Verification of redox-processes as switching and retention failure mechanisms in Nb:SrTiO$_3$/metal devices

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Supplementary Figures

Supplementary Fig. 1: $I$-$V$-characteristic of Pt/Nb:SiO$_3$ junctions and Au/Nb:SiO$_3$ junctions (black and red lines, respectively).
Supplementary Fig. 2: Sr 3d spectra for the filament and the surrounding (red and black line, respectively) for the device switched back to the HRS shown in Fig. 4e and f of the main text.

Supplementary Fig. 3: Retention measurement of the LRS (low current limit → homogeneous switching) under ambient and vacuum conditions (black and red symbols, respectively). The retention times can also be improved through the insertion of a thin Al₂O₃ layer (blue symbols).