater treatment. Tendu leaf Diospyros melanoxylon is the second largest forest product in India after timber and is exclusively used in making local cigarette called Bidi. Waste leaf cutting remaining after making cigarette was used in present study as a biosorbent for the removal of Congo red dye from aqueous solution. It was treated with hydrogen peroxide to obtain biosorbent with increased adsorption capacity. Batch type experiments were conducted to study the influence of different parameters such as pH, initial dye concentration and dosage of adsorbent on biosorption evaluated. The adsorption occured very fast initially and attains equilibrium within 60 min at pH= 6.2 and the equilibrium attained faster after hydrogen peroxide modification. Kinetic studies showed that the biosorption of Congo red on tendu waste followed pseudo-second-order rate equation. The data fitted well to Langmuir and Freundlich isotherm models. Comparison was done on the extent of biosorption between untreated and treated forms of the tendu waste. The maximum adsorption capacity for untreated tendu waste was found to be 46.95 mg/g, which was enhanced by 2.8 times after hydrogen peroxide treatment and was found to be 134.4 mg/g. The adsorption process was in conformity with Freundlich and Langmuir isotherms for Congo red adsorption from aqueous solution. The study demonstrated use of milder chemical treatment of tendu waste to obtain a biosorbent with enhanced dye removal capacity.

Keywords: Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Aqueous Solution, Aqueous-Solution, Biomass, Biosorbent, Biosorption, Capacity, Chemical, Chemical Modification, Concentration, Congo Red, Congo Red Dye, Cost, Data, Diospyros Melanoxylon, Dye, Dye Removal, Equilibrium, Experiments, Forest, Forms, Freundlich, Freundlich Isotherm, Hydrogen, Hydrogen Peroxide, India, Isotherm, Isotherms, Kinetic, Kinetic Studies, Kinetics, Langmuir, Langmuir Isotherms, Local, Low-Cost Adsorbents, Models, Modification, Ph, Powder, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Removal, Rice Straw, Solution, Sorption, Tendu Waste, Treatment, Waste, Wastewater, Wastewater Treatment, Water

? Samarghandi, M.R., Hadi, M., Moayedi, S. and Askari, F.B. (2009), Two-parameter isotherms of methyl orange sorption by pinecone derived activated carbon. *Iranian Journal of Environmental Health Science & Engineering*, **6** (4), 285-294.

Full Text: [2009\Ira J Env Hea Sci Eng6, 285.pdf](2009/Ira%20J%20Env%20Hea%20Sci%20Eng6,%20285.pdf)

Abstract: The adsorption of a mono azo dye methyl-orange (MeO) onto granular pinecone derived activated carbon (GPAC), from aqueous solutions, was studied in a batch system. Seven two-parameter isotherm models Langmuir, Freundlich, Dubinin-Radushkevic, Temkin, Halsey, Jovanovic and Hurkins- Jura were used to fit the experimental data. The results revealed that the adsorption isotherm models fitted the data in the order of Jovanovic (χ2=1.374) > Langmuir > Dubinin-Radushkevic > Temkin > Freundlich > Halsey > Hurkins- Jura isotherms. Adsorption isotherms modeling showed that the interaction of dye with activated carbon surface is localized monolayer adsorption. A comparison of kinetic models was evaluated for the pseudo-second order, Elovich and Lagergren kinetic models. Lagergren first order model was found to agree well with the experimental data (χ2=9.231). In order to determine the best-fit isotherm and kinetic models, two error analysis methods of Residual Mean Square Error and Chi-square statistic (χ2) were used to evaluate the data.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Isotherm, Adsorption Isotherm Models, Adsorption Isotherms, Analysis, Aqueous Solutions, Aqueous-Solution, Azo Dye, Batch, Batch System, Carbon, Chi-Square, Comparison, Data, Dye, Dyes, Elovich, Error, Error Analysis, Experimental, First, First Order, Freundlich, Gases, Interaction, Isotherm, Isotherm Models, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Methods, Methyl Orange, Model, Modeling, Models, Monolayer, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Solids, Solutions, Sorption, Surface

? Ghadiri, S.K., Nabizadeh, R., Mahvi, A.H., Nasseri, S., Kazemian, H., Mesdaghinia, A.R. and Nazmara, S. (2010), Methyl tert-butyl ether adsorption on surfactant modified natural zeolites. *Iranian Journal of Environmental Health Science & Engineering*, **7** (3), 241-252.

Full Text: [2010\Ira J Env Hea Sci Eng7, 241.pdf](2010/Ira%20J%20Env%20Hea%20Sci%20Eng7,%20241.pdf)

Abstract: Surfactant-modified clinoptilolite-rich tuff was used for the removal of methyl tert-butyl ether (MTBE) from aqueous solutions. Clinoptilolite zeolite from Miyaneh region of Iran was treated with sodium chloride and then modified with hexadecyltrimethylammonium chloride (HDTMA-Cl) and n-Cetylpyridinium bromide (CPB) to be used in different experimental conditions. The ability of raw or Non-Modified Zeolite (NMZ) and Surfactant-Modified Zeolites (SMZ) to remove MTBE from aqueous solutions was investigated as a function of contact time, pH and concentrations of adsorbent and adsorbate, by using a batch technique in aqueous system. The removal of MTBE from aqueous solutions by modified zeolites seemed to be more effective than non-modified samples. Also, HDTMA-modified zeolite had more effective performance than CPB-modified zeolite. The adsorption efficiency of MTBE onto SMZ(s) was found to increase by contact time and adsorbent concentrations, and by decreasing of pH and adsorbate concentrations. Empirical adsorption models of Langmuir and Freundlich were applied for the experimental data. Results showed that Langmuir isotherm was more suitable for this process. The experimental data fitted very well with the pseudo-second-order kinetic model. It was overally found that Surfactant-Modified Zeolites is an effective adsorbent for removal of methyl tert-butyl ether from contaminated solutions.

Keywords: Adsorbent, Adsorption, Aqueous Solutions, Aqueous-Solutions, Batch, Bromide, Chloride, Clinoptilolite, Clinoptilolite Zeolite, Contaminated Water, Data, Degradation, Efficiency, Ether, Experimental, Freundlich, Function, Hexadecyltrimethylammonium, Iran, Isotherm, Kinetic, Kinetic Model, Langmuir, Langmuir Isotherm, Methyl Tert-Butyl Ether, Model, Models, Modified, MTBE, Oxidation, Performance, pH, Phenol, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Sodium, Sodium Chloride, Solutions, Sorbents, Sorption, Surfactant, Surfactant Modified Zeolites, Volatile Organic-Compounds, Zeolite, Zeolites

? Ehrampoush, M.H., Ghanizadeh, G. and Ghaneian, M.T. (2011), Equilibrium and kinetics study of reactive red 123 dye removal from aqueous solution by adsorption on eggshell. *Iranian Journal of Environmental Health Science & Engineering*, **8** (2), 101-108.

Full Text: [2011\Ira J Env Hea Sci Eng8, 101.pdf](2011/Ira%20J%20Env%20Hea%20Sci%20Eng8,%20101.pdf)

Abstract: The aim of this study was to determine the equilibrium and kinetics adsorption of reactive red 123 dye (RR 123) from aqueous solution with chicken’s eggshell as an adsorbent. The initial concentrations of reactive red 123 dye were selected in the range of 25 and 50 mg/L. The target adsorbent was prepared in laboratory conditions and pulverized by ASTM standard sieves. Measurement of the adsorbent surface area was carried out via Brunauer-Emmett-Teller isotherm. The experimental data were analyzed with Langmuir, Freundlich and Temkin isotherm models. The results showed that the calcium components were the main constituents of eggshell (around 95% Ca). The experimental adsorption isotherm was in good concordance with -Langmuir and Freundlich models (R2 > 0.90) and based on the Langmuir isotherm the maximum amount of adsorption (*q*max) was 1.26 mg/g. Increase of the eggshell dose and the solution temperature beyond 45ºC led to decrease of the adsorbed dye per mass unit of the adsorbent, but increase of the solution pH up to 9 led to the improvement of dye adsorption. The kinetic studies revealed that the adsorption of reactive red 123 was rapid and complied with pseudo-second order kinetic (R2 = 0.99), with the kinetic constant of 0.02 g/mg.min.

