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Structural and magnetic studies of ($Ni_{0.5}$ $M_{0.5}$ Fe_2O_4) where M = Zn, Cu

N. N. Sarkar, K. G. Rewatkar, N. S. Meshram & V. M. Nanoti

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ABSTRACT

($Ni_{0.5}$ $M_{0.5}$ Fe_2O_4) where M = Zn and Cu doped ferrite nano-particles are synthesized by Sol-Gel Auto combustion method. The nano-sized Zn, Cu and Ni doped ferrite characterized by XRD. The lattice constant was found to be a = 8.38 A^0 and 8.41 A^0. It is understood that the lattice parameters increase for Cu as compared to Zn contents. The magnetic properties were determined by using VSM, the saturation magnetization was found to be 34 emu/g and 17 emu/g, respectively, and the remnant magnetization was found to be highly depended upon the cation distribution and crystallinity of the investigated ferrite.

KEYWORDS:

Spinel ferrite | XRD | saturation magnetization | coercivity | cation distribution

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