

International Conference on
Materials Physics and Materials Science

November 22-23, 2018 | Paris, France

Effect of sintering on formation and structure of nanocrystalline $\text{La}_{0.1}\text{Co}_{0.9}\text{MnO}_3$ perovskite

Mohamed Hegazy
Zagazig University, Egypt

Nanocrystalline $\text{La}_{0.1}\text{Co}_{0.9}\text{MnO}_3$ perovskite been synthesized employing co-precipitation technique. X-Ray Diffraction (XRD) and Fourier-transform Infrared spectroscopy (FTIR) analysis were used to explore the structural features and calculate lattice parameter values for all the compositions (as prepared, sintered at 200, 400, 600, 800 and 1000 OC for 3h). Formation of nanoparticles was revealed by transmission electron microscopy (TEM). The elemental analysis as obtained

by EDAX is in close agreement with the expected composition from the stoichiometry of reactant solutions used. Increasing sintering temperature enhances the perovskite structure to 800 OC. The perovskite structure is distorted above this temperature. Crystallite size was determined by three method Scherrer, Williamson Hall, and Warren Averbach to be in ranging from 33 to 86nm.

e: mghozza2@yahoo.com