STRUCTURE, MORPHOLOGY AND MAGNETIC PROPERTIES OF COBALT NANOFE RRITES SYNTHESIZED THROUGH COMBUSTION METHOD

Prabhakaran Thandapani\textsuperscript{1,2}, Mangalaraja Ramalinga Viswanathan\textsuperscript{1}, and Hemalatha Jawaharlal\textsuperscript{2}

\textsuperscript{1}Advanced ceramics and nanotechnology laboratory, Department of Materials engineering, Faculty of engineering, University of Concepcion, Concepcion, Chile - 4070409, \textsuperscript{2}Advanced Materials Lab, Department of Physics, National Institute of Technology, Tiruchirappalli, India - 620015

Highly crystalline cobalt nanoferrites were synthesized through combustion route using DL-alanine as fuel. The nanoferrite particles were calcined at two different temperatures of 500 and 800°C for 2 hours to investigate phase purity, functional and magnetic properties. The synthesized cobalt nanoferrites confirmed the formation of single-phase spinel structure in both as-prepared and calcined conditions. High saturation magnetization of 71.1 emu/g and high coercivity value of 1400 Oe were obtained for as-prepared and calcined cobalt nanoferrites at 500°C for 2 hours, respectively. A systematic investigation on cobalt nanoferrites was carried out by a detailed study on the structural, morphological and magnetic properties.

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Presenting author’s email: prabhakarant85@gmail.com