

Removal of Rhodamine-B by Adsorption on Walnut Shell Charcoal

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Abstract — Dyes are among the priority water pollutants. In this study we report the removal of Rhodamine-B from its aqueous solutions by adsorption on walnut shell charcoal using batch technique. The effects of various experimental parameters on adsorption such as contact time, temperature, initial pH, initial dye concentration, sorbent dosage and ionic strength were examined and the optimal experimental conditions were evaluated. At initial pH of 9, the dye studied could be removed effectively in a period of 5 hours. The adsorption data were fitted to Freundlich and Langmuir adsorption isotherms for the calculation of various adsorption parameters. The adsorption results indicated that the dye, Rhodamine-B can be effectively removed from its aqueous solutions by using walnut shell charcoal as an adsorbent.

Keywords : *Langmuir and Freundlich isotherms, equilibrium time, sorbent dosage, ionic strength.*