



Structural, Electrical and Magnetic Properties of Ni_{0.5}Zn_{0.5}Fe₂O₄ Nanoscale Particles by Co-Precipitation Method

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ABSTRACT

Magnetic Nano particles of Ni_{0.5}Zn_{0.5}Fe₂O₄ have been synthesized using Co-precipitation technique. During the experimental investigation, Ni Zn ferrites exhibited interesting structural, electrical and magnetic properties. Formation of spinal phase was identified using X-Ray diffraction (XRD) technique. The ferrite compound prepared in the laboratory exhibited cubic spinal symmetry. The Lattice constant of the compound was determined to be 8.324 Å. The morphology and size of the crystallite was found by Transmission Electron Microscopy (TEM). The magnetic properties were studied using Vibration Sample Magnetometer (VSM) and the saturation magnetization (Ms), remnant magnetization (Mr) and the Coercivity force (Hc) values were evaluated. Electrical properties of the samples were quantified using standard two-probe method.

Keywords: Nano particles, Co-precipitation, XRD, Hysteresis curves.
