

Abstract Submitted  
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**Multiferroic behavior on nanometric  $\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3$  /  $\text{BaTiO}_3$  bilayers** PEDRO PRIETO, Excellence Center for Novel Materials-CENM, Cali, Colombia, JOHN EDWARD ORDÓÑEZ, MARIA ELENA GOMEZ, WILSON LOPERA, Department of Physics, Universidad del Valle, Cali, Colombia — We have deposited bilayers of the FM  $\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3$  and FE  $\text{BaTiO}_3$  as a route to design systems with artificial magnetoelectric coupling on LCMO/BTO/Nb:STO system. We maintain a fixed magnetic layer thickness ( $t_{\text{LCMO}} = 48$  nm) and varying the thickness of the ferroelectric layer ( $t_{\text{BTO}} = 20, 50, 100$  nm). We analyze the influence of the thickness ratio ( $t_{\text{BTO}}/t_{\text{LCMO}}$ ) in electrical and magnetic properties of manganite. From X-ray diffraction analysis we observed that the samples grew textured. Magnetization and transport measurements indicate a possible multiferroic behavior in the bilayer. We found an increase in the Curie and metal-insulator transition temperature in the bilayer in comparison with those for LCMO (48nm)/STO. Hysteresis loops on bilayers show ferromagnetic behavior. This work has been supported by the “El Patrimonio Autónomo Fondo Nacional de Financiamiento para CT&I FJC” Colciencias-CENM Research Projects: No. 1106-48-925531 and CI7917-CC 10510 contract 0002-2013 COLCIENCIAS-UNIVALLE.

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