

عنوان مقاله:

Adsorption isotherm studies of acid dye removal by exfoliated graphite

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خلاصه مقاله:

The unaesthetic look of dyes and their toxicological effects have drawn considerable attention toward the contamination caused by textile effluents. Public opinion is extremely sensitive to this kind of environmental impact and often becomes more intolerant with the type of colored wastewaters than with much more dangerous ones that do not seem as harmful as they are colorless. Adsorption has been shown to be the most promising option for the removal of nondegradable dyes from aqueous streams. Exfoliated graphite (EG) is a well known material usually produced from various intercalation compounds submitted to a thermal shock. The development and the operation of dye adsorption processes require knowledge of the adsorption isotherms. In this work the use of exfoliated graphite has been investigated as an adsorbent for removal of C.I Acid Blue 92. The effect of initial dye concentration on removal efficiency was studied and adsorption capacity of exfoliated graphite was determined through a series of batch tests. The adsorption equilibrium data were analysed and the parameters of various isotherm models such as Langmuir, Freundlich and Radke-Prausnitz were estimated using experimental data. The results have shown that adsorption behaviour of the dye could be described reasonably by Radke-Prausnitz model as well as that of Langmuir.

کلمات کلیدی:

.Isotherm Study, Dye Adsorption, Exfoliated Graphite, Pollutant

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