[Environment Protection Engineering](http://www.scopus.com/source/sourceInfo.uri?sourceId=20926&origin=recordpage" \o "Go to the information page for this source), vol.38 (3), 2012, pages 119-131

**Immobilization of Cu 2+ using stabilized nano zero valent iron particles in contaminated aqueous solutions**

Abstract

Batch kinetic experiments were conducted to investigate the feasibility of using carboxylmethyl cellulose (CMC)-stabilized nano zero valent iron (nZVI) particles for immobilization of Cu 2+ in water. The effects of nZVI concentration, pH, and initial concentration of Cu 2+ have been studied. Cu 2+immobilization increased from 59.10% to 98.10% as the nZVI concentration increased from 0.2 to 2.0 g/1. The adsorption kinetics of Cu 2+ ions was fitted to a pseudo-second order model and both Langmuir and Freundlich isotherms fit experimental data. SEM-EDX indicates that slightly porous and fragile particles were formed due to the corrosion on the nZVI surface.

## Keywords

Adsorption kinetics; Batch kinetics; Initial concentration; Langmuir and Freundlich isotherms; Pseudo-second order model; SEM-EDX; Zero valent iron (nZVI); Zero-valent iron