Guide for Authors

Submit Your Paper

Most Cited Water Research Articles

The most cited articles published since 2011, extracted from Scopus.

Magnetic nanoparticles: Essential factors for sustainable environmental applications

Volume 47, Issue 8, May 2013, Pages 2613-2632
Samuel C N Tang | Irene M C Lo

In recent years, there has been an increasing use of engineered magnetic nanoparticles for remediation and water treatments, leading to elevated public concerns. To this end, it is necessary to enhance the understanding of how these magnetic nanoparticles react with contaminants and interact with the surrounding environment during applications. This review aims to provide a holistic overview of current knowledge of magnetic nanoparticles in environmental applications, emphasizing studies of zero-valent iron (nZVI), magnetite (Fe_3O_4) and maghemite (γ-Fe_2O_3) nanoparticles. Contaminant removal mechanisms by magnetic nanoparticles are presented, along with factors affecting the ability of contaminant desorption. Factors influencing the recovery of magnetic nanoparticles are outlined, describing the challenges of magnetic particle collection. The aggregation of magnetic nanoparticles is described, and methods for enhancing stability are summarized.

Source: http://www.journals.elsevier.com/water-research/most-cited-articles/