Keywords: Adsorbent, Adsorption, Adsorption Isotherm, Aqueous Solution, Biomass, Biosorption, Blue, Bone Char, Calcium, Cationic Dyes, Dye, Dye Adsorption, Eggshell, Eggshell Waste, Equilibrium, Freundlich, Isotherm, Kaolinite, Kinetic, Kinetics, Langmuir, Langmuir and Freundlich Models, Langmuir Isotherm, Natural Sorbent, pH, Reactive Red 123 Dye, Removal, Sorption Kinetics, Temperature, Textile Waste-Water

? Samarghandi, M.R., Azizian, S., Siboni, M.S., Jafari, S.J. and Rahimi, S. (2011), Removal of divalent nickel from aqueous solutions by adsorption onto modified holly sawdust: Equilibrium and kinetics. *Iranian Journal of Environmental Health Science & Engineering*, **8** (2), 181-188.

Full Text: [2011\Ira J Env Hea Sci Eng8, 181.pdf](2011/Ira%20J%20Env%20Hea%20Sci%20Eng8,%20181.pdf)

Abstract: The removal of divalent nickel from aqueous solutions on modified holly sawdust was studied at varying contact times, pH initial divalent nickel concentrations and adsorbent dose. Results showed the removal efficiency by increasing of pH increased and decreased with initial nickel divalent concentration. By increasing pH from 2 to 12 (equilibrium time 240 min, adsorbent dose = 0.6g/100 mL, divalent nickel concentrations = 60 mg/L), the removal efficiency increased from 17.47 % to 81.76 %. Also removal efficiency was decreased from 98 % to 19.3 % by increasing of initial divalent nickel concentrations from 20 mg/l to 100 mg/L. Also the results showed the removal efficiency was increased by increasing of adsorbent dose and contact time. By increasing of adsorbent dose from 0.2 g/100CC to 1 g/100CC, the removal efficiency increased from 32.78% to 99.98%. The removal efficiency increased from 34.7% to 83.67% by increasing of contact time from 5 min to 240 min. Experimental equilibrium and kinetics data were fitted by Langmuir and Freundlich isotherms and pseudo-first-order and pseudo-second-order kinetics models, respectively. The results show that the equilibrium data follow Langmuir isotherm and the kinetic data follow pseudo-second-order model. The obtained maximum adsorption capacity was 22.47 mg/g at a pH 7. The results show that the modified holly sawdust can be used for the treatment of aqueous solutions containing nickel as a low cost adsorbent.

Keywords: Activated Carbon, Adsorbent, Adsorption, Copper, Cu(II), Divalent Nickel, Equilibrium, Freundlich, Freundlich Isotherms, Heavy-Metals, Ions, Isotherm, Isotherm Models, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherm, Modified, Ni(II), Nickel, pH, Removal, Sawdust, Shells, Treated Sawdust, Waste, Water

# Title: Iranian Polymer Journal

Full Journal Title: Iranian Polymer Journal

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Journal Country/Territory: Iran

Language: English

Publisher: Polymer Research Center Iran

Publisher Address: PO Box 14185-515, Tehran, Iran

Subject Categories:

Polymer Science: Impact Factor 0.127, 64/69 (2000)

? Annadurai, G. and Krishnan, M.R.V. (1997), Batch equilibrium adsorption of reactive dye onto natural biopolymer. *Iranian Polymer Journal*, **6** (3), 169-175.

Full Text: [1997\Ira Pol J6, 169.pdf](1997/Ira%20Pol%20J6,%20169.pdf)

Abstract: We have investigated the possibility of using chitosan which has amino groups, and therefore, has the advantage of more adsorption capacity and much easier desorption. Chitosan is produced by deacetylation of chitin which is a natural biopolymer extracted from the shells of arthropods such as lobsters, shrimps and crabs. In the present work, results for the batch equilibrium of adsorption of reactive dye on chitosan from its aqueous solution at different particle sizes and temperatures have been reported. The adsorption isotherms are found to be described by Langmuir, Freundlich and Redlich-Peterson types of equations. From the adsorption isotherms, the adsorption capacity, energy of adsorption, number of layers and the rate constants are evaluated. The rate of adsorption on chitosan is found to be dictated by variables such as temperature and particle size at a fixed pH. Differential scanning calorimeter signals obtained with dye adsorbed on chitosan samples indicate that the dye is chemisorbed on chitosan; and the value of ΔH is 23.685 J/g in the temperature range of 120-180°C.

? Liu, Y., Luo, L., Chen, G.L., Xie, M.J. and Yu, Z.L. (2010), Adsorption of lead ions on ground tyre rubber grafted with maleic anhydride via surface-initiated ATRP polymerization. *Iranian Polymer Journal*, **19** (3), 207-218.

Full Text: [2010\Ira Pol J19, 207.pdf](2010/Ira%20Pol%20J19,%20207.pdf)

Abstract: The surface modification of ground tyre rubber (GTR) containing hydroxyl groups was carried out by atom transfer radical polymerization using a two-step reaction procedure. The process consisted of immobilization of an ATRP initiator such as 2-bromoisobutyryl bromide and controllable radical polymerization of maleic anhydride (MAH). The resulting GTR-g-MAH was characterized by Fourier transform infrared spectroscopy and X-ray photoelectron spectroscopy. The results demonstrated that the graft yield of new polymer could reach 69.4% on GTR surface. Then the grafted GTR was used as an adsorbent for removal of lead ions from aqueous solution. It was observed that factors such as solution pH, contact time, initial lead concentration and graft yield exerted considerable influence on lead adsorption capacity of GTR-g-MAH. The adsorption process indicated that the pseudo-second-order kinetic model fitted the experimental data well, and the equilibrium of adsorption could be described by Freundlich isotherm model. The maximum adsorption capacity of GTR-g-MAH calculated from Langmuir isotherm reached 144 mg.g-1. It was found that the GTR-g-MAH particles had significantly greater adsorption capacity and faster adsorption kinetics for lead adsorption than unmodified GTR particles.

Keywords: Acid, Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Kinetics, Aqueous Solution, Aqueous-Solutions, Atom Transfer Radical Polymerization, Biomass, Bromide, Capacity, Concentration, Copper, Data, Equilibrium, Experimental, Freundlich, Freundlich Isotherm, Freundlich Isotherm Model, Graft, Grafted, Ground Tyre Rubber, GTR-g-MAH, Immobilization, Infrared Spectroscopy, Ions, Isotherm, Isotherm Model, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Lead, Lead Adsorption, Mar, Mercury, Model, Modification, Particles, pH, Polymer, Polymerization, Procedure, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Radical Polymerization, Reaction, Removal, Solution, Spectroscopy, Surface, Surface Modification, Time, Tire Rubber, Tyre, Water, X-Ray, X-Ray Photoelectron Spectroscopy

? Ansari, R. and Mosayebzadeh, Z. (2010), Removal of Eosin Y, an anionic dye, from aqueous solutions using conducting electroactive polymers. *Iranian Polymer Journal*, **19** (7), 541-551.

