عنوان مقاله:

Equilibrium isotherm and kinetic studies for the uptake of copper ion onto almond shell

محل انتشار:

دوازدهمین کنگره ملی مهندسی شیمی ایران (سال: 1387)

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خلاصه مقاله:

The effective removal of heavy metals from aqueous wastes is among the most important issues for many industries. In this work, removal of copper (II) from aqueous solutions was studied using almond shell which is a very cheap and readily available material. The capacity of the adsorption for the removal of copper ions was investigated under different conditions such as initial concentration (10-70 mg/L) and temperature (299- 328K) at pH 5.6 with 1 g of the adsorbent. Adsorption kinetic data were modeled using the pseudo-first order, pseudo-second order and intraparticle diffusion models. The results indicate that the second-order model best describes adsorption kinetic data. The experimental equilibrium adsorption data are tested for the Langmuir, Freundlich and D-R equations. Results indicate the following order to fit the isotherms: Langmuir > D-R > Freundlich in case of copper ions.

کلمات کلیدی:

Adsorption, heavy metals, copper, almond shell, adsorption kinetic modeling, isotherm

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