

عنوان مقاله:

KINETICS AND THERMODYNAMIC STUDIES OF COPPER ION BY USING GELEH SAR SHOR

محل انتشار:

اولین همایش ملی تکنولوژی های نوین در شیمی و پتروشیمی (سال: 1393)

تعداد صفحات اصل مقاله: 3

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خلاصه مقاله:

Geleh sar shor (head-washing clay) was employed, for the first time, as a new natural adsorbent for the sorption of Cu(II) ions from aqueous solutions. The effects of varying parameters such as initial concentration of metal ions, volume of the standard solution, eluent and buffer solution characteristics, amount of adsorbent, contact time, interference by other ions and temperature on the adsorption process, also, the role of desorption and centrifugation time on the desorption step were explored. Adsorption equilibrium was established in 20 min and the maximum adsorption of Cu(II) ions on the head-washing clay was observed to occur at pH 7. The adsorption data correlated with Freundlich, Langmuir, Dubinin–Radushkevich (D–R), and Temkin isotherms. The equilibrium nature of Cu(II) adsorption has been described by the Langmuir isotherm. The kinetic data were described with pseudo-first-order, pseudo-second-order and double-exponential models. The adsorption process follows a pseudo-second-order reaction scheme. Calculation of ΔG_0 , ΔH_0 and ΔS_0 showed that the nature of Cu(II) ions sorption onto this clay was exothermic and was favoured at lower temperature

کلمات کلیدی:

Geleh Sar Shor, Head-washing clay, Thermodynamic, kinetic, adsorption, copper

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