

# THE REMOVAL OF Cr(VI) FROM THE AQUEOUS SOLUTION BY GRANULAR FERRIC HYDROXIDE (GFH)

BAI YUAN, BRONISŁAW BARTKIEWICZ

**Abstract:** In this work, sorption of chromium on granular ferric hydroxide (GFH) has been investigated using batch and column techniques. The adsorption behavior of Cr on GFH, depending on pH, contact time and sorbent amount were studied. The equilibrium adsorption capacity of GFH for Cr was measured and extrapolated using Freundlich isotherms. Metal ions bounded to the GFH could be recovered by alkaline solution, and the GFH can be recycled. The sorption capacity of GFH was 25.0 mg/g. The ion exchange of chromium on GFH follows pseudo-first-order kinetics. The intraparticle diffusion of chromium on GFH presents the limiting rate. The results indicated practical value of this method for industry and also provide strong evidence to support the proposed thesis about the adsorption mechanism.