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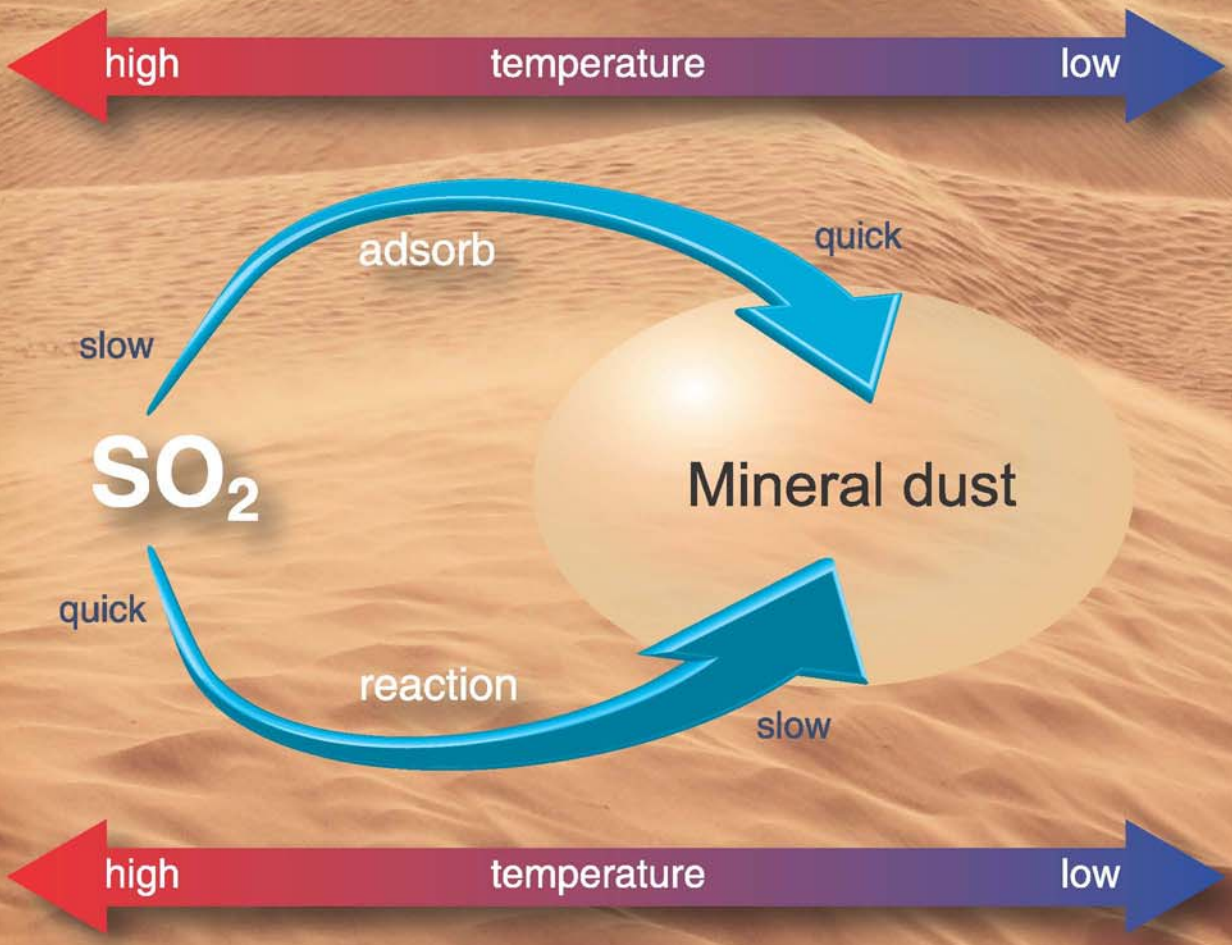

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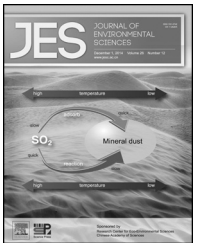

Reply to comments on "Adsorption of 2-mercaptobenzothiazole from aqueous solution by organo-bentonite" by Yuhshan Ho

There were several first-order kinetic equations used and cited by previous publications (Doğan et al., 2007; Eftekhari et al., 2010; Lagergren, 1898; Kannan and Sundaram, 2001; Özcan et al., 2006):

$$\log\frac{C_i}{C_t}=\frac{k}{2.303}t \quad (1)$$

$$\log(q_e-q_t)=\log q_e-\frac{k}{2.303}t \quad (2)$$

$$\log[1-U(T)]=-\frac{k}{2.303}t \quad (3)$$

$$\frac{1}{q_t}=\left(\frac{k_1}{q_1}\right)\left(\frac{1}{t}\right)+\frac{1}{q_1} \quad (4)$$

where, C_i (mg/L) and C_t (mg/L) are the concentration of adsorbate at time, zero and at time t, respectively; q_e (mg/g) and q_1 (mg/g) are the adsorption capacity at equilibrium; q_t (mg/g) is the adsorption capacity at time t. $U(T) = [(C_i - C_t) / (C_i - C_e)]$; C_e (mg/L) is the concentration of adsorbate at equilibrium; and k (per min) and k_1 (per min) are the adsorption rate constants.

Eq. (2) is the Lagergren equation (Lagergren, 1898). We selected Eq. (4) in our article (Jing et al., 2013). There might be a little miss of citation about the literature (Kannan and Sundaram, 2001; Özcan et al., 2006).

The second-order kinetic equation is shown in the following Eq. (5), which was used in the literature (Doğan et al., 2007; Eftekhari et al., 2010) and the details of second-order kinetic were reported in the work of Ho (2006).

$$\frac{t}{q_t}=\frac{1}{k_2q_2^2}+\frac{1}{q_2}t \quad (5)$$

where, q_2 (mg/g) and q_t (mg/g) are the adsorption capacity at equilibrium and time t, respectively; k_2 (g/(mg/min)) is the rate constant.

The change of the subscript of the rate constant k in the second-order kinetic equation was ignored from the manuscript to the published form of Jing et al. (2013). In the article, the subscript of the rate constant k in the second-order kinetic equation and the subscript of the rate constant k in the following description about k_2 are different, which might puzzle Ho. However, there is no influence on the results of Jing et al. (2013).

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