Supplemental information

Volatile tin oxide memristor

for neuromorphic computing
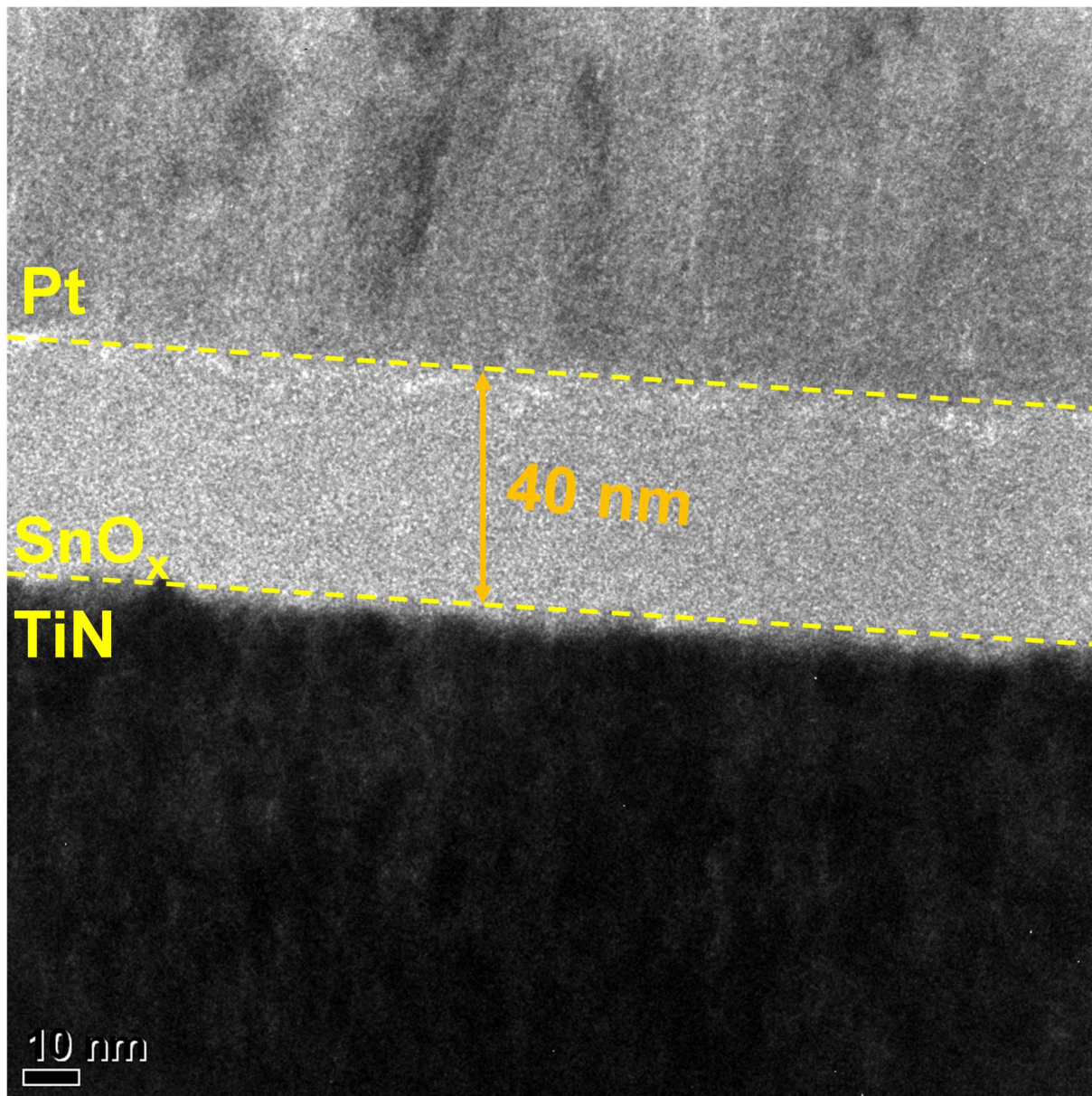
Dongyeol Ju and Sungjun Kim

