Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Functional interfaces in $La_{2/3}Ca_{1/3}MnO_3$/ $YBa_2Cu_3O_{7-x}$ heterostructures[1] TRA VU THANH, Institute of Physics, National Chiao Tung University, Hsinchu 30010, Taiwan, YING-JIUN CHEN, HONG-JI LIN, National Synchrotron Radiation Research Center, Hsinchu 30010, Taiwan, JIUNN-YUAN LIN, Institute of Physics, National Chiao Tung University, Hsinchu 30010, Taiwan, YING-HAO CHU, Department of Materials Science and Engineering, National Chiao Tung University Hsinchu 30010, Taiwan — Interfaces have emerged as one of the focal points of current condensed matter science. In complex, correlated oxides, heterointerfaces provide a powerful route to create and manipulate the charge, spin, orbital, and lattice degrees of freedom. In this study, epitaxial bilayers of ferromagnetic of $La_{2/3}Ca_{1/3}MnO_3$(LCMO) and superconducting $YBa_2Cu_3O_{7-x}$ (YBCO) with two distinct interfaces have been fabricated to understand the effects of these two distinct interfaces. X-ray absorption near edge spectroscopy (XANES) was applied to characterize the interfaces and also provided direct evidence of the charges transfer at these interfaces. The studies of the macroscopic properties, such as the transport and magnetic properties, established the connection between macroscopic properties and the interface structures. This present study opens new venue to design the functional interfaces.

[1]This work was supported by National Science Council of Taiwan, ROC

Tra Vu Thanh
Institute of Physics, National Chiao Tung University,
Hsinchu 30010, Taiwan

Date submitted: 11 Dec 2012 Electronic form version 1.4