Journal of Colloid and Interface Science 479 (2016) 87–88

Contents lists available at ScienceDirect

Journal of Colloid and Interface Science

journal homepage: www.elsevier.com/locate/jcis

Letter to the Editor

Comments on the Rebuttal to the criticism on the paper "Application of Mn/MCM-41 as an adsorbent to remove Methyl Blue from aqueous solution"

Recently, Shao et al. published the paper entitled Rebuttal to the criticism on the paper "Application of Mn/MCM-41 as an adsorbent to remove Methyl Blue from aqueous solution" [1]. Authors mentioned "In Section 3.9, adsorption kinetics we have cited the incorrect Ref. [2]. We are so sorry for that error we made, Eqs. (10)–(12) could be found in the No. 31 Ref. [3] in that paper."

$$\frac{1}{q_t} = \left(\frac{k_1}{q_1}\right)\left(\frac{1}{t}\right) + \frac{1}{q_1} \tag{10}$$

$$\frac{t}{q_t} = \frac{1}{k_2 q_2^2} + \frac{t}{q_2} \tag{11}$$

$$q_t = k_i t^{0.5} + C \tag{12}$$

It has been pointed out that Eqs. (10) and (12) are not correct in Comments on the paper "Application of Mn/MCM-41 as an adsorbent to remove Methyl Blue from aqueous solution" [4]. Units of parameters in Eq. (10), also cannot agree each other. Thus results and conclusion in "Application of Mn/MCM-41 as an adsorbent to remove methyl blue from aqueous solution" [5] might not be correct. However authors do not mentioned this main point in the original paper [5].

Shao et al. [1] recommended a secondary material to be reference by Yurdakoç et al. [3] for Eqs. (10)–(12). Yurdakoç et al. cited a secondary material to be reference by Özcan and Özcan [6] for Eqs. (10)–(12). Özcan and Özcan cited a secondary material to be reference by Kannan and Sundaram [7] for the pseudo-first-order equation, Eq. (10). Kannan and Sundaram cited secondary material to be references by Annadurai and Krishnan [8]. However Eqs. (10)–(12) cannot be found in the reference by Annadurai and Krishnan [8].

In fact, Eqs. (10) and (11) are the same. From Eqs. (10) and (11), k_1 can be obtained as

$$k_1 = \frac{1}{k_2 q_e}$$

In 1898, Lagergren firstly presented the first order rate equation for the adsorption of oxalic acid and malonic acid onto charcoal [9]. In order to distinguish kinetics equation based on concentration of solution and adsorption capacity of solid, Lagergren's first order rate equation has been called pseudo-first order since 1998 [10,11]. Details of Lagergren rate equation for adsorption reactions were published in 2004 [12]. The most popular form used is:

$$\log(q_e - q_t) = \log(q_e) - \frac{k}{2.303}t \tag{3}$$

q_e and q_t (mg/g) are the adsorption capacities at equilibrium and at time t respectively. k (1/min) is the rate constant of pseudo-first order adsorption.

In recent years, the same mistake can be found in *Desalination and Water Treatment* [13], *Separation Science and Technology* [14], *Chemical Engineering Journal* [15,16], *International Journal of Biological Macromolecules* [17], *Carbohydrate Polymers* [18], *Applied Clay Science* [19], *Journal of Hazardous Materials* [20], *Journal of Colloid and Interface Science* [5], *Journal of Industrial and Engineering Chemistry* [21], *RSC Advances* [22], *and Water Science and Technology* [23]. However only few related comments were accepted in some journals, such as *Food Chemistry* [24], *Journal of Molecular Liquids* [25], *Journal of Environmental Sciences-China* [26], *Journal of Hazardous Materials* [27], *Applied Clay Science* [28], and *International Journal of Biological Macromolecules* [29].

Citing the original paper not only respects the work of the authors who presented a novel research idea but also discussed this idea in detail in the body of their paper [30]. Greater emphasis and responsibility must be placed on authors to check the accuracy of cited references in their submitted manuscripts [31]. Reviewers should also take the responsibility for this section of the manuscript. Finally the journal editors have to insist on reference accuracy in article accepted for publication [32]. In my view, Shao et al. should have cited the original paper for the kinetic models and thereby provided greater accuracy and information details about the kinetic expression they employed.

