

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.”¹ 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.² In 1997, a corrected pseudosecond-order kinetic expression was reported in a conference³ and journals in following years^{4,5} 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 $\frac{q_t}{t} = kq_e^2 - kq_e q_t$.⁶

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

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