

## Comments on “Simultaneous Adsorption of Aniline and Cr(VI) Ion by Activated Carbon/Chitosan Composite”

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Recently, Huang et al. published the article entitled “Simultaneous adsorption of aniline and Cr(VI) ion by activated carbon/chitosan composite.”<sup>1</sup> In Section Adsorption Kinetics, authors presented “pseudo-second-order kinetic model” by the equation:

$$\frac{1}{q_t} = \frac{1}{k_2 q_e^2} + \frac{1}{q_e}$$

without any reference. This pseudosecond-order model is not correct. In fact, the pseudosecond-order kinetic expression for the adsorption systems of divalent metal ions using sphagnum moss peat has been presented.<sup>2</sup> In 1997, a corrected pseudosecond-order kinetic expression was reported in a conference<sup>3</sup> and journals in following years<sup>4,5</sup> because a mistake was included in the previous publications. The pseudosecond-order kinetic model has a nonlinear form  $q_t = \frac{q_e^2 kt}{1 + q_e kt}$  and four linear forms, such as  $\frac{t}{q_t} = \frac{1}{kq_e^2} + \frac{1}{q_e} t$ ,  $\frac{1}{q_t} = \left(\frac{1}{kq_e^2}\right) \frac{1}{t} + \frac{1}{q_e}$ ,  $q_t = q_e - \left(\frac{1}{kq_e}\right) \frac{q_t}{t}$ , and  $\frac{q_t}{t} = kq_e^2 - kq_e q_t$ .<sup>6</sup>

The model was also used in numbers of adsorption systems in subsequent years.<sup>7</sup> A review of second-order models for adsorption systems gave more details.<sup>8</sup>

### REFERENCES

- Huang, R. H.; Yang, B. C.; Liu, Q.; Liu, Y. P. *J. Appl. Polym. Sci.* **2014**, *131*, 39903.
- Ho, Y. S., Ph.D. Thesis, Adsorption of heavy metals from waste streams by peat, University of Birmingham: Birmingham, UK, **1995**.
- Ho, Y. S.; McKay, G. *Advances in Adsorption Separation Science and Technology*, In Proceedings of the Fourth China–Japan–USA Symposium on Advanced Adsorption Separation Science and Technology, South China University of Technology Press: Guangzhou, China, May 13–16, **1997**; p 257.
- Ho, Y. S.; McKay, G. *Chem. Eng. J.* **1998**, *70*, 115.
- Ho, Y. S.; McKay, G. *Process Biochem.* **1999**, *34*, 451.
- Ho, Y. S. *Water Res.* **2006**, *40*, 119.
- Ho, Y. S. *J. Colloid Interface Sci.* **2005**, *283*, 274.
- Ho, Y. S. *J. Hazard. Mater.* **2006**, *136*, 681.