

عنوان مقاله:

Removal of As(V), Cr(VI) and Pb(II) from aqueous solution using surfactant-modified Sabzevar nanozeolite

محل انتشار:

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خلاصه مقاله:

The pollution of water environments is a challenging issue especially in developing countries. Contamination of drinking water with heavy metals has been reported in many parts of the world. Arsenic, chromium and lead are dangerous heavy metals and also common contaminants of drinking water. In this study, the capacity and performance of the surfactant-modified Sabzevar natural nanozeolite (SMSNZ) on the removal of heavy metals from an aqueous solution was investigated. Initially, the appropriate concentration of hexadecyltrimethylammonium bromide HDTMA-Br solution for modification was investigated; it was found that it must be higher than the critical concentration micelle (CMC). Then, the removal of As (V), Cr (VI), and Pb(II) from an aqueous solution was studied using SMSNZ. The results indicated that the removal efficiency was very high in different initial concentrations of heavy metals. The Linear, Langmuir and Freundlich isotherm models were used to investigate the adsorption equilibrium of the surfactant-modified natural zeolite for heavy metals adsorption. The results showed that the Linear isotherm is a better fit for the three studied heavy metals.

کلمات کلیدی:

Adsorption, Cationic surfactant, Heavy metal, Modification, Natural nanozeolite

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