

Supporting Information of

**Giant resistance in  $(\text{SrTiO}_3)_2/(\text{BaTiO}_3)_4/(\text{CaTiO}_3)_2$   
superlattice with enhanced polarization and intrinsic  
asymmetric ferroelectricity**

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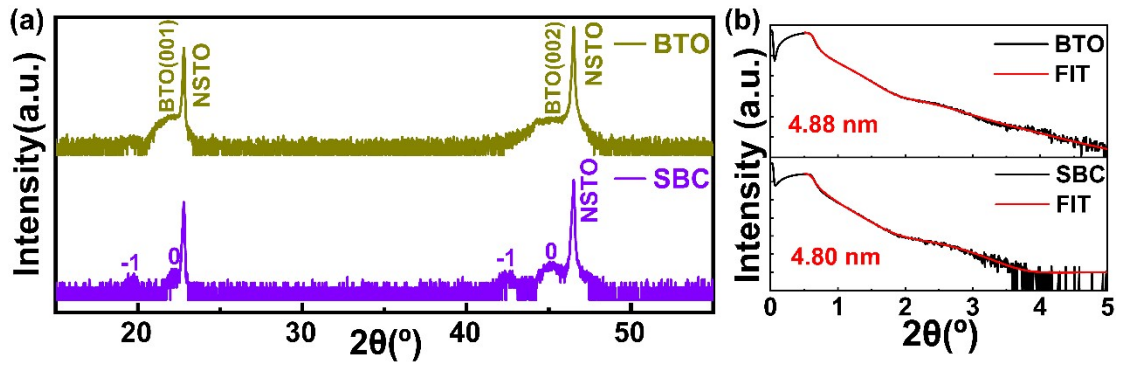


Fig. S1 (a) XRD  $2\theta$ - $\omega$ -scans for BTO film and SBC superlattice on the NSTO substrate. The thickness of both films is controlled at about 12 unit cells. (b) XRR measurements for BTO film and SBC superlattice.

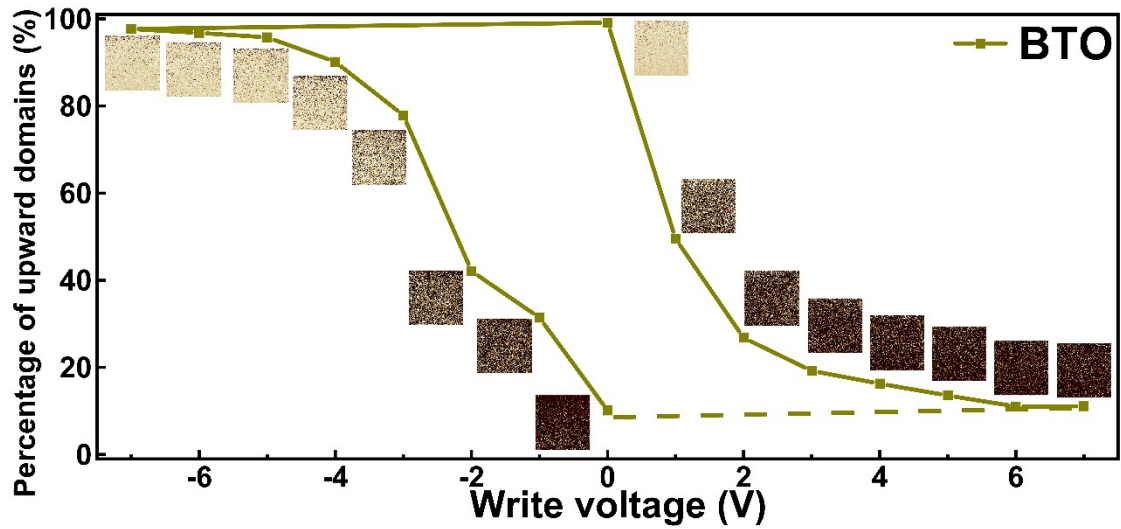


Fig. S2 The percentage of the upward domains in BTO film as a function of the written voltage. The insets are the corresponding PFM phase images.

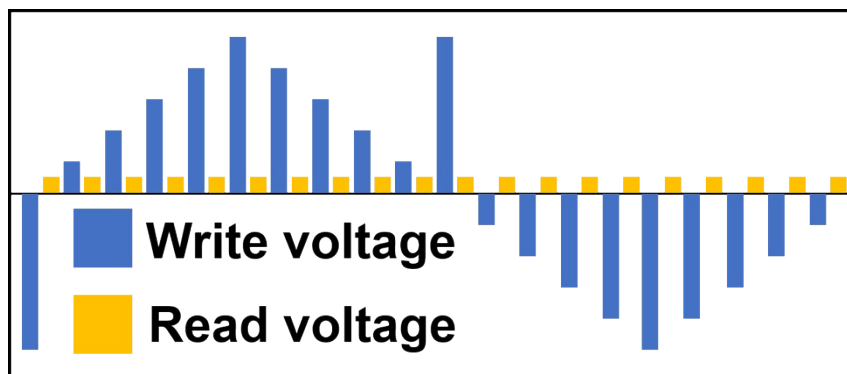


Fig. S3 Schematic diagram of test pulse sequence, the writing pulse sequence is  $0\text{ V} \rightarrow 6.5\text{ V} \rightarrow 0\text{ V} \rightarrow -6.5\text{ V} \rightarrow -0.5\text{ V}$ . Before applying positive and negative pulse sequences, the device state is set to high resistance state and low resistance state respectively by using  $-6.5\text{ V}$  and  $+6.5\text{ V}$ . A linear read voltage from  $-0.1\text{ V}$  to  $0.1\text{ V}$  is applied immediately after applying a write pulse.