

عنوان مقاله:

Remove iron and manganese from groundwater using nano bio-sorbents by fixed bed continuous method

محل انتشار:

دومین همایش ملی توسعه در علوم و صنایع شیمیایی (سال: 1400)

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خلاصه مقاله:

The presence of iron and manganese ions and of a rocky bed leads to groundwater pollution, the latter producing excessive metal taste and stains. In this study, rice straw char, tea leaves char and nanosilica were used to adsorb Mn and Fe ions from water sources. First, the effect of such parameters as contact time, Percentage of composition and particle size of bio-sorbents in a fixed-bed adsorption column were investigated. As for the study of Mn and Fe ions adsorption showed that with decreasing particle size, the amount of adsorption increased significantly. Also, the combination of nano bio-sorbents with nanosilica improved the adsorption. As the percentage of nano-silica increased, the absorption of iron and manganese from the aqueous solution increased too. According to Breakthrough curves, under best conditions (seventh mode), nano bio-sorbents can remove ۹۸.۰۵% and ۹۷.۹۲% of iron and manganese ions, respectively. Maximum equilibrium capacity of the adsorption column (mg/g) was ۲۵۶.۵۶ for iron, and ۲۴۴.۷۹ for .manganese

کلمات کلیدی:

.Manganese, Iron, Rice straw char, Tea leaves char, nanosilica, fixed bed column

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