

20. Effect of Cr Ions On Physical Properties of Cu-Zn Ferrite nano-particles

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ABSTRACT

The aim of the present work is to study the effect of Cr^{3+} ions on the structural and magnetic properties of $\text{Cu}_{0.7}\text{Zn}_{0.3}\text{Cr}_x\text{Fe}_2\text{O}_4$ (WITH $x=0.0,0.1,0.2,0.3,\text{AND}0.4$) prepared by chemical coprecipitation method. The properties studied by means of X – ray diffraction and magnetization measurements. The crystal size calculated using Scherers formula varies between 28nm and 36nm. The variation of lattice parameter a with x does not obey Vegards law. The behavior of hopping length with x is attributed to the variation of lattice constants with the concentration x . The saturation magnetization of each sample was measured using a high field hysteresis loop technique. Magnetization decreases as concentration x increases.

Keywords: Ferrites, X-ray Diffraction, Saturation Magnetization