



Removal of Methylene blue from aqueous solution by *Anthacephalous cadamba* based activated carbon: Process Optimization using Response Surface Methodology (RSM)

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Abstract: The unlimited discharge of dyes into the natural water bodies is a global environmental concern due to their toxic effects. Increasing environmental awareness is forcing waste creators to consider new options such as adsorption for the disposal of colored wastewaters. Due to prohibitive costs of commercially available activated carbon, low-cost adsorbents with high adsorption capacities have gained increasing attention. The present investigation deals with the adsorption of methylene blue on *Anthacephalous cadamba* leaf powder as activated carbon. The parameters pH, adsorbent dose and initial dye concentration considered in this investigation play an important role in the adsorption studies of MB dye removal. The optimum values of pH, adsorbent dose and initial dye concentration were found to be 10, 1g/L and 30 mg/L, for removal of MB dye, respectively. The experimental values were in good agreement with predicted values.

Keywords: Activated carbon, Adsorption, Methylene blue, Response surface methodology, *Anthacephalous Cadamba* leaf.

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