

عنوان مقاله:

Performance of Activated Carbon from Cassava Peels for the Treatment of Effluent Wastewater

محل انتشار:

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خلاصه مقاله:

Activated carbon from cassava peels was prepared and characterized for various physiochemical properties such as moisture content, volatile matter and surface area. The effects of various parameters such as adsorbent dose, contact time, adsorption temperature and pH were studied to optimize the conditions for maximum adsorption. The mechanism of the rate of adsorption was studied using the pseudo – first order Lagergren equation, Svante Arrhenius equation and the Gibbs free energy equation was used for the determination of adsorption thermodynamics. The adsorption isotherms were described by means of Freundlich and Langmuir isotherm equations and also Temkin isotherm equation which considered the effects of indirect adsorbent/ adsorbate interactions on adsorption process. The fitness of the data was measured using the value of the coefficient of correlation (R^2). The thermodynamic constant (K), standard free energy (G°), enthalpy (H°) and entropy (S°) were calculated for predicting the nature of adsorption. Results obtained show the effectiveness of activated carbon from cassava peels as suitable adsorbent for the treatment of effluent wastewater

کلمات کلیدی:

Adsorption Wastewater Activated carbons Cassava peels Commercial activated carbon

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