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 ORDOÑEZ, 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 magneoelectric 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.