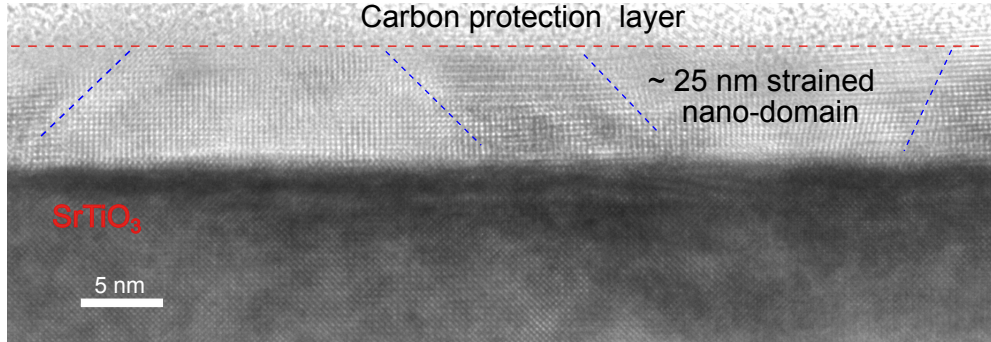
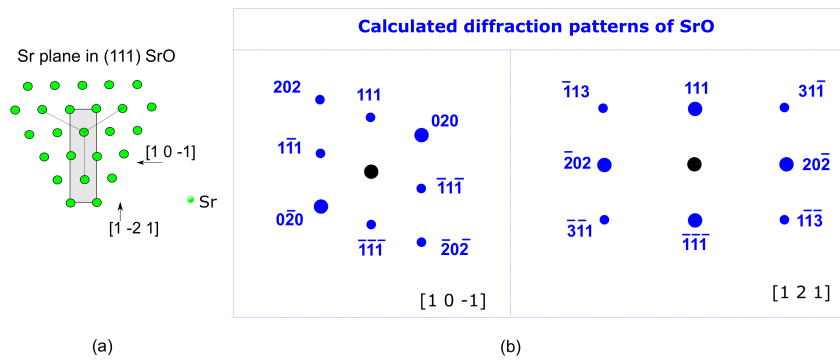


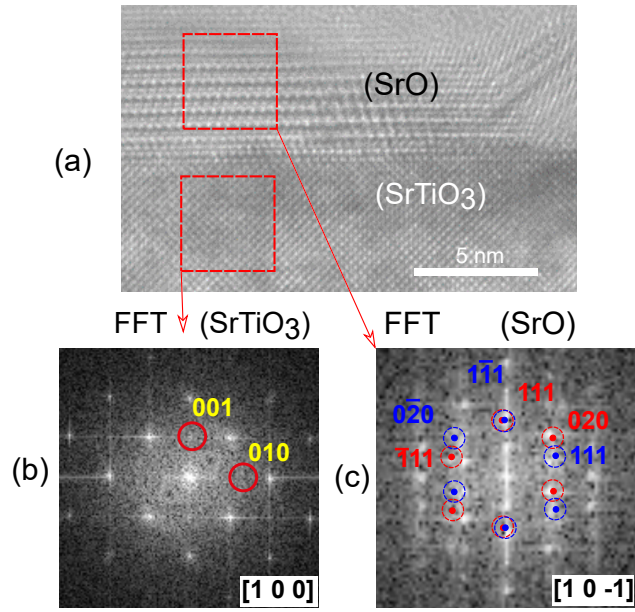
1 Supplemental material



S1: TEM image of SrO film grown on STO. Strained nano-domains of about 25 nm width are confined between dislocations.



S2: (a) Schematic representation of the Sr plane orthogonal to the $[111]$ direction. (b) TEM diffraction patterns of SrO calculated for the $[1\ 0\ -1]$ and $[1\ -2\ 1]$ directions.



S3: (a) TEM image of SrO film grown on STO. Fast Fourier transform of TEM patterns of selected regions of SrTiO₃ (b) and SrO (c). Due to the lamella thickness (~ 100 nm) we observe the superimposed diffraction patterns of two SrO domains imaged along $[1\ 0\ -1]$ direction.