

Removal of phenol and arsenic from wastewater by magnetite/mesocellular carbon foam as a Fenton catalyst

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In this study, we report the highly efficient removal of aqueous phenol and arsenic by the heterogeneous Fenton system, using magnetite ( $\text{Fe}_3\text{O}_4$ ) nanoparticles-loaded mesocellular carbonaceous foam (MSU-F-C) as both a catalyst and an adsorbent.  $\text{Fe}_3\text{O}_4$ /MSU-F-C showed superior activity compared to commercial iron oxides without significantly accelerating the decomposition of  $\text{H}_2\text{O}_2$ , which provides a great advantage for the utilization of  $\text{H}_2\text{O}_2$  in the Fenton system, and it was easily separated with a permanent magnet and re-dispersed into solution due to its favorable magnetic properties.