Poster Presentation

Epitaxial La$_{0.67}$Ba$_{0.33}$Ti$_{0.02}$Mn$_{0.98}$O$_3$ oxide thin films

Oumezine Marouan$^1$, Aurelian Catalin Galca$^2$

$^1$Laboratoire De Physico-Chimie Des Materiaux, University Of Monastir, TUNISIA, Monastir, Tunisia, $^2$Laboratory of Multifunctional Materials and Structures, National Institute of Materials Physics, Magurele, Romania

E-mail: oumezzine@hotmail.co.uk

Epitaxial La$_{0.67}$Ba$_{0.33}$Ti$_{0.02}$Mn$_{0.98}$O$_3$ (denoted as LBTMO) thin films of approximately 95 nm thickness were deposited by pulsed laser deposition technique onto SrTiO$_3$ (STO) (001) substrates. According to the High Resolution X-Ray Diffraction investigations the films are epilayers with a four-fold symmetry in 001 direction. The results are consistent with the expected slight tetragonal distortion and very small lattice mismatch between LBTMO and STO. The STO substrate induces an in-plane compressive strain of the films which exhibit paramagnetic-to-ferromagnetic phase transitions at a Curie temperature $T_C$ (286K), close to room temperature. The powder Bulk counterpart crystallises in the cubic structure with space group $Pm-3m$.

Keywords: Thin films, High Resolution X-Ray Diffraction, Perovskite