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Comment

Comment on "Cadmium removal from aqueous solutions by chitin: kinetic and equilibrium studies"

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Recently, Benguella and Benaissa [1] published the paper entitled as above. In the section on Effect of Contact Time, Benguella and Benaissa mentioned that "Kinetics of heavy metals adsorption can be modeled by the first-order Lagergren equation, the pseudo-second-order rate equation and the second-order rate equation [33–35] shown below as Eqs. (1)–(3), respectively". In fact, in their Ref. [33] Raji and Anirudhan [2] cited Lagergren's paper as a second-hand reference as Namasivayam and Ranganathan's publication [3]. And in their Ref. [34], Zhang et al. [4] also used a second-hand reference as a paper published by Singh et al. [5]. The citation style is incorrect in both papers. The correct reference style citing the original Lagergren's paper was first presented by Ho and McKay in 1998 [6]. That is 'Lagergren, S. (1898), Zur theorie der sogenannten adsorption gelöster stoffe. Kungliga Svenska Vetenskapsakademiens. Handlingar, Band 24, No. 4, 1–39 [7]'. Its English translated style is 'Lagergren, S. (1898), About the theory of so-called adsorption of soluble substances. Kungliga Svenska Vetenskapsakademiens. Handlingar, Band 24, No. 4, 1–39' and the abbreviation style is 'Lagergren, S. (1898), Zur theorie der sogenannten adsorption gelöster stoffe. K. Sven. Vetenskapsakad. Handl., Band 24, No. 4, 1–39'. Benguella and Benaissa cited Kapoor et al. [8] as Ref. [35] in their paper for pseudo-second-order rate equation. However, in 1995, Ho developed a pseudo-second-order kinetic expression for the sorption systems of divalent metal ions using sphagnum moss peat in which chemical sorption is the rate-limiting step [9]. The earlier application of the pseudo-second-order equation to the kinetic studies of competitive heavy metal adsorption by sphagnum moss peat was undertaken by Ho et al. [10]. The pseudo-second-order rate expression of Ho has been applied to the sorption of metal ions and dyes from aqueous solution [6,11–16]. In addition, Ho's kinetic expression has also been applied to the sorption of dye onto the mixture sorbent sorption processes [17]. Numerous applications of Ho's kinetic expression have been reported in recent years. A list of pseudo-second-order systems is given in Table 1.

I suggest that Benguella and Benaissa should cite the original paper and make sure what the correct style for reference is.

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Table 1
Pseudo-second-order kinetic model of various related systems from the literature

Sorbent	Sorbate	References
2-Mercaptobenzimidazole-clay	Hg(II)	[18]
Activated carbon	Hg(II)	[19]
Activated clay	Basic Red 18, Acid Blue 9	[20]
Arundo canes	Cd(II), Ni(II)	[21]
Aspergillus niger	Basic Blue 9,	[22]
Aspergillus niger	Acid Blue 29	[23]
Aspergillus niger	Pb(II), Cd(II), Cu(II), Ni(II)	[8]
C. vulgaris	Cd(II)	[24]
Coir	Cu(II), Pb(II)	[25]
Cubic mesoporous silicate	Tetramethyl ammonium hydroxide	[26]
Fly ash	Omega Chrome Red ME, *o*-cresol, *p*-nitrophenol	[15]
Glass	Cu(II)	[27]
Lignite-based carbons	Cu(II), Ni(II)	[28]
Microcystis	Ni(II), Cr(VI)	[29]
Peat	Basic Blue 69, Acid Blue 25	[12]
Peat	Pb(II), Cu(II), Ni(II)	[30]
Pith	Basic Red 22, Acid Red 114	[14]
Polysaccharide	Pb(II), Cu(II), Zn(II), Cd(II), Ni(II)	[31]
Rhizopus arrhizus	Remazol Black B	[32]
Sago	Cu(II), Pb(II)	[33]
Spent grain	Pb(II), Cd(II)	[34]
Sphagnum moss peat	Chrysoidine (BO2), Astrazon Blue (BB3), Astrazone Blue (BB69)	[13]
Trametes versicolor	Cd(II)	[35]
Wood	Basic Blue 69, Acid Blue 25	[6]
Zeolite tuff	Pb(II)	[36]

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