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Authors: Tarisai Velempini, Kriveshini Pillay, Xavier Y. Mbianda, Omotayo A. Arotiba



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Epichlorohydrin crosslinked carboxymethyl cellulose-ethylenediamine imprinted polymer for the selective uptake of Cr(VI)

Tarisai Velempini¹, Kriveshini Pillay*¹, Xavier Y.Mbianda¹, Omotayo A. Arotiba^{1, 2}

¹*Department of Applied Chemistry, University of Johannesburg, Doornfontein, 2028, Johannesburg, South Africa*

²*Centre for Nanomaterials Science Research, University of Johannesburg, South Africa*

*Corresponding author: K. Pillay; Tel: +27 11 559 6128; fax: +27 11 559 6154 e-mail: kriveshinip@uj.ac.za

Highlights

- Insoluble carboxymethyl cellulose crosslinked with epichlorohydrin is prepared.
- Ethylenediamine serves dual purpose of ligand-second crosslinker.
- Favourable adsorption capacities of Cr(VI) at 25 °C.
- Adsorption at low pH, desorption at high pH.

Abstract

A new ion-imprinted polymer (IIP) was synthesized from sodium carboxymethyl cellulose and used for the adsorption of hexavalent chromium from aqueous solution. Epichlorohydrin was used to stabilize the polymer before ethylenediamine (EDA) ligand and Cr(VI) were introduced. The obtained IIP was characterized with FTIR, XPS, TGA, ¹³C NMR, SEM, EDX,

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