Turkish Journal of Chemistry

Turkish Journal

of

Chemistry

A Novel Degradable Adsorbent of the Hyperbranched Aliphatic Polyester Grafted Cellulose for Heavy Metal Ions

Peng LIU
Institute of Polymer Science and Engineering, College of Chemistry and Chemical Engineering, Lanzhou University, Lanzhou 730000, P. R. CHINA
e-mail: pliu@lzu.edu.cn

Keywords
Authors

chem@tubitak.gov.tr

Scientific Journals Home Page

Abstract: A novel degradable adsorbent for the removal of heavy metal ions from waste water, a hyperbranched aliphatic polyester grafted cellulose (HAPE-Cell), was successfully prepared by the simple one-pot method for the first time. The hyperbranched aliphatic polyester was grafted from the surface hydroxyl groups of natural cotton fibers via the solution polycondensation of the AB_2 monomer, 2, 2-bis(hydroxymethyl)propionic acid (bis-MPA), with the catalysis of p-toluenesulfonic acid (p-TSA). The HAPE-Cell was characterized by elemental analysis, Fourier transform infrared (FT-IR) spectroscopy, X-ray diffraction (XRD), and scanning electron microscopy (SEM). The adsorption properties of the HAPE-Cell towards the heavy metal ions (Cu(II), Hg(II), Zn(II), and Cd(II)) were also preliminarily investigated.

Key Words: Hyperbranched aliphatic polyester, graft, cotton fiber, adsorbent, heavy metal ions

---

Turk. J. Chem., **31**, (2007), 457-462.
Full text: pdf
Other articles published in the same issue: Turk. J. Chem.,vol.31,iss.4.