Full Text: [2010\Ira Pol J19, 541.pdf](2010/Ira%20Pol%20J19,%20541.pdf)

Abstract: Polypyrrole (PPy) and polyaniline (PAni) conducting polymers were synthesized chemically on the surface of wood sawdust (SD) to remove Eosin Y (EY), an anionic dye, from aqueous solution. The important parameters such as pH, initial concentration, sorbent dosage and contact time on uptake of EY solution were also investigated. The experiments were carried out using both batch and column systems at room temperature. It was found that both polymers can be used to remove anionic dyes such as EY from aqueous solutions very efficiently. The sorption process of EY dye using both polypyrrole and polyaniline coated onto sawdust (respectively termed as PPy/SD and PAni/SD) was less dependent on the pH of the solutions at least at pH values from 2-10. Considerable decrease in sorption performance occurred only at high pH values (pH ≥ 12). According to our “breakthrough analysis”, it was found that PAni/SD adsorbent is more efficient for EY removal in flow or column system. Adsorption of EY on the PPy/SD and PAni/SD under different conditions was examined by pseudo-first-order and pseudo-second-order models, and their respective rate constants of first-order adsorption (k(1)) and second-order adsorption (k(2)) were estimated. The experimental data fitted very well into pseudo-second-order kinetic model. The experimental data were also analyzed by the Langmuir and Freundlich models of adsorption. Based on the correlation coefficient values obtained (R-2), it was found that equilibrium data fitted well with both models. In order to find out the possibility of desorption for frequent use, the chemical regeneration of the employed adsorbents was also investigated. It was found that more than 96% of the EY dye can be recovered from PPy/SD column using a dilute NaOH solution (0.05 M).

Keywords: Acid, Adsorbent, Adsorbents, Adsorption, Anionic Dyes, Aqueous Solution, Aqueous Solutions, Batch, Behavior, Chemical, Coated, Column, Concentration, Conducting Polymers, Correlation, Correlation Coefficient, Data, Desorption, Dye, Dyes, Effluents, Eosin Y, Equilibrium, Experimental, Experiments, First Order, Flow, Freundlich, Ion, Kinetic, Kinetic Model, Langmuir, Model, Models, NaOH, Oxidation, Performance, pH, Polyaniline, Polyaniline, Polymers, Polypyrrole, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Rate Constants, Regeneration, Removal, Room Temperature, Sawdust, Sawdust, Second Order, Second-Order, Solution, Solutions, Sorbent, Sorption, Sorption Process, Surface, Systems, Temperature, Uptake, Wood

# Title: Iranian Journal of Public Health

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Malekafzali, H., Eftekhari, M.B., Peykari, N., Gholami, F.S., Nia, S.H.D., Owlia, P., Habibi, E., Mesgarpour, B. and Vasei, M. (2009), Research assessment of Iranian medical universities, an experience from a developing country. *Iranian Journal of Public Health*, **38**, 47-49.

Full Text: [2009\Ira J Pub Hea38, 47.pdf](file:///F:/Bibliometric%20References/2009/Ira%20J%20Pub%20Hea38,%2047.pdf)

Abstract: International ranking of universities by bibliometric assays has received a great attention in recent years. The developing countries have commenced to build their own infrastructure of research and post graduate training during the past couple of years. In 2000, the Ministry of Health and Medical Education of Iran began an annual national survey for assessing research activities in medical universities and their affiliated institutions by applying a customized ranking method. Research indicators were scored in three topics; Stewardship, Capacity Building, and Knowledge Production. In 2000, there were about 300 published medical articles in ISI/Thomson and PUBMED from the whole country. This number increased up to 3376 in 2007. The score of indexed papers in international databases per academic member rose from 0.1 in 2000 to 0.63 in 2007. The share of global articles (in the field of Medicine) grew from 0.06% in 2000 to 0.55% in 2007. This rising in article output led to a change from grade 57(th) in 2000 to 27(th) in 2007 in the ranking system of Scopus database. The number of local medical journals, which were 53 in 2000, increased to 141 at the end of 2008. This rising scores was ongoing while the growth of the total staff of the academic members was about 25% (from 9086 in 2000 to 11324 in 2007). The number of the short training courses rose from 458 in 2000 to 1097 in 2007. The registered research projects in health topic rose from less than 3878 in 2000 to 6816 in 2007.

Keywords: Bibliometric, Countries, Database, Databases, Developing Countries, Growth, Health Research System, Indicators, Iran, Journals, Knowledge, Medical, Medical Journals, Papers, Ranking, Research, Survey, System, Universities, University Ranking, WHO

# Title: Irish Journal of Food Science and Technology

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Journal Country/Territory:

Language:

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Publisher Address:

Subject Categories:

Impact Factor

McKay, G., Murphy, W.R. and Jodieri-Daddaghzadeh, S. (1989), Settling and fluidization characteristics of carrot particles in water. *Irish Journal of Food Science and Technology*, **13**, 51-69.

# Title: ISIJ International

Full Journal Title: ISIJ International

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Okido, M., Takakuwa, T., Eskandarpour, A., Ichino, R. and Iwai, K. (2008), Evaluation of selective separation of phosphorous components from plating baths using schwertmannite. *ISIJ International*, **48** (5), 685-689.

Abstract: Selective separation of phosphorous ion compounds in plating baths is of great interest. Schwertmannite, found as a strong P-sorbent in our pervious works, was used for this purpose as an inorganic chemical adsorbent, The effect of pH as a significant operating parameter on P-adsorption on schwertmannite in this process as well as on the stability of schwertmannite was thoroughly investigated. The experimental results showed that the hypophosphite H2PO2- was relatively difficult to exchange with sulfate units in schwertmannite in comparison with monoorthophpsphite H2PO3 and monoorthophosphate H2PO4. Moreover, batch kinetic trials revealed that the obtained data was fairly fitted to pseudo-second-order models.

Keywords: Acid-Mine Drainage, Adsorbent, Comparison, Experimental, Iron-Oxide Hydroxide, Kinetic, Magnetic Removal, Models, pH, Phosphate, Phosphorous, Plating Baths, Schwertmannite, Selective Separation, Separation, Stability, Sulfate, Waste-Water

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Subject Categories:

History & Philosophy of Science: Impact Factor 0.286, / (2001) SSCI

Merton, R.K. (1988), The Matthew effect in science, II: Cumulative advantage and the symbolism of intellectual property. *Isis*, **79** (4), 606-623.

Full Text: [1988\Isis79, 606.pdf](1988/ISIS79,%20606.pdf)

? Cueto, M. (1996), Bibliographica Medica Hispanica 1475-1950, vol 9, Bibliometrics of journals, 1736-1950 - Spanish - Pinero, JML, Terrada, MLL. *Isis*, **87** (4), 709-710.

Full Text: [1996\Isis87, 709.pdf](1996/Isis87,%20709.pdf)

Keywords: Bibliometrics, Journals, Spanish

? Cahan, D. (1999), Bibliometric profiles of the institutes of the Kaiser-Wilhelm-Gesellschaft zur Forderung der Wissenschaften (1923-1943): Institutes of the sections for chemistry-physics-technology and for biology-medicine by Parthey H. *Isis*, **90** (2), 387-388.

Full Text: [1999\Isis90, 387.pdf](1999/Isis90,%20387.pdf)

Keywords: Bibliometric, Jun, Profiles

# Title: Island Arc

Full Journal Title: Island Arc

ISO Abbreviated Title: Isl. Arc.

JCR Abbreviated Title: Isl Arc

ISSN: 1038-4871

Issues/Year: 4

Journal Country/Territory: Australia

Language: English

Publisher: Blackwell Science Asia

Publisher Address: 54 University St, PO Box 378, Carlton, Victoria 3053, Australia

Subject Categories:

Geosciences, Interdisciplinary: Impact Factor

Lin, A.M., Maruyama, T. and Miyata, T. (1998), Paleoseismic events and the 1596 Keicho-Fushimi large earthquake produced by a slip on the Gosukebashi fault at the eastern Rokko Mountains, Japan. *Island Arc*, **7** (4), 621-636.

