



IRON OXIDES FROM ELECTROFILTER ASH FOR WATER TREATMENT (ARSENIC REMOVAL)

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Abstract

Arsenic (As)-contaminated drinking water is a major problem around the world. The removal efficiency depends strongly on the size of Fe₃O₄ sorbents. Fe₃O₄ prepared in laboratory is more efficient in the removal of As and is also more easily recovered from column of magnetic separator than the commercial materials. This would be beneficial in a water treatment system because the As-contaminated Fe₃O₄ could be flushed from the column permitting reuse of the separator system. The dispersed Fe₃O₄ nanocrystals can be removed from the solution through interactions with a magnetic column. The 20 nm commercially made nanocrystals were permanently retained in the column and could not be recovered, while the laboratory prepared nanocrystals were able to be recovered when the magnetic field was turned off.

Key words: absorption spectrometer, arsenic removal, iron oxides

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