

Adsorption behavior of bisphenol A onto iron oxide particles in water treatment

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Bisphenol-A (BPA), which is known as one of the most popular endocrine disrupting chemical is a great concern to human health, due to hormone-dependent cancers and disease. In this study, we investigated various laboratory synthesized iron oxide particles(IOPs), such as ferrihydrite, goethite, magnetite and hematite as adsorbents for the removal of BPA from drinking water. Adsorption kinetics and isotherms of IOPs for BPA were evaluated to compare their sorption characteristics.

All IOPs treated were reached equilibrium very rapidly, within 60 min. The Langmuir isotherm model was found to be more suitable fit to the results than Freundlich. The maximum adsorption capacity of Langmuir isotherm (q_m) for four IOPs was in the order of ferrihydrite > goethite > hematite > magnetite. The result coincided with the magnitude of their surface area.