Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Raman scattering studies of resistance-changing NiO films with and without IrO_2 buffer layers[1] S. YOON, E. CHO, Division of Nano Sciences and Department of Physics, Ewha Womans University, Seoul, Korea, H. CHEONG, Department of Physics, Sogang University, Seoul, Korea, S. SEO, Samsung Advanced Institute of Technology, Korea, B. SCHULZ, M. RUEBHAUSEN, Institute of Applied Physics, University of Hamburg, Hamburg, Germany — NiO films are known to exhibit resistive memory switching behavior and inserting thin IrO_2 layers between electrodes and the NiO film is claimed to minimize the dispersion of memory switching parameters, thus greatly improving the device properties. We present Raman scattering results of a NiO film, a NiO film with a 20 nm-thick IrO_2 layer, and a NiO film with a 50 nm-thick IrO_2 layer. We discuss the microscopic structural changes in the three different films and their relations to the switching behavior changes. We also discuss the role of IrO_2 buffer layers in the device structures.

[1]S. Yoon and E. Cho are supported by Korea Research Foundation Grant funded by Korea Government (MOEHRD, Basic Research Promotion Fund) (KRF-2006-331-C00099)

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Date submitted: 20 Nov 2006 Electronic form version 1.4