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A STUDY ON DIELECTRIC AND MAGNETIC PROPERTIES OF LANTHANUM SUBSTITUTED COBALT FERRITE

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ABSTRACT

Lanthanum substituted cobalt ferrites were prepared by hydrothermal method. The phase formation of the compound was confirmed by powder XRD which was matched with the JCPDS data. The electrical properties were determined by dielectric measurements. The dielectric constant versus temperature showed an anomaly peak at higher temperature which is due to the presence of oxygen defects in the sample. The impedance plots and Nyquist plot also revealed the presence of electrical relaxations in the prepared samples. Electrode polarization effects were evident from the conductivity measurements. Decreasing crystallite size due to the La³⁺ doping has lead to the increase of disordered spins which results in the reduction of saturation magnetization.

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