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Removal of Methylene blue from aqueous solution by *Delonix regia* (Gulmohar) tree bark

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Abstract : Removal of Methylene blue (MB) from aqueous solution under different conditions was investigated using *Delonix regia* (Gulmohar) tree bark (DRTB) as adsorbent. Batch mode experiments were conducted to study the effects of pH, contact time, adsorbent dose and initial concentration on the adsorption of Methylene blue. Maximum adsorption was found at pH 7. Freundlich and Langmuir adsorption isotherms were also applied and they showed good fits to the experimental data. The pseudo first- and second-order kinetic models were also applied to the experimental data. The data agreed very well with the pseudo second-order kinetic model. Intraparticle diffusion model revealed that the process was complex and followed both surface adsorption and particle diffusion.

Key-words : Adsorption, Methylene blue, *Delonix regia*, low-cost adsorbent, adsorption kinetics.

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