World Academy of Science, Engineering and Technology
International Journal of Chemical and Materials Engineering
Vol:15, No:08, 2021

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 Fe_3O_4/GO was first prepared by a facile hydrothermal method. A radiation-induced grafting technique was used to graft PAA to Fe_3O_4/GO to obtain the Fe_3O_4/GO-g-PAA subsequently. The characteristics results of FTIR, Raman, XRD, SEM, TEM, and VSM showed that Fe_3O_4/GO-g-PAA was successfully prepared. The Fe_3O_4/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 : Fe_3O_4, graphene oxide, magnetic, Pb(II) removal, radiation-induced
Conference Title : ICCTMS 2021 : International Conference on Chemical Technologies for Materials Science
Conference Location : Tokyo, Japan
Conference Dates : August 16-17, 2021