

Comparative Study on Potentiality of Polypyrrole composite as Adsorbent for the removal of Acidic and Basic dyes from Aqueous solutions

Arumugam Geetha^{1*} and Nachimuthu Palanisamy¹

¹Centre for Environmental Research, Department of Chemistry, Kongu Engineering College Perundurai, Erode, TamilNadu- 638 060, India

Abstract : The potentiality of polypyrrole coated sawdust (PPy/SD) derived from the fruit of the gardening plant material of Cordia Sebestena to remove acidic dye and basic dye [Acidic Dye namely Acid Orange 7 (AO7) and Basic dye namely Basic Red 29 (BR29)] from aqueous solutions via adsorption was investigated. Adsorption experiments are carried out using batch system in order to do equilibrium adsorption isotherm, kinetics and thermodynamic studies. It is found that chemical modification of plant waste like sawdust coated with polypyrrole called polypyrrole composite is an efficient adsorbent for the removal of AO7 and BR29 from aqueous solutions. Finally, the performance of PPy/SD was compared with both the dyes. The experimental results indicated that adsorbent is effective and economically viable for the removal of both acidic (AO7) and basic (BR29) dyes and is most suitable for the removal of Acid Orange 7 from aqueous solutions than Basic Red 29.

Keywords : Adsorption, Cordia Sebestena, Polypyrrole Coated Sawdust, Acid Orange 7, Basic Red 29.

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