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Analysis of magnetic anisotropy on BaTiO₃/La₂/3Sr₁/3MnO₃ bilayers JOHN EDWARD ORDONEZ, MARIA E GOMEZ, PEDRO PRIETO, Univ del Valle Cali, GRUPO DE PELICULAS DELGADAS TEAM — We have deposited BTO/LSMO bilayers as a possible route to design systems with artificial magnetoelectric coupling. We maintain a fixed ferroelectric layer thickness (tBTO= 100 nm) and ferromagnetic layer (tLSMO = 25 nm). We analyze the influence of direction substrate on electrical and magnetic properties of manganite. From XRD we found that the BTO layer for STO(001) growth textured with almost two different distribution of domains (c domains in plane and out-plane) with cBTO=4.108 Å and LSMO layer growth textured with cLSMO=3.855 Å. Interestingly, for STO(110) and STO(111) the BTO layer and LSMO layer the growth is textured with cBTO=4.037 Å and cBTO=4.018 Å while LSMO growth is also textured with cLSMO=3.867 Å and cLSMO=3.858 Å, respectively. Magnetization with temperature curves shows a ferromagnetic transition for all bilayers at room temperature with a magnetization between 280-320 emu/cm³. Measures of anisotropy at 300 K show a change in magnetic anisotropy for bilayer growth on STO(001) from biaxial magnetic ordering (LSMO/STO) to uniaxial magnetic ordering (bilayer), probably due to BTO layer influence on magnetic properties on LSMO layer. This work has been supported by “Colciencias-CENM Research Project CI7917-CC 10510 contract 0002-2013 and CI 7978.

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