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:

\[
\frac{1}{q_t} = \frac{1}{k_2q_e^2} + \frac{1}{q_e}
\]

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 years4,5 because a mistake was included in the previous publications. The pseudosecond-order kinetic model has a nonlinear form \( q_t = \frac{q_e k t}{1 + q_e k t} \) and four linear forms, such as \( \frac{1}{q} = \frac{1}{k_2 q_e^2} + \frac{1}{q_e} t \), \( \frac{1}{q} = \left( \frac{1}{k_2 q_e^2} \right) t + \frac{1}{q_e} \), \( q_t = q_e - \left( \frac{1}{k_2 q_e} \right) t \), and \( \frac{q}{t} = k q_e^2 - k q_e q_t \).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

REFERENCES