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# Preparation and Characterization of Chitosan Coated Magnetic Nanoparticles

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## Abstract

Magnetic nano-particles (MNPs) were prepared by using the co-precipitation method. In this method an aqueous solutions of ferric chloride hexahydrate ( $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ ) and ferrous chloride tetrahydrate ( $\text{FeCl}_2 \cdot 4\text{H}_2\text{O}$ ) were added with a base under an inert atmosphere, followed by the modification of the surface of (MNPs) with chitosan. The characterization of the prepared magnetic nanoparticles was performed by X-ray diffraction (XRD), SEM (scanning electron microscopy) and Fourier transform infrared spectroscopy (FTIR) analyses. The prepared MNPs have many potential applications in biomedicine including targeted drug delivery, magnetic resonance imaging (MRI), and magnetic hyperthermia etc.

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