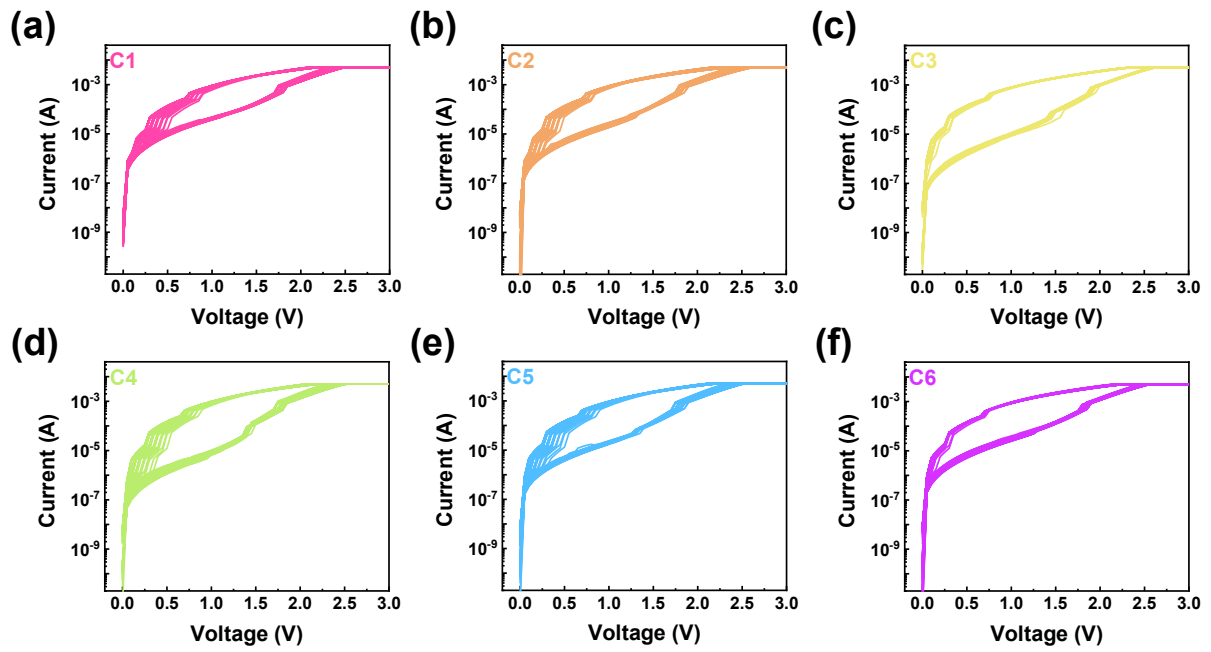Figure S1. Cross-sectional TEM image of the Pt/SnO$_x$/TiN memristor.

Figure S2. (a)-(f) Cell-to-cell I-V curves of 6 randomly selected cells, each of the representing 100 cycles.
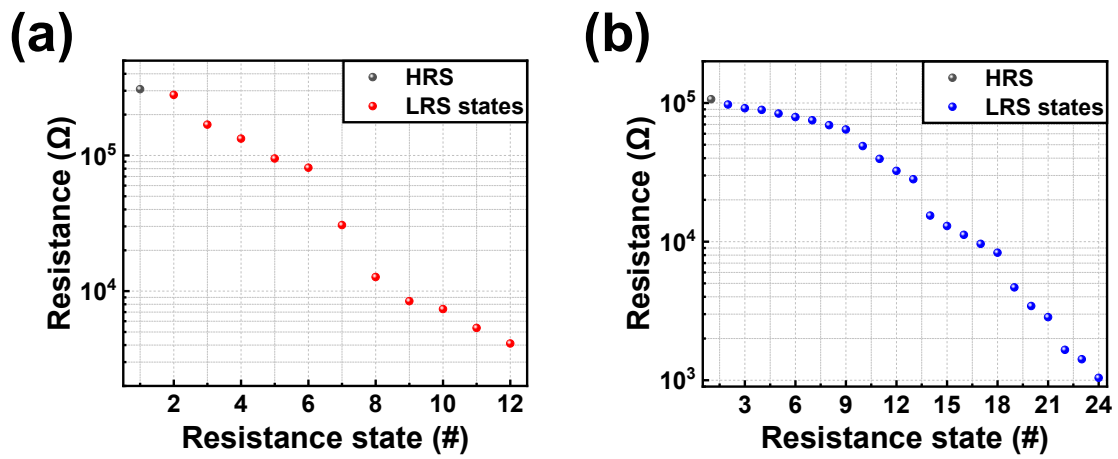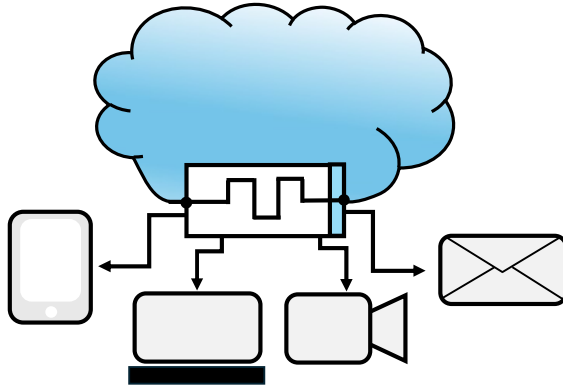

Figure S3. Analyzed HRS and LRS values acquired through varying (a) set bias amplitude, and (b) CC.
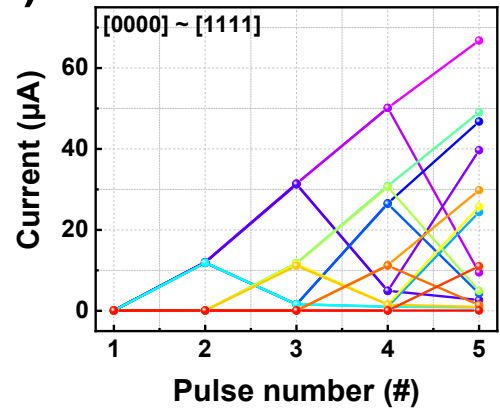
(a)

(b)

Figure S4. (a) Schematic illustration of the edge computing. (b) 16 states of the 4-bit edge computing, acquired from Pt/SnO$_x$/TiN memristor.