Full Text: [I\Isl Arc7, 621.pdf](I/Isl%20Arc7,%20621.pdf)

Abstract: Field surveys and trench excavation investigations revealed that there were at least four large seismic events produced by slips on the Gosukebashi fault in the Holocene in the southeastern Rokko Mountains of Japan. The characteristics of deformed topographies and three-dimensionally excavated exposures show that this fault is a right-lateral strike-slip fault having an average slip rate of 1.0 mm/year, with a reverse displacement component. The principle indicators of past faulting events ase: (i) termination of secondary faults; (ii) sedimentary deposits related to faulting; and (iii) injection veins of fault gouge related to seismic faulting in the fractured zone. Radiocarbon dates indicate that the events occurred pre-1660 BC, 1660 BC-220 AD, from similar to 30-220 to 600 AD and 15th century AD. The youngest event is probably associated with the large 1596 AD Keicho-Fushimi earthquake which occurred in the area around Kyoto and Kobe Cities. The second younger event is probably correlated with the 416 AD Yamato earthquake, which is the oldest historic earthquake in Japanese historic records. The results of trench surveys show that the horizontal displacement produced by an individual event is similar to 1.5m, and the recurrence of seismic event intervals is similar to 1200 years in the Gosukebashi fault.

# Title: ISMOT’07: Proceedings of the Fifth International Symposium on Management of Technology, Vols 1 and 2 - Managing Total Innovation and Open Innovation in the 21st Century

Full Journal Title: ISMOT’07: Proceedings of the Fifth International Symposium on Management of Technology, Vols 1 and 2 - Managing Total Innovation and Open Innovation in the 21st Century

ISO Abbreviated Title:

JCR Abbreviated Title:

IDS Number: BGL01

ISBN: 978-7-89490-375-4

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Zeyuan, L., Yongxia, L., Jie, P. and Hui, L. (2007), Bibliometrics analysis on service innovation from 1994 to 2006. *ISMOT’07: Proceedings of the Fifth International Symposium on Management of Technology, Vols 1 and 2 - Managing Total Innovation and Open Innovation in the 21st Century*, 737-739.

Abstract: Using the literatures on service innovation since 1994 in SCI-E, this paper statistically classifies the papers from the aspects, of their numbers, types, source journals, authors, institutions, regions and subject categories, hoping to show the current research situation and some problems of service innovation studies.

Keywords: Analysis, Authors, Bibiometrics, Bibliometrics, Innovation, Institutions, Journals, Papers, Research, Science Citation Index-Expanded, Service, Service Innovation, Source, Toolkits, Users

# Title: First International Workshop on Database Technology and Applications, Proceedings

Full Journal Title: First International Workshop on Database Technology and Applications, Proceedings

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Deng, S., Tian, Y.G. and Zhang, H. (2009), Using the bibliometric analysis to evaluate global scientific production of data mining papers. *First International Workshop on Database Technology and Applications, Proceedings*, 233-238.

Abstract: A bibliometric analysis was applied in this work to evaluate global scientific production of data mining papers of the Science Citation Index (SCI), which was compiled by Institute for Scientific Information (ISI), Philadelphia, USA. The published output analysis showed that data mining research steadily increased over the past 20 years and the annual paper production in 2007 was about three times that in 1999. The analytical results eventually lead to several key findings. Several author keywords became the focus in the last few years, and might be a new research direction in the future. There are clear distinctions among author keywords used in publications from the five most productive countries (USA, China, Germany, England and Canada) in data mining research. Bibliometric methods could quantitatively characterize the development of global scientific production in a specific research field.

Keywords: Bibliometric, Bibliometric Analysis, China, Citation, Citation Analysis, Data Mining, ISI, Lead, Publications, Research, SCI, Science, Science Citation Index, Scientific Production, The Science Citation Index (SCI), USA, Web

# Title: WKDD: 2009 Second International Workshop on Knowledge Discovery and Data Mining, Proceedings

Full Journal Title: WKDD: 2009 Second International Workshop on 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

? Li, C. and Ke, J. (2009), Bibliometric Analysis of Data Mining in the Chinese Social Science Circle. *WKDD: 2009 Second International Workshop on Knowledge Discovery and Data Mining, Proceedings*, 231-234.

Abstract: In this paper, papers about data mining recorded by CSSCI (1998 similar to 2007) are collected and analyzed with statistical analysis and bibliometric analysis such as year distribution, journal distribution, subject distribution, the core author and the geographical distribution of the author. So we can identify the core author, core journals, research institutes and the law of research on data mining in the Chinese social science circle, and reveal the review of data mining study and the main theme in the Chinese social science circle. In collusion, this paper indicates some problems and trends about study on data mining.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Chinese, Collusion, Data, Data Mining, Data-Mining, Distribution, Journal, Journals, Law, Mining, Papers, Research, Review, Science, Social, Social Science, Statistical, Statistical Analysis, The Chinese Social Science Circle, Trends

# Title: Ionics

Full Journal Title: [Ionics](http://www.springerlink.com/content/120106/?p=7a04c59eddaa45a3acf7f788f93f3c42&pi=0)

ISO Abbrev. Title: Ionics

JCR Abbrev. Title: Ionics

ISSN: 0947-7047

Issues/Year: 6

Language: English

Journal Country/Territory: Germany

Publisher: Springer Heidelberg

Publisher Address: Tiergartenstrasse 17, D-69121 Heidelberg, Germany

Subject Categories:

Chemistry, Physical: Impact Factor 0.899, 92/121 (2009)

Electrochemistry: Impact Factor 0.899, 19/24 (2009)

Physics, Condensed Matter: Impact Factor 0.899, 46/66 (2009)

? Badawy, N.A., El-Bayaa, A.A. and bd AlKhalik, E. (2010), Vermiculite as an exchanger for copper(II) and Cr(III) ions, kinetic studies. *Ionics*, **16** (8), 733-739.

Full Text: [2010\Ionics16, 733.pdf](2010/Ionics16,%20733.pdf)

Abstract: The adsorption of CLOD and Cr(III) ions by pure clay mineral, vermiculite, was examined in aqueous solution with respect to the adsorbent dose, initial metal ion concentration, pH, and contact time. The studies showed that vermiculite can be used as an adsorbent material for the moderate removal of Cr(III) and Cu(II) from aqueous solutions. Lagergren first-order, pseudo-second-order, and intraparticle diffusion models were used to describe the kinetic data. The kinetics of adsorption indicates that the process fitted well the intraparticle diffusion model.

Keywords: Adsorbent, Adsorption, Adsorption-Kinetics, Aqueous Solutions, Aqueous-Solution, Clay, Contact Time, Copper(II), Cr(III), Cu(II), Data, Diffusion, Equilibrium, Heavy Metals, Heavy-Metals, Intraparticle Diffusion, Kinetic, Kinetics, Lead(II), Model, Models, pH, Process, Pseudo Second Order, Pseudo-Second-Order, Pure Clay Mineral, Removal, Resins, Sorption, Temperature, Vermiculite, Waste-Water

? Liu, Y., Zheng, Y.A. and Wang, A.Q. (2011), Effect of biotite content of hydrogels on enhanced removal of methylene blue from aqueous solution. *Ionics*, **17** (6), 535-543.

