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Fabrication and characterization of chromium-iron oxide ($\text{Cr}_2\text{Fe}_6\text{O}_{12}$) nanoparticles by thermal treatment method

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In this research, a novel chromium-iron oxide ($\text{Cr}_2\text{Fe}_6\text{O}_{12}$) nanoparticle with rhombohedral symmetry was prepared by a simple thermal treatment method. Heat treatment was conducted using an electric cylinder furnace in an air atmosphere at temperatures between 773 and 923 K, where the produced chromium-iron oxide nanoparticles had different crystallite sizes ranging from 9 to 20 nm. The products were well characterized by X-ray diffraction (XRD), transmission electron microscopy (TEM), field emission scanning electron microscope (FESEM), X-ray analysis (EDXA), and Fourier transform infrared spectroscopy (FT-IR). The samples demonstrated a magnetic behavior which was confirmed by using vibrating sample magnetometer (VSM).

Biography

Mahmoud Goodarz Naseri has completed his PhD from Putra University in Malaysia and Postdoctoral studies from Putra University (for 2 years). He is the deputy of faculty of science in Malayer University in Iran. He has published more than 24 papers in reputed journals and has been serving as a reputed reviewer.

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