Transparent conducting oxides: A δ -doped superlattice approach

Valentino R. Cooper,¹ Sung Seok A. Seo,^{1,2} Suyoun Lee,^{1,3}

Jun Sung Kim,⁴ Woo Seok Choi,^{1,5} Satoshi Okamoto,¹ and Ho Nyung Lee¹

¹Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, 37831, USA

²Department of Physics and Astronomy, University of Kentucky, Lexington, Kentucky 40506, USA

³Electronic Materials Center, Korea Institute of Science and Technology, Seoul 136-791, Korea

⁴Department of Physics, Pohang University of Science and Technology, Pohang 790-784, Korea

⁵Sungkyunkwan University, Suwon, Gyeonggi-do 440-746, Korea

(Dated: June 17, 2014)



Figure S1: k-resolved density of states for individual d_{xz} , d_{yz} and d_{xy} orbitals for the [L1/S2] superlattice along the Γ -Z direction.



Figure S2: Charge distribution as a function of the relative *c*-axis coordinate for the for the $d_{xz/yz}$ and d_{xy} orbitals for the [L1/S2] (top) and [L1/S6] (bottom) superlattices. Dotted lines indicate the position of the LaO planes and each tick along the x-axis represents one perovskite unit-cell.



Figure S3: 2D Fermi-surface plots in the XY (top) and XZ (bottom) planes for the [L1/S2] (left) and [L1/S6] (right) superlattices.