

Abstract Submitted
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Scanning Tunneling Spectroscopy Study of Proximity Effect in Bilayer Manganite/Cuprate Thin Films¹ I. FRIDMAN, J.Y.T. WEI, University of Toronto, L. GUNAWAN, G.A. BOTTON, McMaster University — Recent work has suggested novel proximity and spin diffusion effects in ferromagnet/superconductor heterostructures composed of transition-metal perovskites. We have performed scanning tunneling spectroscopy (STS) on $\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3/\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ (LCMO/YBCO) bilayer thin films. Films were epitaxially grown on $\langle 001 \rangle$ SrTiO_3 substrates using pulsed laser deposition with either the LCMO or YBCO layer on top. The STS data taken at 4.2 K were analyzed for spectral signatures of a pairing gap on the LCMO layer and spin diffusion in the YBCO layer, and to determine the length scale of the proximity effect and the role played by magnetic domain walls.

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