Article Abstract

Title:	Preparation, characterization and As(V) adsorption behaviour of CNT-ferrihydrite composites
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Abstract:	A Carbon nano tube (CNT)–Ferrihydrite nanocomposite was synthesized through precipitation in ethyl alcohol media. Its detailed characterization was carried out using XRD, SEM, FTIR and EDAX. The adsorption characteristics of the composite for As(V) removal were carried out as function of pH, adsorbent dose, As(V) concentration and contact time. Although pure CNT did not show any significant adsorption, CNT-Ferrihydrite proved to be a good adsorbent for arsenic. With increase in pH, the As(V) adsorption on the composite first decreased up to pH 5.0, thereafter it remained nearly constant. The adsorption followed the Langmuir isotherm model and from the data its monolayer adsorption capacity was estimated to be 44.1 mg/g. The adsorption data were best described by the pseudo-second order kinetic model.
Keywords:	Carbon nanotubes, ferrihydrite, arsenic, adsorption, isotherms