SUPPORTING INFORMATION

Copper Nanofilament Formation during Resistance Switching of Electrodeposited Cuprous Oxide

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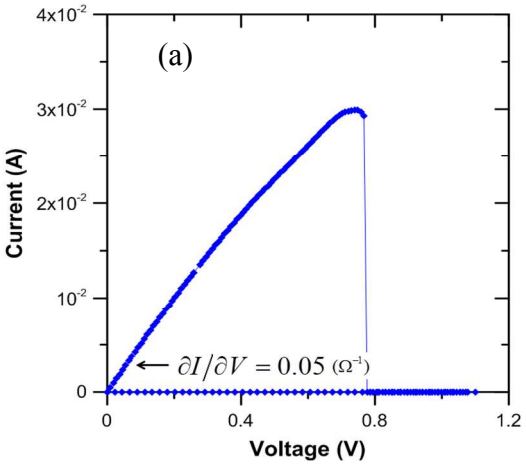
RESISTANCE OF THE COPPER NANOFILAMENT AT ROOM TEMPERATURE.

Figure S1 shows 2 different RESET plots which correspond to Cu filaments formed at different compliance currents of 18 mA and 50 mA. As it is shown, the resistance of each filament at room temperature can be determined by the slope of the curve ($\partial I/\partial V = 1/R$) at the beginning part of RESET plots.



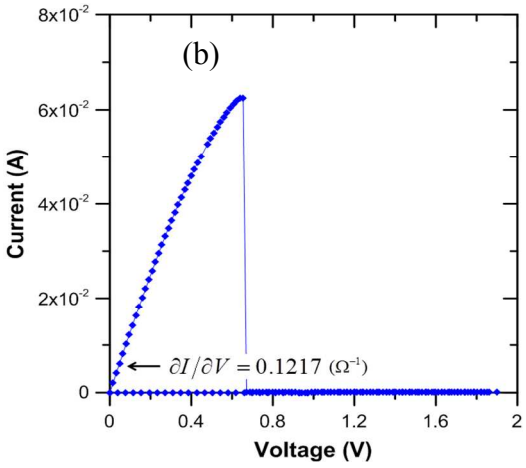


Figure S1. Corresponding RESET plots of Cu filaments with diameter of a) 73.7 nm which was formed at compliance current of 18 mA, and b) 115 nm which was formed at compliance current of 50 mA.

EFFECT OF COMPLIANCE CURRENT ON RESET PARAMETERS.

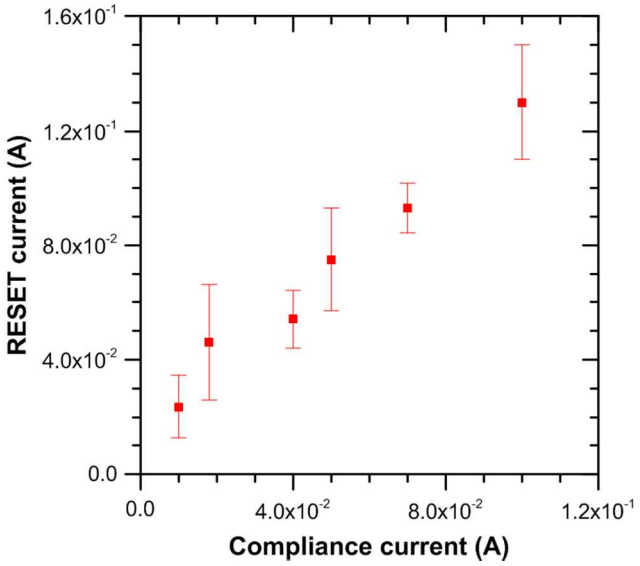


Figure S2. The effect of compliance current on the RESET current in an Au/Cu_2O(5 μm thick)/Au-Pd cell. The solid points show the average RESET current of 5 different contacts with their standard deviations.

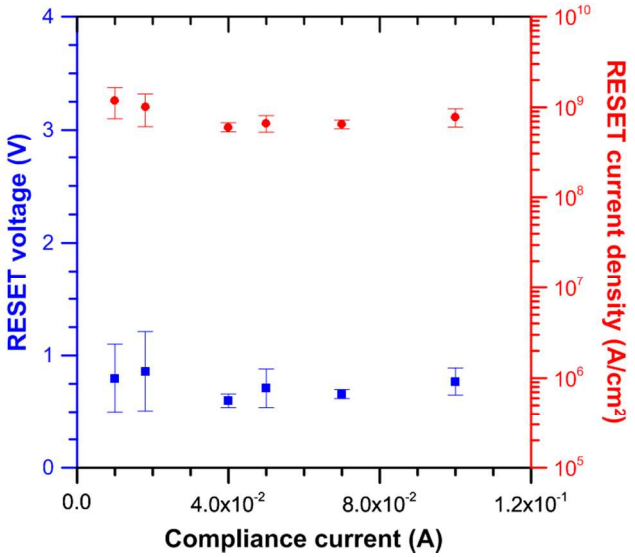


Figure S3. The effect of compliance current on RESET voltage (blue) and current density (red) in Au/Cu_2O(5 μm thick)/Au-Pd cell. The solid points show the average values of 5 different contacts with their standard deviations.