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Structural and magnetic properties of $Mg_{0.8-x}M_{0.2}Ni_xFe_2O_4$ (M = Zn, Mn) ferrite powders

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Abstract: Structural and magnetic properties of $Mg_{0.8-x}M_{0.2}Ni_xFe_2O_4$ (M = Zn, Mn; x = 0, 0.2, 0.4, 0.6, 0.8) ferrite powders, prepared by solid state reaction method, were studied. The variations of lattice parameter, X-ray density, crystallite size, saturation magnetization, effective number of Bohr magneton, and coercivity with Ni content were investigated. The role of grain size was found to be crucial in the behavior of coercivity.

Key Words: Ferrites, lattice parameter, crystallite size, saturation magnetization

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