



Evaluation of grinding Salix leaves (gsl) as new sorbent material

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ABSTRACT

Methylene blue (MB) in aqueous solutions was subjected to color removal by the adsorption technique onto grinding Salix leaf (GSL) as agricultural material. Results obtained indicate that the removal efficiency of MB at 30°C reaches 99% and that the adsorption process is highly pH-dependent. The results fit Langmuir model adsorption of MB on GSL, verify the assumption that the adsorbate molecules could be adsorbed in one layer thick on the surface of the adsorbent. A comparison of kinetic at different conditions showed that the pseudo-second-order kinetic model correlates the experimental data well. van't Hoff equation was used to evaluate the thermodynamic parameters (ΔH , ΔS , and ΔG), which indicate that all adsorption processes are exothermic, and this is agreement with the stability of adsorption capacity with temperature, chemically in nature, and spontaneous.

Keywords: Adsorption; Isotherms; Kinetic models; Salix leaves; Thermodynamic parameters

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