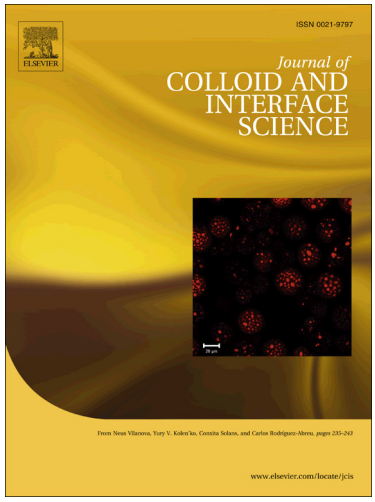

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Abstract

A new adsorbent, Fe_3O_4 sulfonated magnetic nanoparticle (Fe_3O_4-SO_3H MNP), was developed for heavy metal ions removal from water, which could be effectively separated from the solution owing to the superparamagnetic property. The nanoparticles can be used to remove heavy metal ions due to the additional active site, "sulfo-group", introduced by the AMPS branches grafted onto the iron oxide. The as-synthesized materials were characterized by SEM, TEM, FT-IR and BET. The FTIR, XPS and Zeta potential were used to describe the adsorption mechanism. The