

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Synthesis, Structural and Magnetic Characterization of Rare Earth Doped SrMnO₃ Compounds M.A. JUAREZ-ROSETE, E. CHAVIRA, J.I. BETANCOURT, Instituto de Investigaciones en Materiales, UNAM, Mexico DF 04510, E.E. MARINERO, Hitachi San Jose Research Center, 3403 Yerba Buena Road, San Jose, CA 95135, L. BUCIO, X. BOKHIMI, Instituto de Fisica, UNAM, Mexico DF 04510 — We report on our ongoing work on the synthesis, characterization and magnetic studies of Rare Earth (RE) containing RE-SrMnO₃ compounds. The aim of the study is to determine how different RE elements influence the magnetic properties of said materials. We have so far investigated the incorporation of Dy and Yb into the SrMnO₃ unit cell. To this effect we have employed solid state reaction synthesis methods to fabricate said compounds. The reaction products evolution were monitored as a function of time by XRD, TGA and SEM. Measurements of lattice parameters and Rietveld refinement of the XRD spectra, indicate that Dy and Yb are incorporated substitutionally in SrMnO₃. Temperature dependent magnetic measurements, on the other hand, reveal a common transition temperature around 41 K for both Dy and Yb doped SrMnO₃. We are in the process of synthesizing additional materials containing additional RE elements to investigate how the electronic properties of said RE may influence the magnetic properties of these compounds.

E. E. Marinero
Hitachi San Jose Research Center,
3403 Yerba Buena Road, San Jose, CA 95135

Date submitted: 23 Nov 2011

Electronic form version 1.4