Full Text: [2011\Ionics17, 535.pdf](2011/Ionics17,%20535.pdf)

Abstract: A series of chitosan-g-poly(acrylic acid)/biotite (CTS-g-PAA/BT) hydrogels with unique clay biotite (BT) were prepared and used to remove cationic dye methylene blue (MB) from aqueous solution by batch adsorption experiments. Variables of the system including BT content, initial pH, contact time, initial concentration, and temperature affecting the adsorption efficiency of MB by CTS-g-PAA/BT hydrogels were investigated. Kinetic studies indicated that the adsorption data well followed pseudo-second-order kinetics. Langmuir and Freundlich isotherm models were applied to experimental equilibrium data of MB adsorption depending on temperature. The adsorption equilibrium data obeyed Langmuir isotherm, and the monolayer adsorption capacity calculated from the Langmuir isotherm was 2,125.70 mg/g for CTS-g-PAA/10% BT at 30 A degrees C. The adsorption capacity was much higher compared with other hydrogels with the same content of other clays. The introduction of BT into the hydrogel could effectively improve its adsorption properties and reduce the cost. Thermodynamic parameters were evaluated for the dye-adsorbent systems and revealed that the adsorption process was spontaneous and exothermic in nature. All the information gave an indication that CTS-g-PAA/10% BT could potentially be applied as an efficient adsorbent for cationic dye removal from aqueous solution.

Keywords: Adsorption, Adsorption Equilibrium, Adsorptive Removal, Anionic Dye, Biotite, Carbon, Chitosan, Equilibrium, Fly-Ash, Hydrogel, Information, Isotherm, Kinetic, Kinetics, Kinetics, Langmuir Isotherm, Methylene Blue, Montmorillonite, Nanocomposite, Pseudo-Second-Order, Thermodynamic, Water

# Title: Isokinetics and Exercise Science

Full Journal Title: Isokinetics and Exercise Science

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bohannon, R.W. (2011), Literature reporting normative data for muscle strength measured by hand-held dynamometry: A systematic review. *Isokinetics and Exercise Science*, **19** (3), 143-147.

Full Text: 2011\Iso Exe Sci19, 143.pdf

Abstract: This review was conducted to identify, summarize, and discuss literature purporting to present normative data for measurements obtained using a hand-held dynamometer (HHD). Relevant literature was identified through electronic searches of 4 databases: PubMed, Science Citation Index, Scopus and Cumulative Index of Nursing and Allied Health. Articles identified via the searches were reviewed to determine if they presented normative data obtained with a HHD from healthy individuals. Articles were excluded if the data were not presented within age and gender strata. Data on testing and participant specifics were retrieved. Fifteen studies presented normative data within age and gender strata for measurements obtained with a HHD. Norms were presented for neck flexion and numerous actions at the shoulder, elbow, wrist, fingers, hip, knee and ankle. Norms were presented for a wide age span-children to older adults. Many of these norms are compromised. Norms for older adults (>= 80 years) are lacking. Although norms are available, they should be used with caution. Specifics of testing and samples tested restrict the applicability of the measures.

Keywords: Adults, Aged 20, Articles, Citation, Databases, Dynamometry, Force, Gender, Health, Literature, Measurement, Muscle Strength, Nursing, Older Adults, PUBMED, Reference Values, Reliability, Review, Science, Science Citation Index, Scopus, Strength, Systematic, Systematic Review

# Title: Isotopenpraxis

Full Journal Title: Isotopenpraxis

ISO Abbreviated Title: Isotopenpraxis

JCR Abbreviated Title: Isotopenpraxis

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Winzer, A. and Geyer, R. (1977), Kinetics of adsorption of Na-22(+), K-42(+) and Rb-86(+) tracer from mixed-solvents on activated carbon. *Isotopenpraxis*, **13** (12), 431-435.

# Title: Isotopes in Environmental and Health Studies

Full Journal Title: [Isotopes in Environmental and Health Studies](http://journalsonline.tandf.co.uk/(tzkpny55wsq3rbe3ftsoiy45)/app/home/journal.asp?referrer=backto&backto=linkingpublicationresults,1:300252,1;&absoluteposition=18#A18)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1025-6016

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Cecal, A., Popa, K., Caraus, I. and Potoroaca, V. (2002), Bioaccumulation of Zn-65(2+) ions by some hydrophytic plants. *Isotopes in Environmental and Health Studies*, **38** (1), 33-37.

Abstract: This paper deals with a study on the retention of radioactive ions Zn-65(2+) from diluted waste solutions by the hydrophytic plants Lemna minor, Elodea canadensis, *Pistia stratiotes* and Riccia fluitans. The bioaccumulation degree decreases in the following order: Riccia fluitansapproximate to*Pistia stratiotes*greater than or equal toLemna minor>Elodea canadensis The possibility to improve the bioaccumulation degree varying the temperature and the solution pH, in the absence of other cations, has been studied. The thin layer radiochromatography method has been used and it proved that the saccharides and lipids are the biochemical fractions responsible for the Zn-65(2+) retention.

Keywords: Barks, Bioaccumulation, Elodea Canadensis, Heavy-Metal Ions, Immobilization, Lemna Minor, Mobilization, *Pistia Stratiotes*, Radiochromatography, Removal, Riccia Fluitans, UO22+ Ions, Uranyl Ions, Waters, Zn-65

# Title: Israel Journal of Chemistry

Full Journal Title: Israel Journal of Chemistry

ISO Abbreviated Title: Isr. J. Chem.

JCR Abbreviated Title: Isr J Chem

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hodara, I. (1970), Kinetic and adsorption effects in polarographic reduction of chlorate catalyzed by molybdenum-tungsten mixtures. *Israel Journal of Chemistry*, **8** (6), 831-??.

? Kashtikaplan, S. and Kirowaeisner, E. (1979), Effect of adsorption conformation of intermediates on kinetic- parameters of electrode-reactions - mechanism of the electroreduction of dihalopyridines on the DME. *Israel Journal of Chemistry*, **18** (1-2), 75-79.

# Title: Israel Journal of Medical Sciences

Full Journal Title: [Israel Journal of Medical Sciences](http://www.ima.org.il/imaj/)

ISO Abbreviated Title: Isr. J. Med. Sci.

JCR Abbreviated Title: Israel J Med Sci

ISSN: 0021-2180

Issues/Year: 7

Journal Country/Territory: Israel

Language: English

Publisher: Israel Journal Med Sciences

Publisher Address: 2 Etzel St, French Hill, Jerusalem 97853, Israel

Subject Categories:

Medicine, General & Internal: Impact Factor

? Tulchinsky, T.H., Levine, I., Abrookin, R. and Halperin, R. (1988), Waterborne enteric disease outbreaks in Israel (1976), -1985. *Israel Journal of Medical Sciences*, **24** (11), 644-651.

Abstract: Waterborne enteric disease remains a major public health problem in developing countries, as well as in developed countries, such that the World Health Organization declared 1981-90 the International Water Decade. Israeli experience with waterborne disease outbreaks in the decade 1976-85 is reviewed. Community water systems accounted for 52 outbreaks, with 25 occurring between 1976 and 1980 and 27 between 1981 and 1985. Total cases reported in these outbreaks were 7, 681 and 10, 880 respectively. In the latter period, reported cases resulting from these outbreaks constituted a very high percentage of the total reported cases of diarrheal disease in the country. The waterborne disease outbreaks were mostly due to secondary contamination of water systems due to human error and poor maintenance. In comparison with the United States, Israel experienced 18.7 times as many community waterborne disease outbreaks per capita. The need for routine preventive chlorination, and filtration on a selective basis, of community drinking water systems is strongly indicated, as recommended in current United States and World Health Organization guidelines in order to improve this grossly substandard aspect of Israeli public health.

? Tulchinsky, T.H., Zohar, Y., Goldenberg, E. and Halperin, R. (1988), Microbiologic drinking water quality in Israel: Standards, monitoring, and treatment. *Israel Journal of Medical Sciences*, **24** (11), 652-659.

