

عنوان مقاله:

Fabrication of Novel organic-inorganic hybrid membrane for adsorption of heavy metals from aqueous solution

محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Novel organic-inorganic hybrid membranes were prepared through sol-gel reaction of poly(vinyl alcohol) (PVA) with tetraethyl orthosilicate (TEOS) and 3-mercaptopropyltrimethoxysilane (TMPTMS). The membranes were characterized by FT-IR, SEM, EDAX and BET analysis. FTIR spectra of PVA/TEOS/TMPTMS indicate that the TMPTMS have been introduced successfully into the PVA/TEOS structure. The change in surface of the PVA/TEOS/TMPTMS in SEM image indicates that metal ions successfully interact with functional groups of the membrane. The results of lead, cadmium, nickel and uranium ions adsorption onto the PVA/TEOS/TMPTMS hybrid membranes with different weight percents of TEOS and TMPTMS show that the optimum weight percent of TEOS and TMPTMS are 20% and 15% , respectively

کلمات کلیدی:

PVA , TEOS , TMPTMS hybrid membrane, sol-gel, functional groups, heavy metals, adsorption

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