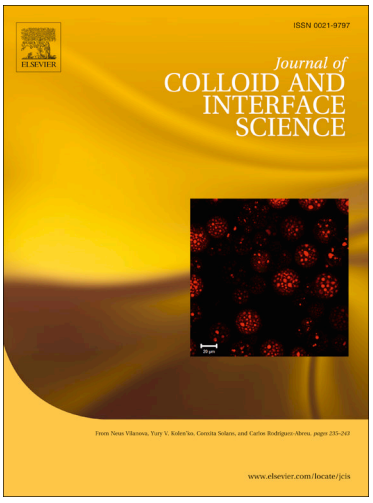

Regular Article

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Preparation of Polyamidoamine Dendrimers Functionalized Magnetic Graphene Oxide for the Adsorption of Hg(II) in Aqueous Solution

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Abstract

In this study, using graphene oxide supported Fe_3O_4 nanoparticles as carriers, ethylenediamine and methyl acrylate as functional monomer, different generations of polyamidoamine dendrimers functionalized magnetic graphene oxide (MGO-PAMAM), up to generation 4.0, were successfully synthesized via step by step growth chemical grafting approach and magnetic separation technology. In the process of synthesizing dendrimers, the generation of dendrimers was increased with the increasing of reaction cycles. In other words, the dendrimers generation is determined from the number of branch iterations. The obtained MGO-PAMAM were characterized by transmission electron microscopy (TEM), X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FT-IR), elemental analysis, X-ray photoelectron spectroscopy (XPS), thermogravimetric analysis (TGA), vibrating sample magnetometer (VSM), nitrogen adsorption/desorption isotherm and Zeta potential analysis. The adsorption properties of the synthesized products for Hg(II) in aqueous solution were investigated by batch experiments. The results showed that the MGO-PAMAM with

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