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Adsorption of Dye Eosin from an Aqueous Solution on two Different Samples of Activated Carbon by Static Batch Method

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ABSTRACT

Removal of dye Eosin on two different samples of activated carbon by static batch method was studied. Experimental data on optical density of blank solutions of different concentrations ranging from 10 to 100 mg/L and optical density of solutions after adsorption on activated carbon samples were taken and analyzed. Calibration curves were plotted and the amount of dye adsorbed was calculated. The data was fitted to Langmuir and Freundlich isotherms for two different carbon samples and different concentration values. Constants were calculated from the slope and intercept values of the isotherms. Coefficient of correlation R² and Standard Deviation SD were also noted. The data fitted well to the isotherms. It was observed that adsorption decreased with increase in ppm concentrations. Carbon sample C2 showed higher potential to adsorb the dye Eosin as compared to carbon sample C1. Further Carbon sample C2 showed better adsorption in acidic pH as compared to in alkaline pH. From the analysis of the data it is shown that C2 sample has a good capacity to remove the textile dye from the residue water.

KEYWORDS

Adsorption; Eosin; Activated Carbon; Textile Industry Effluent

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