

## Article Abstract

Title:	Synthesis of $\gamma$ -Fe <sub>2</sub> O <sub>3</sub> nanoparticles with crystallographic and magnetic texture
Author(s):	Samar Layek <sup>1,*</sup> , Anjana Pandey <sup>2</sup> , Ashutosh Pandey <sup>3</sup> and H.C. Verma <sup>1,*</sup>
Address(es):	<sup>1</sup> Department of Physics, Indian Institute of Technology, Kanpur 208016, INDIA. <sup>2</sup> Nanotechnology and Molecular Biology Laboratory, Center for Biotechnology, University of Allahabad, INDIA <sup>3</sup> Department of Chemistry, MNNIT Allahabad, Allahabad, INDIA *Corresponding Author: e-mail:samarlayek@gmail.com, hcverma@iitk.ac.in
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Abstract:	Maghemite ( $\gamma$ -Fe <sub>2</sub> O <sub>3</sub> ) nanoparticles are synthesized by chemical co-precipitation technique in AOT-microemulsion with a view to have possible application for biotagging. The investigations by means of X-ray diffraction, isothermal magnetization M (H) and <sup>57</sup> Fe Mössbauer Spectroscopy show that the particles are nonspherical, mostly of rod shape. The inter-particle interaction is so large that even a powder sample of thickness about 40 mg/cm <sup>2</sup> shows preferential orientation of magnetic moments in the plane of the sample. The saturation magnetization is much lower than the expected values for maghemite.
Keywords:	Maghemite, Magnetic nanoparticles, Magnetic Ordering, Mössbauer spectroscopy.