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The Impact of Ionic Strength on the Adsorption Behavior of Anionic and Cationic Dyes on Low Cost Biosorbent

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Abstract : The objective of this study was to looking for alternative materials (low cost) for the adsorption of textile dyes and optimizes the type which gives optimum adsorption and provides an explanation of the mechanism involved in the adsorption process. Adsorption of Orange II and Methylene blue on H2SO4 traited cone of Pinus brutia, was carried out at different initial concentrations of the dye (20, 50 and 100 mg / L) and at tow initial pH, pH 1 and 10 respectively. The models of Langmuir, Freundlich and Sips were used in this study to analyze the obtained results of the adsorption isotherm. PCB-0M had high adsorption capacities namely 32.8967 mg/g and 128.1651 mg/g, respectively for orange II and methylene blue and further indicated that the removal of dyes increased with increase in the ionic strength of solution, this was attributed to aggregation of dyes in solution. The potential of H2SO4 traited cone of Pinus brutia, an easily available and low cost material, to be used as an alternative biosorbent material for the removal of a dyes, Orange II and Methylene Bleu, from aqueous solutions was therefore confirmed.

Keywords : Methylene blue, orange II, cones of pinus brutia, adsorption
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