

## Manipulating Resistive States in Oxides based Resistive Memories through Defective Layers Design

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### Supporting materials

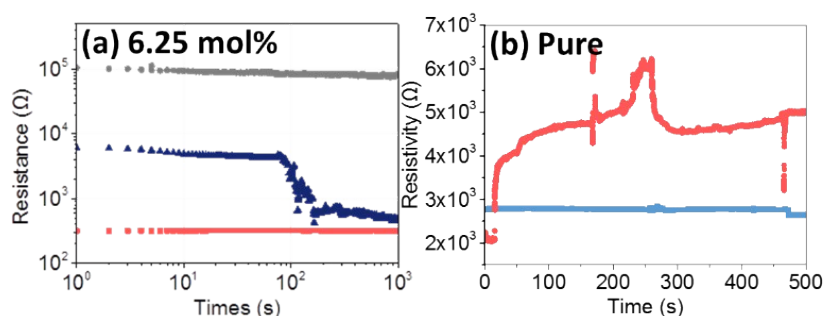


Figure S-1 Retention tests of single layer (a) Mn-doped and (b) pure SnO<sub>2</sub>

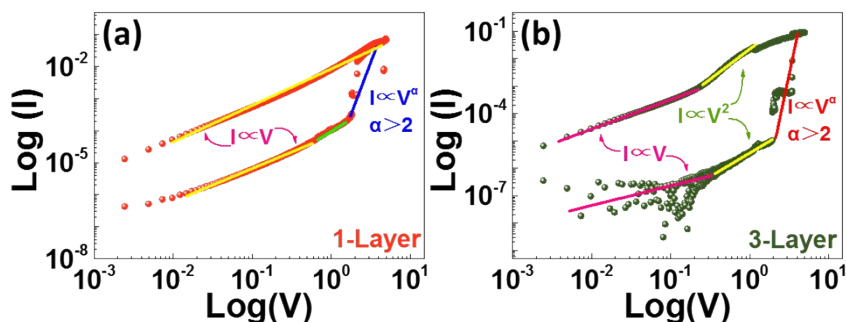


Figure S-2 Voltage-Current curves in log-log scale of (a) 1-Layer and (b) 3-Layer

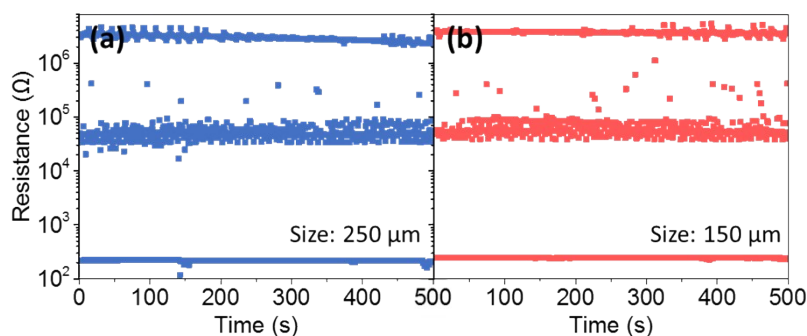


Figure S-3 Cell size dependent retention tests

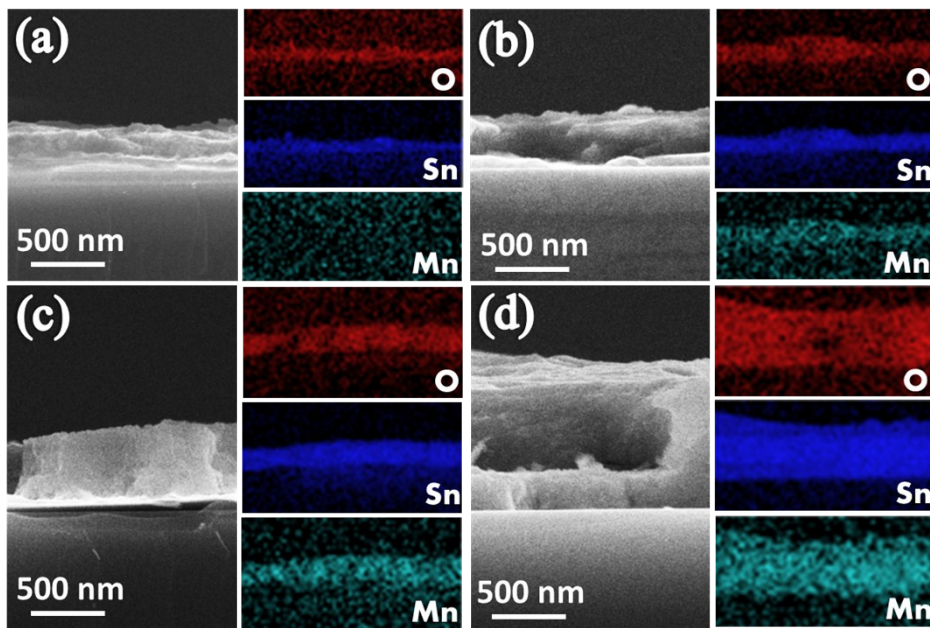
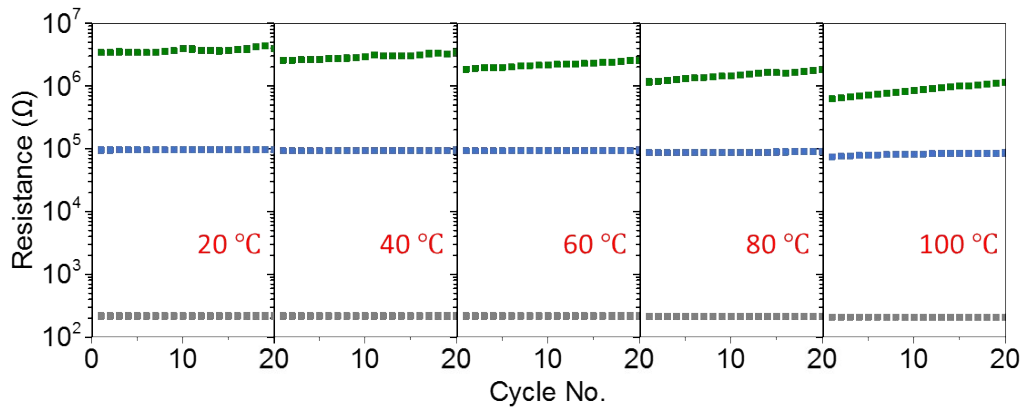


Figure S-4 Temperature dependence of resistance level

Figure S-5 SEM images and EDS images of thin film cross-sections: (a) Pure-Layer; (b) 1-Layer; (c) 3-Layer and (d) 4-Layer