

Resistance switching mode transformation in SrRuO₃/Cr-doped SrZrO₃/Pt frameworks via a thermally activated Ti out-diffusion process

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Energy dispersive X-ray spectrometry (EDX) measurements were performed to identify the dark spots in the Pt bottom electrode (see Fig. 4 (a) and Fig. 6 (a)). Figure S1 shows the focused ion beam (FIB) SEM image of the Pt layer for the M sample and EDX spectrum around the red line marked in the SEM image. Ti and O peaks are detected, supporting that the dark regions in the SEM image are Ti-O compounds, TiO_x.

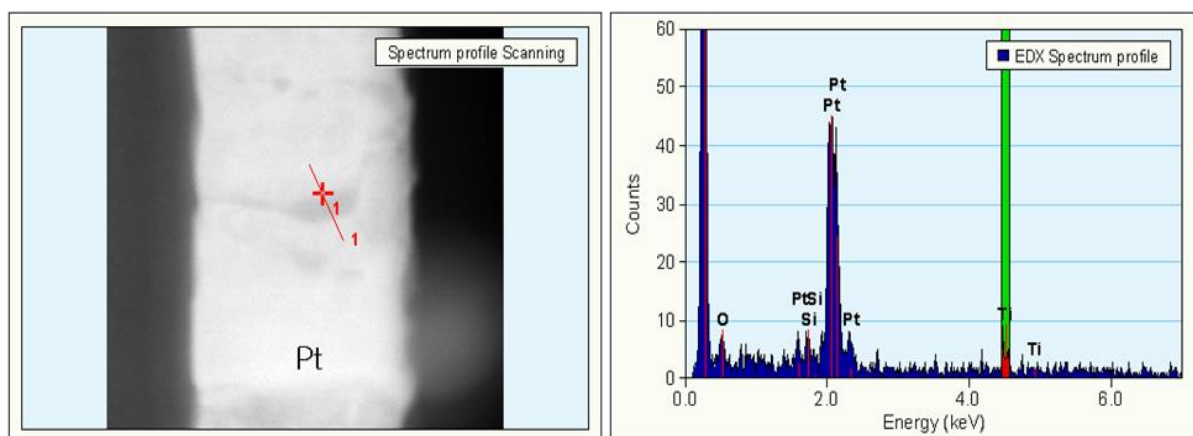


Figure S1. Focused ion beam SEM image of the Pt layer for the M sample (left) and EDX spectrum profile (right) taken around the red line in the SEM image.

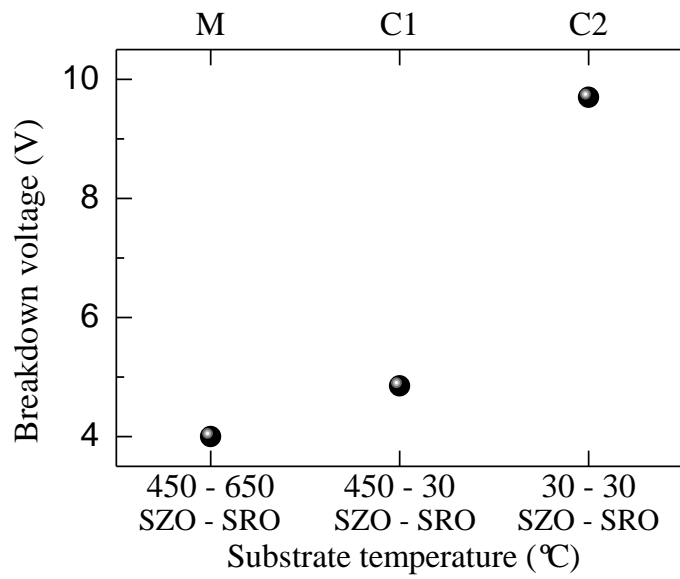


Figure S2. Breakdown voltage for the M, C1 and C2 samples.

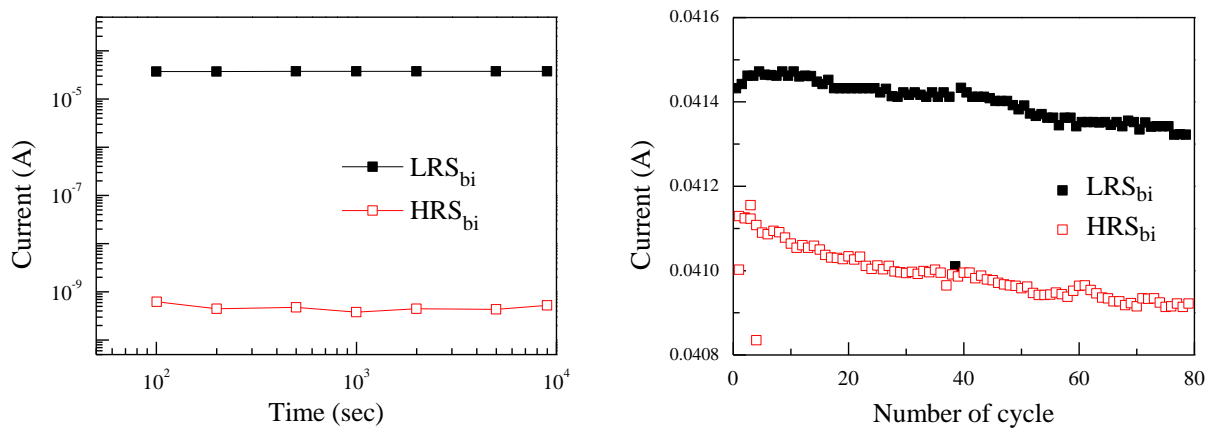


Figure S3. Retention (left) and endurance properties (right) in the bipolar RS mode. 100 Hz pulsed voltage bias (read – reset – read – set) is applied for the switching measurement.