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Abstract
A chelating resin, crosslinked poly(glycidyl methacrylate-cysteine) (PCYS), was synthesized by anchoring sodium cysteine to crosslinked poly(glycidyl methacrylate) for the recovery of Ag+、Cu2+ and Cd2+ from aqueous solutions. The resin was characterized by Fourier transform infrared spectroscopy, scanning electron microscope. In non-competitive conditions, the adsorptions tended toward equilibrium at 60 min and the equilibrium adsorption capacities were 1.88、1.09 and 0.89 mmol/g PCYS for Ag+、Cu2+ and Cd2+, respectively. The adsorption isotherms of the metal ions by PCYS followed the Freundlich isotherm. Except pH ? 3.0, the adsorption capacity of each metal ion decreased with lowering of solution pH. When the pH of Cu2+/Cd2+ mixture was 2 , the competitive adsorption tests confirmed this resin had good adsorption selectivity for Cu2+ with the coexistence of Cd2+. When the pH of Ag+/Cu2+ and Ag+/Cd2+ mixture was 1.5 and 2.5, the competitive adsorption tests confirmed this resin had good adsorption selectivity for Ag+ with the coexistence of Cu2+ or Cd2+.
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