

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Photoinduced effects in ferromagnetic state of manganites VERA SMOLYANINOVA, GRACE YONG, RAJESWARI KOLAGANI, Department of Physics, Astronomy and Geosciences, Towson University, Towson, MD 21252, AMLAN BISWAS, Department of Physics, University of Florida, Gainesville, Florida 32611, KILHWAN WANG, Department of Physics, Astronomy and Geosciences, Towson University, Towson, MD 21252 — Rear-earth manganese oxides have a rich phase diagram. Transitions between different magnetic, electronic and structural states can be induced by application of external fields. Light-induced destruction of the charge ordering in some compositions of manganites, which results in significant increase of conductivity, is a well known example of such transition. Significant change in conductivity of these materials makes them attractive for photonic and opto-electronic device applications. We report a study of photoinduced properties of manganites in ferromagnetic metallic state. Since light penetration depth in these materials is small, thin films of manganites were used in this study. Photoinduced resistivity changes in these materials will be reported. Photoinduced effects in compositions with different temperatures of metal-insulator transition will be discussed. This work is supported by the NSF grant DMR-0348939.

Vera Smolyaninova
Department of Physics, Astronomy and Geosciences,
Towson University, Towson, MD 21252

Date submitted: 21 Nov 2010

Electronic form version 1.4