

**STRUCTURE, TRANSPORT AND MAGNETIC  
CHARACTERIZATION OF  $\text{La}_{0.89}\text{Sr}_{0.11}\text{MnO}_3/\text{YBa}_2\text{Cu}_3\text{O}_7$   
SUPERLATTICES**

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Minikayev<sup>a</sup>, M. Sawicki<sup>a</sup>, B. Dabrowski<sup>b</sup>, C. Kimball<sup>b</sup> and P. Przyslupski<sup>a</sup>**

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We report on structural, transport and magnetic studies of  $\text{La}_{0.89}\text{Sr}_{0.11}\text{MnO}_3/\text{YBa}_2\text{Cu}_3\text{O}_7$  (LSMO/YBCO) superlattices. For this doping level ( $x=0.11$ ) the LSMO system is a ferromagnetic insulator (FMI). Proximity effect between a ferromagnetic insulator and YBCO system is very interesting problem , both for fundamental research and application. A series of LSMO/YBCO superlattices have been fabricated using a high pressure sputtering, with fixed LSMO layer thickness at 8 unit cells (u.c.) and varying YBCO layer thickness from 1 to 8 u.c. *c* – *axis* layer thickness. An onset of superconducting transition is observed beginning from the samples with 2 u.c. YBCO layer thickness. Magnetization hysteresis curves measured close to superconducting transition show interplay between Meissner currents in YBCO layers and magnetic field present in LSMO layers.

←————— 13.4 cm —————→

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9.7 cm