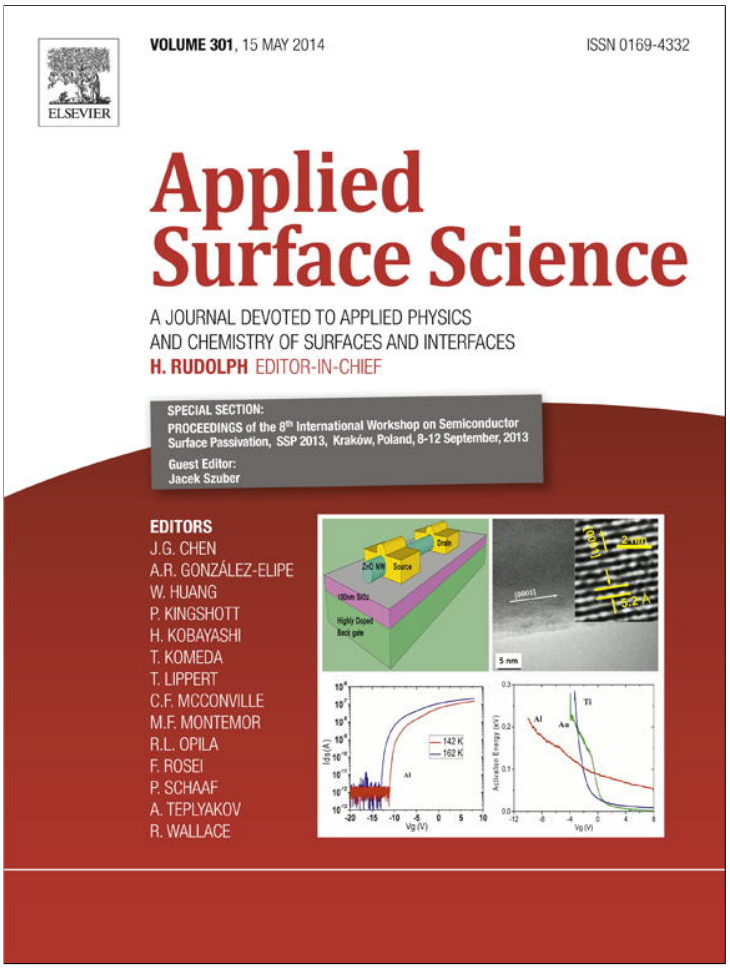

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Letter to the Editor

Comments on "Adsorption characteristics and behaviors of graphene oxide for Zn(II) removal from aqueous solution"

Recently, Wang et al. published the paper entitled "Adsorption characteristics and behaviors of graphene oxide for Zn(II) removal from aqueous solution" [1]. In Section 3.5: Effect of contact time on Zn(II) adsorption and adsorptive kinetics, authors presented "pseudo-second-order model" by the equation

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

and referred to a self-citation published in 2013 [2]. This pseudo-second-order model is not correct. In fact, the pseudo-second-order kinetic expression for the adsorption systems of divalent metal ions using sphagnum moss peat has been presented [3], and this expression was also published in *Environmental Technology* in 1996 [4]. Unfortunately, a correction to the kinetic model was rejected to be published by *Environmental Technology*. In 1997, a corrected pseudo-second-order kinetic expression was reported in a conference [5] and journals in following years [6,7] because a mistake was included in the previous publications. The pseudo-second-order kinetic model has a non-linear 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 $\frac{q_t}{t} = kq_e^2 - kq_e q_t$ [8]. The model was also used in numbers of adsorption systems in subsequent years [9]. A review of second-order models for adsorption systems gave more details [10]. However the same mistake in the model was duplicated by researchers [2]. In order to stop the proliferation of the mistake a comment has been made [11]. This type of error could be avoided if authors have had paid more attentions to details about the model from the original paper [12]. 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. In my view, Wang 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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