عنوان مقاله:

Cation Absorbent Based on Poly(Acrylic Acid) Gels: Effect of Synthetic Conditions

محل انتشار:

دهمین سمینار بین المللی علوم و تکنولوژی پلیمر (سال: 1391)

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خلاصه مقاله:

The well-established toxicity of metals in solution at sufficiently high concentration affects human, animal and vegetation [1]. The pollution of water and soil with heavymetal cations has increased and spreading dramatically throughout the world in the last years as a consequence of theexpansion of industrial activities; a lot of metals is considered to be toxic and dangerous heavy metals [1]. Therefore, the necessity to remove the toxic cations from water in anefficient way is great. Among various treatment methods, adsorption technique has been widely studied in recent yearsdue to its cost-effectiveness, simplicity of design and operation. Recently, considerable interest has been generated in the development of polymeric adsorbents as a tool forremoving cations from polluted systems [2, 3]. In this work, the feasibility of poly(acrylic acid) gels for removing aluminium from aqueous aluminium solution was studied. In this relate, the synthetic conditions for preparation of gels, i.e., concentrations of monomer, crosslinker andinitiator to achieve maximum absorbency of aluminium (Al3+) were optimized through the Taguchi experimental designmethod. As well as, the combination of silver nanoparticles with prepared gel was considered as a promising route to design novel antibacterial aluminium adsorbent for water treatment applications

کلمات کلیدی: