Enhancing the Metal Removal Capacity of Activated Carbon with Benzotriazoles and Organic Co-Ligands

Friday, May 18, 2012, 11:00 a.m.
Environmental and Water Resources Engineering (EWRE) Building, Room 104
North Campus, The University of Michigan

Abstract: Benzotriazole derivatives form very strong bonds with transition metals, and are the most widely used type of industrial corrosion inhibitor. Because of their unique chemical architecture — an aromatic ring conjugated to a triazole ring — this class of compounds has a strong amphipathic behavior that enables them to bind metal ions, while at the same time, maintain a strong surface sorption character. The amphipathic behavior and metal-binding capacity of benzotriazoles were leveraged to remove selected transition metal ions from model industrial wastewaters and acid mine drainage. The presentation will address the removal efficiency and kinetics of this novel approach for recovering heavy metals by benzotriazoles and organic co-ligands.