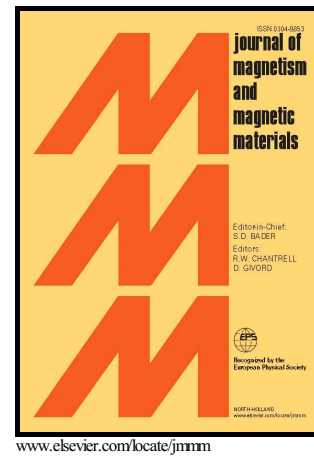


Author's Accepted Manuscript

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PII: S0304-8853(16)31786-3
DOI: <http://dx.doi.org/10.1016/j.jmmm.2016.12.108>
Reference: MAGMA62316

To appear in: *Journal of Magnetism and Magnetic Materials*

Received date: 13 August 2016

Accepted date: 21 December 2016

Cite this article as: R. Eremina, Z. Seidov, I. Ibrahimov, M. Najafzade, M. Aljanov, J. Mamedov, T. Gavrilova, I. Gilmutdinov, V. Chichkov and N. Andreev, Magnetization of manganite thin films on ferroelectric substrates *Journal of Magnetism and Magnetic Materials* <http://dx.doi.org/10.1016/j.jmmm.2016.12.108>

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Magnetization of manganite thin films on ferroelectric substrates

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Abstract

Here we report the magnetic susceptibility measurements of magnetron sputtered orthorhombic manganite RMnO_3 ($\text{R}=\text{Yb}, \text{Gd}$) thin films deposited on dielectric LaAlO_3 and ferroelectric SrTiO_3 , LiNbO_3 substrates. We observed that all of investigated o- RMnO_3 films show a splitting in the temperature dependence of ZFC and FC magnetization curves. We found that the substrate can impact on the splitting temperature ZFC-FC curves and absolute value of the magnetization of thin films.

Keywords: thin film, multiferroic, ferroelectric, magnetization

PACS: 75.70.-i

1. Introduction

The physical properties of multiferroics can be changed in thin films, where magnetic, electric properties and lattice parameters of substrates and also topology of thin films became important. Previously X. Li et al. reported exotic multiferroic behaviors, including high- T_C ferroelectric state, a large spontaneous polarization and relatively strong ferromagnetism emerging in orthorhombic $\text{GdMnO}_3/\text{SrTiO}_3$ (001) thin films of thickness 10-110 nm with self-assembled nano-scale twin-like domains [1, 2]. Moreover, both the onset

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