

Abstract Submitted
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Magnetic, structural and adsorption properties for methylene blue of PAA/MnFe₂O₄ nanocomposite WEI WANG, ZUI DING, School of Science, Beijing University of Chemical Technology, Beijing 100029, China, J. PING LIU, Department of Physics, University of Texas at Arlington, Arlington, TX 76019, USA — PAA/MnFe₂O₄ nanocomposite was fabricated by a hydrothermal procedure and ultrasonic wave-assisted method. The morphology of the synthesized MnFe₂O₄ ferrite nanocrystals is the exclusive octahedral structure. The saturation magnetization M_s of as-synthesized nanoparticles reached 74.6emu/g. FTIR spectrum confirms the coating of PAA on the surface of MnFe₂O₄ ferrite nanoparticles. Here, the PAA coating does not lead to a deterioration in magnetic performance. Moreover, the PAA/MnFe₂O₄ nanocomposites were applied to remove Methylene Blue (MB) from wastewater. Compared with the nanoparticles without coating, the PAA coating significantly enhanced the adsorption capacity of MB onto MnFe₂O₄ magnetic nanoparticles, where a rapid and efficient removal of MB was observed. The research suggests that as-synthesized PAA/ MnFe₂O₄ nanocomposites have promising and potential applications in water treatment for removal of dyes.

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