



Adsorption of N-methylated diaminotriphenilmethane dye (malachite green) on natural rarasaponin modified kaolin

Anita Carolina Suwandi, Nani Indraswati, Suryadi Ismadji*

Department of Chemical Engineering, Widya Mandala Surabaya Catholic University, Kalijudan 37, Surabaya 60114, Indonesia

Tel. +62 31 3891264; Fax: +62 31 3891267; email: suryadi@mail.wima.ac.id

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ABSTRACT

The modification of kaolin using natural surfactant rarasaponin was studied. The effectiveness of kaolin and rarasaponin-kaolin was evaluated for removal of malachite green (MG) from the aqueous solution. The temperature dependent forms of Langmuir, Freundlich, Sips and Toth model were employed to correlate the adsorption experimental data. Even all isotherms used in this study, visually can correlate the experimental data well, however Sips model gave consistent and reasonable values of the fitted parameters. Kinetic data were analyzed using pseudo-first- and pseudo-second-order, and pseudo-first-order gave reasonable values of fitted parameters. Thermodynamic properties of adsorption of MG onto kaolin and rarasaponin-kaolin were also obtained in this study.

Keywords: Adsorption; Modification; Kaolin; Rarasaponin-kaolin

*Corresponding author.