Abstract: Drinking water quality depends on standards, monitoring and treatment. Israel’s microbiologic water standards are less stringent than those currently recommended internationally, and have focused primarily on bacteriologic levels. Compliance with routine monitoring requirements averaged 86% in 1985-86. However, compliance with retesting of contaminated samples averaged 49% in 1985-86. Compliance with treatment recommendations of district sanitary engineers has also been poor. Poor water quality continues to be a public health problem in Israel, and has contributed to a relatively high incidence of waterborne disease. Current international guidelines recommend filtration and chlorination, particularly for surface water and other contaminated sources. Israel should make this a major public health priority.

? Yosipovitch, G., Heller, I. and Belhassen, B. (1990), A bibliometric study of cardiology in Israel a comparison of the years 1978 1983 and 1988. *Israel Journal of Medical Sciences*, **26** (4), 225.

? Putterman, C. and Lossos, I.S. (1991), Author, verify your references - or, the accuracy of references in Israeli medical journals. *Israel Journal of Medical Sciences*, **27** (2), 109-112.

Abstract: The high rate of citation errors in bibliographies in medical journals has been a source of concern in recent years. We examined the accuracy of references published during 1 year in two Israeli medical journals. Only two-thirds of the randomly selected references examined were error free; 8% had major errors preventing identification of the cited article. Most of the errors found (76%) were in referencing the author(s) or title of the article. We conclude that errors in citation appear also in Israeli medical journals. Editors should emphasize the importance of reference verification; however, primary responsibility for the accuracy of the reference list rests with the author. Authors should exercise more care in preparing bibliographies and should invest more effort in verification of quoted references.

Keywords: Medical Journals, Citation Errors, Authorship

? Yosipovitch, G., Heller, I. and Belhassen, B. (1990), Bibliometric Study of Cardiology in Israel in 1978 1983 and 1988. *Israel Journal of Medical Sciences*, **27** (4), 234-238.

Abstract: This work presents the results of the first bibliometric study of scientific papers in the field of cardiology in Israel. Using a computer-aided search (Medline), papers published in three selected years (1978, 1983 and 1988) were comapred with respect to quantity, type and topic of publication and impact factor. An activity index was designed to measure the relative academic effort devoted to the field of cardiology in Israel. A survey of several cardiological publications worldwide was also carried out. The impact factor and the activity index of Israeli publications markedly increased from 1978 to 1983 but decreased bwteen 1983 and 1988. The ratio of Israeli to world cardiological publications increased from 1978 to 1983, but remained unchanged between 1983 and 1988.

? Yosipovitch, G., Heller, I. and Belhassen, B. (1991), Bibliometric Study of Cardiology in Israel in 1978, 1983 and 1988. *Israel Journal of Medical Sciences*, **27** (4), 234-238.

Abstract: This work presents the results of the first bibliometric study of scientific papers in the field of cardiology in Israel. Using a computer-aided search (Medline), papers published in three selected years (1978, 1983 and 1988) were compared with respect to quantity, type and topic of publication and impact factor. An activity index was designed to measure the relative academic effort devoted to the field of cardiology in Israel. A survey of several cardiological publications worldwide was also carried out. The impact factor and the activity index of Israeli publications markedly increased from 1978 to 1983 but decreased between 1983 and 1988. The ratio of Israeli to world cardiological publications increased from 1978 to 1983, but remained unchanged between 1983 and 1988.

Keywords: Academic Cardiology, Bibliometric, Bibliometric Study, Impact, Impact Factor, Medline, Papers, Publication, Publications, Survey

? Putterman, C. (1992), Quotation accuracy: Fact or fiction. *Israel Journal of Medical Sciences*, **28** (7), 465-470.

Abstract: Results from original studies are not always correctly represented in subsequent medical publications. In this study, randomly selected quotations from Israeli medical journals were examined. Less than 80% of the examined statements were in complete agreement with the original source. In about 7% the cited reference failed to substantiate the previous author’s statement. Similar results were found over a range of American and European general and speciality journals. It is concluded that errors in quotation are a widespread problem in the biomedical literature. Editors and peer reviewers can improve quotation accuracy by stressing this issue in decisions regarding publication. Nevertheless, it seems that the most efficient solution would be for authors to increase their vigilance in accurately quoting results and statements from previous publications.

Keywords: Peer Review, Quotation Errors, Medical Journals, Medical Editors, Medical Journals, References

? Bar Sela, S., Levy, M., Westin, J.B., Laster, R. and Richter, E.D. (1992), Medical findings in nickel-cadmium battery workers. *Israel Journal of Medical Sciences*, **28** (8-9), 578-583.

Abstract: Thirty-eight workers from a factory producing nickel-cadmium and other types of batteries came to us for medical evaluation. They included 21 women and 17 men (seniority 2-20 years, age range 31-63 years), and represented a self-selected subset of 700-900 ever-employed and 200+ recently or currently employed workers in the factory. Thirty-four worked on the nickel-cadmium assembly line. Symptoms and signs included: headache in 34; weakness, fatigue and lassitude in 26; dizziness in 16; pruritus and skin eruptions in 37; gingivitis, teeth loss and caries in 34; nasal congestion, nosebleeds and anosmia in 30; cough, phlegm production, wheezing and shortness of breath in 26; “asthma” in 14; bone pain in 18; urinary frequency, beta 2 microglobulinuria and kidney stones in 17; and sterility or multiple abortions (33) in 8 of 21 women. One additional patient had died from an “amyotrophic lateral sclerosis-like syndrome”, while CT scans in six workers revealed brain atrophy. One other worker had leukemia, and two had died from cancer (lung and pancreas). Those who had worked for more than 10 years had more symptoms and signs than shorter-term employees, especially neurological illness, bone pain and urinary tract problems, including beta 2 microglobulinuria. Past blood and urinary cadmium levels were in the range of 1.6-8.7 micrograms/dl and 8-306 micrograms/l, respectively. Our findings indicated that: a) health risks for workers were not confined to the nickel-cadmium assembly line or to older workers, b) hazardous exposures still existed and illness appeared in new workers after a clean-up and intervention program, and c) exposures involved increased risks for renal disease and cancers. Finally, there is a need to control exposures and determine health risks in the full cohort of those ever employed, in the workers’ children, and in the surrounding environment (air, ground, water) due to the dumping of waste from the plant.

? Steinberg, A. (1994), The terminally ill-Secular and Jewish ethical aspects. *Israel Journal of Medical Sciences*, **30** (1), 130-135.

Abstract: Many ethical, religious, social and legal dilemmas are involved in the care of dying patients. Major changes and developments in recent years have greatly intensified these moral problems. In this article a comprehensive analysis of the relevant principles and practical approaches is offered in order to enhance the ability of health care providers to attain morally sound decisions concerning the dying patient. The relevant ethical principles include the following: value of life, quality of life, nonmaleficence, beneficence, autonomy, paternalism, justice, and the physician’s integrity. In practical terms, there are three major categories: the patient, the treatment and the decision maker. A comparative analysis between secular and Jewish attitudes towards the terminally ill patient has revealed significant differences both in the fundamental underlying principles as well as in the practical solutions to the diverse and difficult ethical problems.

Keywords: Ethics, Jewish Ethics, Terminally Ill, Euthanasia

# Title: ISRN Chemical Engineering

Full Journal Title: ISRN Chemical Engineering

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

# Title: Issues & Studies

Full Journal Title: [Issues & Studies](http://www.ceps.com.tw/ec/ecJnlIntro.aspx?Jnliid=768); [Issues & Studies](http://iir.nccu.edu.tw/ise/ise200303.htm)

ISO Abbreviated Title: Issues Stud.

