

عنوان مقاله:

Adsorption of Strontium (II) on new ion-imprinted solid-phase support: determination, isotherms, thermodynamic and kinetic studies

محل انتشار:

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خلاصه مقاله:

An ion imprinted polymer (IIP) based on aniline-formaldehyde was synthesized and then modified with extra aniline as cross-linker in the presence and absence of Sr (II) as the template to produce ion imprinted poly(aniline-formaldehyde) (IIPAF) and non imprinted poly(aniline-formaldehyde) (NIPAF). The sorbent was characterized by Fourier Transform Infrared Spectroscopy and was used for solid phase extraction. The kinetics of the sorption was analyzed using the pseudo-first order and pseudo-second order kinetic models. The equilibrium adsorption data of Sr (II) on synthetic polymer were analyzed by Langmuir, Freundlich, Temkin and Redlich-Peterson models. The thermodynamic parameters were determined using the equilibrium constant values obtained at different temperatures. The results showed the negative values of ΔG° and positive ΔH° which indicated that the Sr (II) adsorption process is spontaneous and endothermic. The method was applied for strontium ions determination from Tap water samples.

کلمات کلیدی:

Adsorption, ion imprinted polymers aniline, formaldehyde, Strontium (II), Kinetic

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