

Comment on “New Calix[4]arene Appended Amberlite XAD-4 Resin with Versatile Perchlorate Removal Efficiency”

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Recently, Memon et al. published the paper entitled as above.¹ In the section Adsorption Kinetics, authors presented a pseudo-second-order kinetic equation as follows.

$$\frac{t}{q_t} = \left(\frac{t}{k_2 q_e^2} \right) + \left(\frac{1}{q_e} \right)$$

This pseudo second-order model is not correct. The pseudo-second order kinetic expression for the adsorption systems of divalent metal ions using sphagnum moss peat has been presented by Ho in 1995.² The pseudo-second order kinetic model has a nonlinear form $q_t = (q_e^2 kt)/(1 + q_e kt)$ and four linear forms such as $(t/q_t) = (1/kq_e^2) + (1/q_e)t$, $(1/q_t) = (1/kq_e^2)(1/t) + (1/q_e)$, $q_t = q_e - (1/kq_e)(q_t/t)$, and $(q_t/t) = kq_e^2 - kq_e q_t$.³ The model was also used in numbers of adsorption systems in subsequent years.⁴ A review of second-order models for adsorption systems gave more details.⁵

In order to stop the proliferation of the mistake, comments have been made in *Water Research*,⁶ *Carbohydrate Polymers*,⁷ *Journal of Radioanalytical and Nuclear Chemistry*,⁸ and *Industrial Crops and Products*.⁹ 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.¹⁰ In my view, Memon et al. should have cited the original paper for the kinetic model and thereby provided greater accuracy and information details about the kinetic expression they employed.

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Notes

The authors declare no competing financial interest.

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