JCR Abbreviated Title: Issues Stud

ISSN: 1013-2511

Issues/Year: 12

Journal Country/Territory: Taiwan

Language: English

Publisher: Inst Internat Relations

Publisher Address: 64 Wan Shou Road, Mucha, Taipei, Taiwan

Subject Categories:

International Relations: Impact Factor 0.149, 43/50 (1997); Impact Factor 0.092, 49/52 (1998); Impact Factor 0.194, 40/52 (1999); Impact Factor 0.218, 41/52 (2000); Impact Factor 0.177, 37/52 (2001); Impact Factor 0.286, 38/53 (2002) SSCI

Political Science: Impact Factor 0.149, 63/73 (1997); Impact Factor 0.092, 66/73 (1998); Impact Factor 0.194, 57/76 (1999); Impact Factor 0.218, 59/77 (2000); Impact Factor 0.177, 63/78 (2001); Impact Factor 0.286, 53/80 (2002) SSCI

? Melin, G., Danell, R. and Persson, O. (2000), A bibliometric mapping of the scientific landscape on Taiwan. *Issues & Studies*, **36** (5), 61-82.

Full Text: [2000\Iss Stu36, 61.pdf](2000/Iss%20Stu36,%2061.pdf)

Abstract: This study makes an attempt to explore the scientific landscape on Taiwan. Through bibliometric citation analysis and mapping techniques the main actors at the university level are identified and the structure of the national research and development (R&D) system is described with respect to article production and publication patterns. Special attention is paid to patterns of research collaboration, nationally as well as internationally. This paper concludes that Taiwan is well integrated in the international scientific macro-networks. However the findings do not give support to the idea that Asian science and scientific thinking would differ from Western science; on the contrary, Taiwan has developed quickly into a science nation of significance by adapting Western scientific traditions and becoming integrated in international scientific networks.

Keywords: Bibliometrics, Co-Authorship, Research Collaboration, Taiwan R&D, Scientific Networks, Research Collaboration, Science, Universities, Asia

# Title: Italian Journal of Animal Science

Full Journal Title: Italian Journal of Animal Science

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Pulina, G. and Francesconi, A.H.D. (2007), Some bibliometric indexes for members of the Scientific Association of Animal Production (ASPA). *Italian Journal of Animal Science*, **6** (1), 83-103.

Abstract: This study calculated several bibliometric indexes to analyze the scientific output of 363 members of the Scientific Association of Animal Production (ASPA) in Italy, based on their publications listed by ISI-Thompson, Web of Science database (search period from 1989 until 2006). Five main research areas were considered: AGR/17 (Animal genetics and breeding), AGR/18 (Animal nutrition and feeding), AGR/19 (Animal husbandry), AGR/20 (Poultry, rabbits and fish production) and External researcher (Ere). Position groups were: FP (Full Professor), AP (Associate Professor), Re (Researcher), EReUni (scientists working temporarily at the University or professors of an area different from AGR/17-20), and EReInst (scientists working at other institutions). Each institution was classified according to three geographical areas of Italy: North, Centre and South. Main calculated bibliometric indexes were: N-i = total number of papers published by member i over y(i) years; y(i) = number of years publishing of member i; C, = total number of citations of member i; IFPpersonal. = C-i/N-i, Personal Impact factor of member i; Total IFjournal. = Sum of impact factor reported by the ISI-Thompson database of the journal in which a paper of member i was published (Journal Citation Reports Science Edition, 2004); Mean IFjournal. Mean impact factor of all papers published in journals having a recognized IFJournal. by the ISI-Thompson database for member i; h = number of papers with at least h citations; m = h/y, i.e. average increase of h over the y(i) years publishing; and a = C-i/h(2). Among the studied bibliometric indexes, N-i, C-i, Total IFjournal and h are reliable, while IFpersonal, and Mean IFjournal are not, to evaluate the scientific career of Animal Scientists in Italy. FP and members of AGP/17 tend to show the highest values of bibliometric indexes. Most ASPA members work in the North of Italy, which shows the highest median and highest percentage of scientists with maximum values for most bibliometric parameters. The scientific system of Animal Science in Italy has a fairly good degree of internationalization, but greater efforts should be made to increase the productivity and impact of Animal Scientists.

Keywords: ASPA, Bibliometric, Bibliometry, Breeding, Citations, Evaluation, Feeding, Fish, Genetics, Groups, Impact, Impact Factor, Institutions, Italy, Journal, Journal Citation Reports, Journals, Made, Ni, Nutrition, Output, Paper, Parameters, Production, Productivity, Publications, Publishing, Rabbits, Research, Scientific Output, Scientometry, Web of Science

# Title: Italian Journal of Neurological Sciences

Full Journal Title: [Italian Journal of Neurological Sciences](http://www.springerlink.com/content/103371/)

ISO Abbreviated Title: Ital. J. Neurol. Sci.

JCR Abbreviated Title: Ital J Neurol Sci

ISSN: 0392-0461

Issues/Year: 6

Journal Country/Territory: Italy

Language: English

Publisher: Springer-Verlag

Publisher Address: 175 Fifth Ave, New York, NY 10010

Subject Categories:

Clinical Neurology: Impact Factor 0.635, / (2001)

Neurosciences: Impact Factor 0.635, / (2001)

? Tesio, L., Gamba, C., Capelli, A. and Franchignoni, F.P. (1995), Rehabilitation - the cinderella of neurological research: A bibliometric study. *Italian Journal of Neurological Sciences*, **16** (7), 473-477.

Full Text: [1995\Ita J Neu Sci16, 473.pdf](1995/Ita%20J%20Neu%20Sci16,%20473.pdf)

Abstract: Rehabilitation is under-represented in the neurological literature on disabling diseases. A Medline search was conducted to retrieve the articles published between January 1991 and June 1994 under the main headings of Stroke, Parkinson’s disease, Multiple sclerosis, Brain injury, Ataxia and Dementia. These were then combined with the sub-heading Rehabilitation The former search yielded 27724 articles, the latter 1272 (4.6%), In 1992, the Journal of Citation Reports (JCR) assigned to Journals publishing rehabilitation papers an average Impact Factor (IF) of 0.7-2.8 (median 1.8): that is, 31-90% (depending on the various main headings, median 68%) of the average IF given to Journals publishing non-rehabilitation papers, In the present study, the weight of the literature was defined as the product of the number of articles multiplied by the IF of the corresponding Journal (IF = 0 for non-JCR Journals), Across the various neurologic conditions, the weight of the Rehab literature was 0.1-7% (median 2%) of the weight of the non-Rehab literature, The results suggest that neurology is still reluctant to face the disability challenge.

Keywords: Bibliometrics, Research, Neurology, Rehabilitation, Physical Medicine, Journals

# Title: Italian Studies

Full Journal Title: Italian Studies

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JCR Abbreviated Title:

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Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bonsaver, G. (2008), Authorial echoes: Textuality and self-plagiarism in the narrative of Luigi Pirandello. *Italian Studies*, **63** (1), 159-160.

Full Text: [2008\Ita Stu63, 159.pdf](2008/Ita%20Stu63,%20159.pdf)

# Title: ITT Research Institute Report

Hass, W.R. and Miller, S. (1972), Evaluation of lead plant wastewater treatment methods. *ITT Research Institute Report*, **117**, RT: C8213.

# Title: Izvestiya Akademii Nauk Fizika Atmosfery I Okeana

Full Journal Title: Izvestiya Akademii Nauk Fizika Atmosfery I Okeana

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0002-3515

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Fotsenko, S.F. (1994), The Black-Sea tsunami. *Izvestiya Akademii Nauk Fizika Atmosfery I Okeana*, **30** (4), 513-519.

