عنوان مقاله:

Adsorption of Lead from aqueous solutions using natural diatomite

محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

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خلاصه مقاله:

In this work, natural diatomite clay of Iran has been used as an adsorbent for removing of lead from aqueous solution in a batch mode. The effect of several variables like pH, contact time, initial concentration and temperature on lead sorption onto the diatomite is investigated. Kinetic data were analyzed using pseudofirst-order, pseudo-second-order and double-exponential models. The equilibrium experimental data were tested with Freundlich, Langmuir and Dubbin-Radushkevich. The maximum adsorption capacity of lead ion for natural diatomite was found to be 25.01 mg/g at T=45 ºC. Thermodynamic parameters showed that thelead sorption onto the diatomite is endothermic and spontaneous for adsorption of lead. Because of low-costand local availability of natural diatomite; this clay has suitable potential for removal of lead ions in practical process

کلمات کلیدی:

Diatomite, Lead, Adsorption, Kinetic, Isotherm, Thermodynamic