Formation and manipulation of domain walls with 2-nm domain periodicity in $BaTiO_3$ without contact electrodes

*Maya Barzilay and Yachin Ivry**

Supplementary information

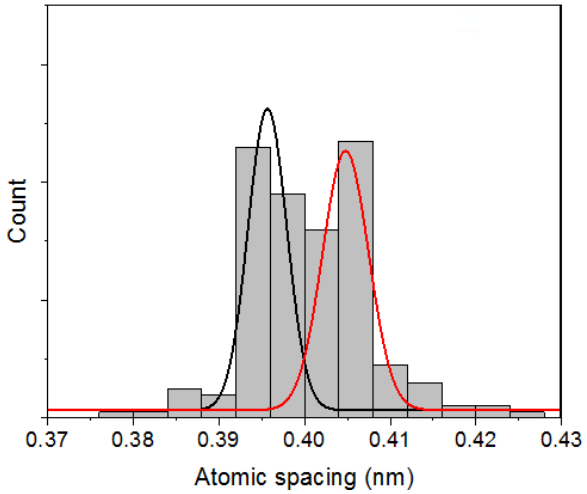

Figure SI1| Unit-cell spacing distribution and error estimation. Histogram of the unit-cell spacing distribution extracted from Figure 3C. Black and red curves are the best fit for Gaussian functions that are centered respectively at 3.95 Å, and 4.05 Å with 0.025 Å standard deviation. These data define the atomic spacing at *a* and *c* domains, as well as the standard error.

Video Link

Video SI1| High-density domain wall formation, evolution and rotation in $BaTiO_3$. High-density domain walls are formed under an electron beam. Domain density increases with increasing exposure time, until reaching a saturation value of 2 nm. Beyond this value, increasing exposure time rotates the domains. Pre-designed domain switching is obtained by using the geometry of the crystallite and exposing intentionally regions, in which the striped domains are not perpendicular to the geometric boundary.