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Interface engineered resistive switching in $Ag/SrTiO_3/Nd_{0.7}Ca_{0.3}MnO_3/YBa_2Cu_3O_7$ devices ZHONGWEN XING, Nanjing University, GRACE LIN, National Taiwan University — Effects of buffer layer of $SrTiO_3$ (STO) on the room temperature resistive switching devices of $Ag/Nd_{0.7}Ca_{0.3}MnO_3/YBa_2Cu_3O_7$ (Ag/NCMO/YBCO) are investigated for the first time. It is found that the insertion of the STO buffer layer into the interface between Ag and NCMO greatly increases the electric-field-induced-resistance (EPIR) ratio. The device can be switched on-and-off from a higher to lower resistance state with a ratio of 253% (405%) at the pulsed voltage of ± 1.5 volt (± 3.0 volt). The enhancement of EPIR ratio is attributed to the modification of the Ag/NCMO interface and the electric-pulse driven oxygen vacancy.

Zhongwen Xing
Nanjing University

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