References

[1] L.S. Li, Y.M. Shao, J. Colloid Interface Sci. (2016) (in press).
[2] L. Sciascia, M.L.T. Liveri, M. Merli, Appl. Clay Sci. 53 (2011) 657–668.
[3] M. Yurdakoç, Y. Seki, S. Karahan, K. Yurdakoç, J. Colloid Interface Sci. 286 (2005) 440–446.
[4] Y.S. Ho, J. Colloid Interface Sci. (2016) (in press).
[5] Y.M. Shao, X. Wang, Y. Kang, Y.H. Shu, Q.Q. Sun, L.S. Li, J. Colloid Interface Sci. 429 (2014) 25–33.
[6] A.S. Özcan, A. Özcan, J. Colloid Interface Sci. 276 (2004) 39–46.
[7] N. Kannan, M.M. Sundaram, Dyes Pigment 51 (2001) 25–40.
[8] G. Annadurai, M.R.V. Krishnan, Indian J. Environ. Protect. 16 (1996) 444–449.
[9] S. Lagergren, Bihang till K. Svenska Vet.-Akad. Handlingar 24 (1898) 1–39.
[10] Y.S. Ho, G. McKay, Chem. Eng. J. 70 (1998) 115–124.
[11] Y.S. Ho, G. McKay, Process Saf. Environ. Protect. 76 (1998) 183–191.
[12] Y.S. Ho, Scientometrics 59 (2004) 171–177.
[13] M. Salman, M. Athar, U. Farooq, S. Nazir, H. Nazir, Desalin. Water Treat. 51 (2013) 4390–4401.
[14] C.H. Liu, W.C. Wu, H.Y. Lai, Sep. Sci. Technol. 48 (2013) 923–930.
[15] A. Esmaeli, M. Jokar, M. Kousha, E. Daneshvar, H. Zilouei, K. Karimi, Chem. Eng. J. 217 (2013) 329–336.
[16] G.R. Zhu, P. Wang, P.F. Qi, C.J. Gao, Chem. Eng. J. 235 (2014) 340–348.
[17] L.F. Zhang, X. Liu, W. Xia, W.Q. Zhang, Int. J. Biol. Macromol. 64 (2014) 155–161.

http://dx.doi.org/10.1016/j.jcis.2016.06.052

[18] Y.M. Zhou, S.Y. Fu, L.L. Zhang, H.Y. Zhan, M.V. Levit, Carbohydr. Polym. 101 (2014) 75–82.
[19] X.Y. Jin, S.X. Zha, S.B. Li, Z.L. Chen, Appl. Clay Sci. 102 (2014) 196–201.
[20] R.J. Li, L.F. Liu, F.L. Yang, J. Hazard. Mater. 280 (2014) 20–30.
[21] L. Huang, Y. Zhou, X.Q. Guo, Z.L. Chen, J. Ind. Eng. Chem. 22 (2015) 280–287.
[22] P.E. Hande, A.B. Samui, P.S. Kulkarni, RSC Adv. 5 (2015) 73434–73443.
[23] R.H. Huang, Q. Liu, L.J. Zhang, B.C. Yang, Water Sci. Technol. 71 (2015) 174–182.
[24] Y.S. Ho, Food Chem. 161 (2014) 323.
[25] Y.S. Ho, J. Mol. Liq. 198 (2014) 322.
[26] Y.S. Ho, J. Environ. Sci. 26 (2014) 2571–2572.
[27] Y.S. Ho, J. Hazard. Mater. 311 (2016) 273–274.
[28] Y.S. Ho, Appl. Clay Sci. 126 (2016) 297–298.
[29] Y.S. Ho, Int. J. Biol. Macromol. 88 (2016) 505–506.
[30] Y.S. Ho, Adsorpt. Sci. Technol. 28 (2010) 465.
[31] R. Siebers, J. Allergy Clin. Immunol. 105 (2000) 837–838.
[32] P.M. George, K. Robbins, J. Am. Acad. Dermatol. 31 (1994) 61–64.

Yuh-Shan Ho
Water Research Centre, Asia University, Taichung 41354, Taiwan
E-mail address: ysho@asia.edu.tw

Available online 23 June 2016