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# Adsorption of cationic dyes on cotton stalk based activated carbon from aqueous solutions: Equilibrium and kinetic studies

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**Abstract:**Activated carbon prepared from cotton stalk waste by chemical activation using phosphoric acid as the activating agent was used as adsorbent for the removal of Methylene blue and Rhodamine B from aqueous solutions. By batch adsorption method, the effects of various parameters such as solution pH, contact time, initial dye concentration and adsorbent dosage have been investigated. Equilibrium adsorption data were modeled using the Langmuir and Freundlich adsorption isotherms and Pseudo-first-order, Pseudo-second-order and intraparticle diffusion models were used to analyse the kinetic data. The kinetic data was found to be best represented by the pseudo-second-order kinetic model.
**Keywords:**Activated carbon, Cotton stalk, Adsorption, Methylene blue, Rhodamine B.

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