Abstract: The results of the analysis of tsunami in the Black Sea are presented. Most realistic zones of seismic tsunami generation in the region are established. The characteristics of four historical tsunami in the Black Sea are collected. A numerical ray model of surface gravity waves propagation in bounded basins is developed. Its application allowed to investigate the properties of tsunami refraction in the Black Sea.

? Filonov, A.E. (1999), Tsunami waves on the shelf near the west coast of Mexico (October 9, 1995). *Izvestiya Akademii Nauk Fizika Atmosfery I Okeana*, **35** (3), 406-416.

Abstract: The materials obtained by Submerged buoy stations on the shelf,of the west coast of Mexico were analyzed. The stations were equipped with autonomous sensors of temperature, temperature, electric conductivity, and pressure. The parameters of tsunami waves in the open sea were measured, and their interaction with the internal tide was registered.

# Title: Izvestiya Akademii Nauk SSSR

Izv. Akad. Nauk SSSR Ser. Khim.

Izvestiya Akademii Nauk Sssr Fizika Atmosfery I Okeana

Izvestiya Akademii Nauk Sssr Fizika Zemli

Izvestiya Akademii Nauk Sssr Seriya Biologicheskaya

Izvestiya Akademii Nauk Sssr Seriya Fizicheskaya

Izvestiya Akademii Nauk Sssr Seriya Geologicheskaya

Izvestiya Akademii Nauk Sssr-Seriya Khimicheskaya

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Full Journal Title: Izvestiya Akademii Nauk SSSR

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: MModel

?? Elovich, S.Y. and Lanirov, O.G. (1962), Theory of adsorption from solutions of nonelectrolytites on solid adsorbents (I) equation adsorption isotherm from solutions and the analysis of its simplest from, (II) verification of the equation of adsorption isotherm from solution. *Izvestiya Akademii Nauk SSSR*, **2**, 209-216.

? Bering, B.P., Serpinskii, V.V. and Surinova, S.I. (1965), Adsorption of a gas mixture. Communication 7. Joint adsorption of a binary mixture of vapors on activated charcoal. *Izvestiya Akademii Nauk SSSR*, **5**, 769-776.

? Dubinin, M.M. and Astakhov, V.A. (1971), Development of the concepts of volume filling of microporous in the adsorption of gasses and vapors by microporous adsorbents. *Izvestiya Akademii Nauk SSSR*, **5??**, 5-11.

?? Dubinin, M.M. and Astakhov, V.A. (1971), Description of adsorption equilibrium of vapors on zeolites over wide ranges of temperatures and pressure. *Izvestiya Akademii Nauk SSSR*, **5**, 5-9.

? Bering, B.P., Kabanova, O.N., Servinskii, V.V., Surinova, S.I. and Yakubov T.S. (1971), A new method of calculation of the adsorption of binary mixtures of vapors on microporous adsorbents. *Izvestiya Akademii Nauk SSSR*, **12**, 2641-2648.

# Title: Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya

Full Journal Title: Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya

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Publisher: Mezhdunarodnaya Kniga, 39 Dimitrova UL., 113095 Moscow, Russia

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: Impact Factor

? Bering, B.P. and Serpinsk, V.V. (1970), On kinetics of non-isothermal adsorption. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (6), 1421-??.

? Bering, B.P. and Serpinsk, V.V. (1970), On calculation of true adsorption isotherms for components of solution from composite adsorption isotherm. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (6), 1232-??.

? Zolotare, P.P. (1970), On adsorption dynamics process in immobile bed of adsorbent grains of different sizes in case of a linear isotherm. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (8), 1703-??.

? Zolotare, P.P. (1970), Theory of adsorption kinetics with allowance made for mal effects - rate of process is limited by external mass and heat transfer. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (12), 2831-??.

? Dubini, M.M. and Astakhov, B.A. (1971), ??. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (??), 5-??.

? Zolotare, P.P. (1971), Adsorption kinetics of mixture of 2 substances when external mass-transfer is its limiting stage. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (9), 2055-&.

? Bering, B.P., Kabanova, O.N., Serpinsk, V.V., Surinova, S.I. and Yakubov, T.S. (1971), New method for calculation of adsorption of binary vapour mixtures on microporous adsorbents. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (12), 2641-&.

? Bering, B.P., Serpinsk, V.V. and Surinova, S.I. (1972), Adsorption of vapor mixtures of propane and ethyl chloride on zeolite NaX. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (2), 436-&.

? Zolotare, P.P. (1972), Adsorption kinetics in case of rectangular isotherm and varying concentration of adsorptive on grain-boundary. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (3), 526-&.

? Zolotare, P.P., Dubinin, M.M., Polyakov, N.S., Nikolaev, K.M. and Radushke, L.V. (1972), Investigation of adsorption dynamics in wide-range of concentrations. 3. Fundamentals of theory of process. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (7), 1484-&.

? Bering, B.P., Serpinsk, V.V. and Surinova, S.I. (1973), Calculation of excess adsorption isotherm from solution on non- porous adsorbent based on individual adsorption isotherms from gas-phase. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (1), 3-6.

? Zolotare, P.P. (1973), Influence of incidental variation of adsorptive concentration in a flow on adsorption kinetics in adsorbent grain. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (1), 116-119.

? Dubinin, M.M., Zolotare, P.P., Nikolaev, K.M., Polyakov, N.S., Petrova, L.I. and Radushke, L.V. (1973), Study of adsorption dynamics in broad range of brake down concentrations. 4. Theoretical analysis of experimental-data. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (2), 293-297.

? Bering, B.P., Serpinsk, V.V. and Surinova, S.I. (1973), Calculation of excess adsorption isotherm from solution on non-porous adsorbent based on individual adsorption isotherms from gas-phase. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (1), 3-6.

? Bering, B.P., Serpinsk, V.V. and Surinova, S.I. (1973), Adsorption of benzene and trimethylpentane vapors mixtures on graphitized carbon-black. *Izvestiya Akademii Nauk SSSR-Seriya Khimicheskaya*, (1), 7-10.

# Title: Izvestiya Vysshikh Uchebnykh Zavedenii Fizika

Full Journal Title: Izvestiya Vysshikh Uchebnykh Zavedenii Fizika

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ISSN:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Sivov, Y.A., Styrov, V.V. and Yagnova, L.I. (1970), Effect of oxygen adsorption on RRL kinetics of phosphors. *Izvestiya Vysshikh Uchebnykh Zavedenii Fizika*, (9), 124-??.

? Kozlov, S.N. (1975), Kinetics of semiconductor surface charging at adsorption. *Izvestiya Vysshikh Uchebnykh Zavedenii Fizika*, (2), 116-120.

# Title: Izvestiya Vysshikh Uchebnykh Zavedenii Khimiya I Khimicheskaya Tekhnologiya

(IVUKA; Izv. VUZ Khim. i Khim. Tekhnol.; Izv. Vyssh. Uchebn. Zaved. Khim. Tekhnol.)

Full Journal Title: Izvestiya Vysshikh Uchebnykh Zavedenii Khimiya I Khimicheskaya Tekhnologiya

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

Skrylev, L.D., Beldii, M.G., Beldii, S.K. and Kostik, V.V. (1992), Finely-dispersed saponified peat wax as flotation collector of heavy-metal ions. *Izvestiya Vysshikh Uchebnykh Zavedenii Khimiya I Khimicheskaya Tekhnologiya*, **35**, 74-80.

Skrylev, L.D., Beldii, M.G., Babinets, S.K. and Kostik, V.V. (1992), Flotation isolation of thorium ions collected through tin-emulsified solutions of aliphatic-acid in benzene. *Izvestiya Vysshikh Uchebnykh Zavedenii Khimiya I Khimicheskaya Tekhnologiya*, **35**, 74-80.