Feasibility study of novel sorbent for chromium sequestration and enhanced immobilization

Sangita Pal*, Pranav Dhanpalb, J.L. Goswamic, P.K. Tewaria

aDesalination Division (DD), BARC Trombay, Mumbai 400085, India
Email: sangpal@barc.gov.in
bIIT, Saharanpur, Roorkee, India
cBack End Technology Development Division (BETDD), BARC, Trombay, Mumbai 400085, India

Received 20 June 2011; Accepted 13 November 2011

ABSTRACT

The present solid phase sorption studied for the treatment of water containing mainly chromium by “In-house” synthesized specific amphoteric chelator have been evaluated w.r.t. basic parameters like concentration, time, and elution etc. High uptake values of the metal ions proves its selectivity, whereas negligible elution or high immobilization factor (0.97) confirm further decontamination of run-off water during natural calamities. This polymeric ligand exchanger displayed minimum and maximum level sorption of 41.2% and 99.6% at the feed concentration of 50 and 500 ppm respectively.

Keywords: Decontamination; Ligand; Exchanger; Chromium; Immobilization; Elution

*Corresponding author.