Supporting Information

Highly Uniform Resistive Switching Performances Using Two-dimensional Electron Gas at Thin Film Heterostructure for Conductive Bridge Random Access Memory

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This PDF file includes:

Supplementary Figures S1-S5

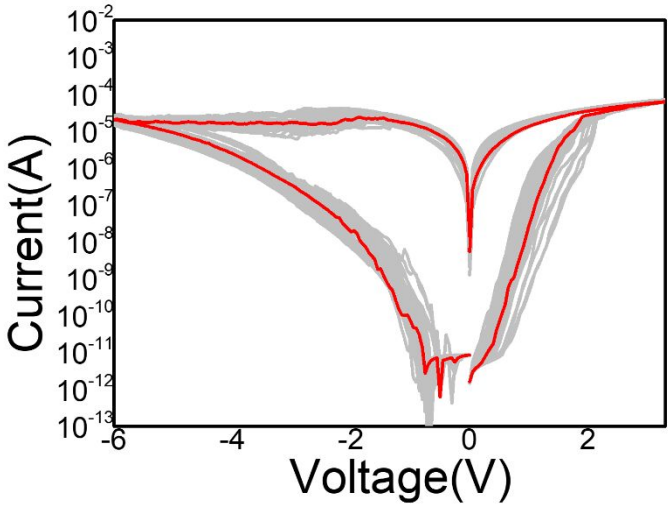

Figure S1. Scalability test with the cell size down to 10 μm x 10 μm (square pattern) which showed wide window in the resistive switching characteristics.

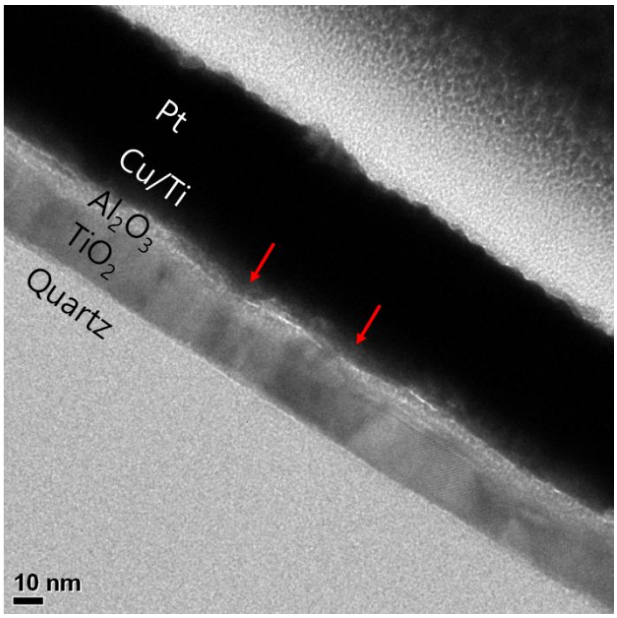

Figure S2. TEM image which shows a wider region of the cell. The red arrows indicate a Cu migration region.

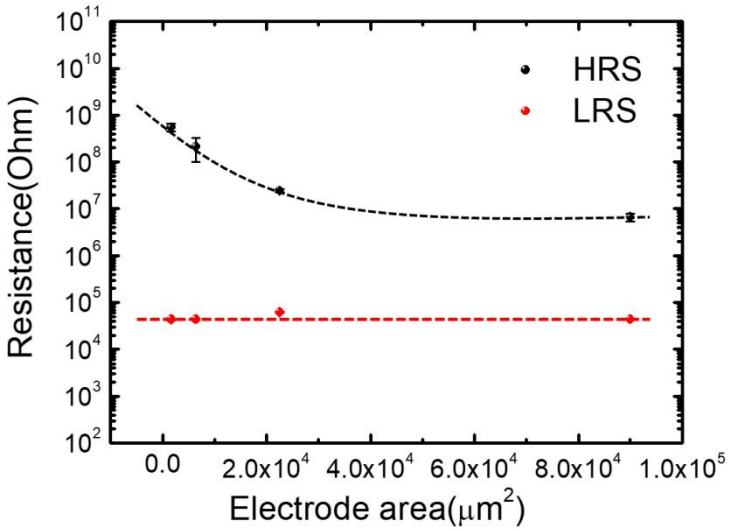

Figure S3. LRS/HRS resistance as a function of electrode area. The conduction of current for SET state is governed by a local filament conduction because the resistance of LRS is constant with decreasing top electrode area, while the resistance of HRS is decreased as the top electrode area decreases for the RESET state.

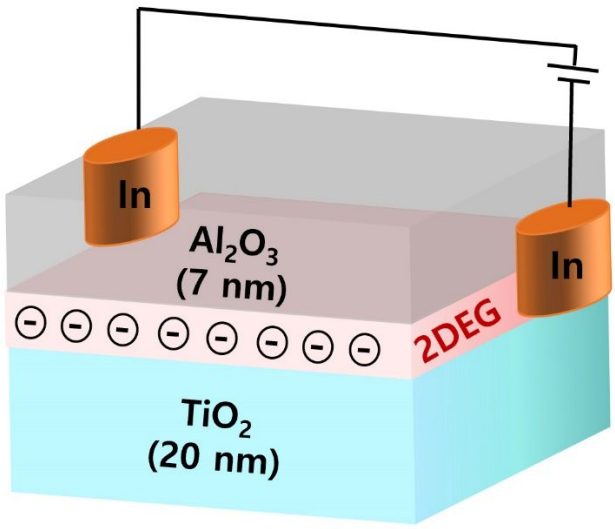

Figure S4. Resistance measurement of 2DEG using two indium contacts.

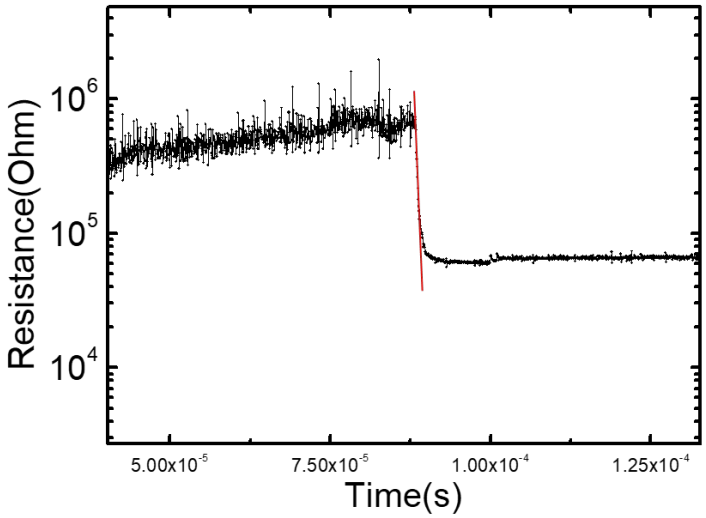

Figure S5. Switching speed was estimated by a current measurement as a function of electrical pulse time, which is approximately in the range of 500~800 ns.