

Preparation of Poly(Acrylic Acid) Functionalized Magnetic Graphene Oxide Composite and Its Application for Pb(II) Removal

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Abstract : Poly(acrylic acid) (PAA) functionalized magnetic graphene oxide (GO) composite was synthesized through a two-step process. Magnetic Fe₃O₄/GO was first prepared by a facile hydrothermal method. A radiation-induced grafting technique was used to graft PAA to Fe₃O₄/GO to obtain the Fe₃O₄/GO-g-PAA subsequently. The characteristics results of FTIR, Raman, XRD, SEM, TEM, and VSM showed that Fe₃O₄/GO-g-PAA was successfully prepared. The Fe₃O₄/GO-g-PAA composites were used as sorbents for the removal of Pb(II) ions, and the maximum adsorption capacity for Pb(II) was 176.92 mg/g.

Keywords : Fe₃O₄, graphene oxide, magnetic, Pb(II) removal, radiation-induced

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