

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Two mechanisms of resistive memories in complex oxide thin films KUI-JUAN JIN, CAN WANG, ZHONGTANG XU, Institute of Physics, CAS — Current-voltage hysteresis and switchable rectifying characteristics have been observed in epitaxial multiferroic BiFeO₃ thin films. [1, 2] It has been clearly demonstrated that ferroelectricity and conductivity coexist in a single phase. The forward direction of the rectifying current can be reversed repeatedly with polarization switching, indicating a switchable diode effect and large ferroelectric resistive switching phenomenon. LaMnO₃ (LMO) films are deposited on SrTiO₃:Nb (0.8 wt%) substrates under various oxygen pressures for obtaining various concentrations of oxygen vacancies in the LMO films. An aberration-corrected annular-bright-field scanning transmission electron microscopy with atomic resolution and sensitivity for light elements is used, which clearly shows that the number of oxygen vacancies increases with the decrease of oxygen pressures during fabrication. Correspondingly, the resistive switching property becomes more pronounced with more oxygen vacancies contained in LMO films. *E-mail: kjjin@iphy.ac.cn

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Date submitted: 17 Oct 2012

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