

Abstract Submitted
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Interfacial phase separation in $\text{La}_{2/3}(\text{Sr}/\text{Ca})_{1/3}\text{MnO}_3$ thin films with different complex oxide capping layers SERGIO VALENCIA, Helmholtz-Zentrum-Berlin, ZORIÇA KONSTANTINOVIC, ICMAB - CSIC, SCHMITZ DETLEF, Helmholtz-Zentrum-Berlin, LLUIS BALCELLS, BENJAMIN MARTINEZ, ICMAB - CSIC, INSITUT FOR COMPLEX MAGNETIC MATERIALS, MI-1 (BESSY) TEAM, INSTITUTO DE CIENCIA DE MATERIALES DE BARCELONA - CSIC TEAM — Interfacial effects in sputtered manganite thin films with different capping layers (MgO, LAO, STO, NGO and Au) have been investigated. The interfaces have been chemically and magnetically characterized by means of local probes such as X-ray absorption spectroscopy (XAS) and X-ray magnetic circular (XMCD) and linear dichroism (XLD). Total electron yield detection at the Mn L-edge guarantees that the spectroscopic information originates from those regions closer to the film/capping interface. A complex phase separated scenario at the interface arises from the spectroscopic data. XAS shows departure of the Mn valence from bulk like values in case of STO and Au capping (Mn²⁺ presence) and in case of MgO and NGO (Mn⁴⁺ increase). XMCD shows concomitant depressed interface magnetization suggesting coexistence of ferromagnetic and non-magnetic phases. Finally XLD proves the presence of an antiferromagnetic (AFM) and orbital ordered (OO) phase.

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