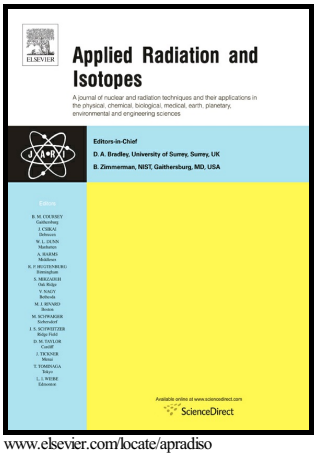

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A Styrofoam-nano manganese oxide based composite: Preparation and application for the treatment of wastewater

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Abstract

Nano composites were synthesized by the reaction of waste polystyrene (PS) and $KMnO_4$. The structure of the composite was controlled by the solvent/non-solvent system and the concentration of $KMnO_4$. The FTIR spectra indicated the functionalization of PS and the attachment of NMO with the polymer chains. The maximum adsorption capacities (q_{max}) were 10,000 and 5,000 Bq g^{-1}, for U and Th respectively. Different but controllable sorption/desorption behaviours were noted between Th and U, which could be promising in the separation of Th and U from their mixture.

Keywords

Radionuclide; Polystyrene; Wastewater; Nano manganese oxide, Sorption.