

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Electron doping of cuprates via interfaces with manganites ELBIO

DAGOTTO, Department of Physics and Astronomy, The University of Tennessee and Materials Science and Technology Division, Oak Ridge National Laboratory, SATOSHI OKAMOTO, Materials Science and Technology Division, Oak Ridge National Laboratory, SEIJI YUNOKI, ADRIANA MOREO, Department of Physics and Astronomy, The University of Tennessee and Materials Science and Technology Division, Oak Ridge National Laboratory, SRIVENKATESWARA KANCHARLA, Materials Science and Technology Division, Oak Ridge National Laboratory, ATSUSHI FUJIMORI, Department of Physics, University of Tokyo — The possible electron doping of some undoped high- T_c cuprates via the transfer of charge from undoped manganites (or other oxides) using heterostructure geometries is discussed theoretically [1]. An analysis of photoemission and diffusion voltage experiments locate the Fermi level of some manganites above the bottom of the upper Hubbard band of some cuprate parent compounds. The addition of electrons to antiferromagnetic Cu oxides may lead to a superconducting state at the interface with minimal quenched disorder. Model calculations support this view. [1] S. Yunoki et al., Phys. Rev. B **76**, 064532 (2007) and references therein.

Satoshi Okamoto
Materials Science and Technology Division, Oak Ridge National Laboratory

Date submitted: 27 Nov 2007

Electronic form version 1.4