

Supplementary Information for

Interfacial defects induced electronic property transformation at perovskite SrVO₃/SrTiO₃ and LaCrO₃/SrTiO₃ heterointerfaces

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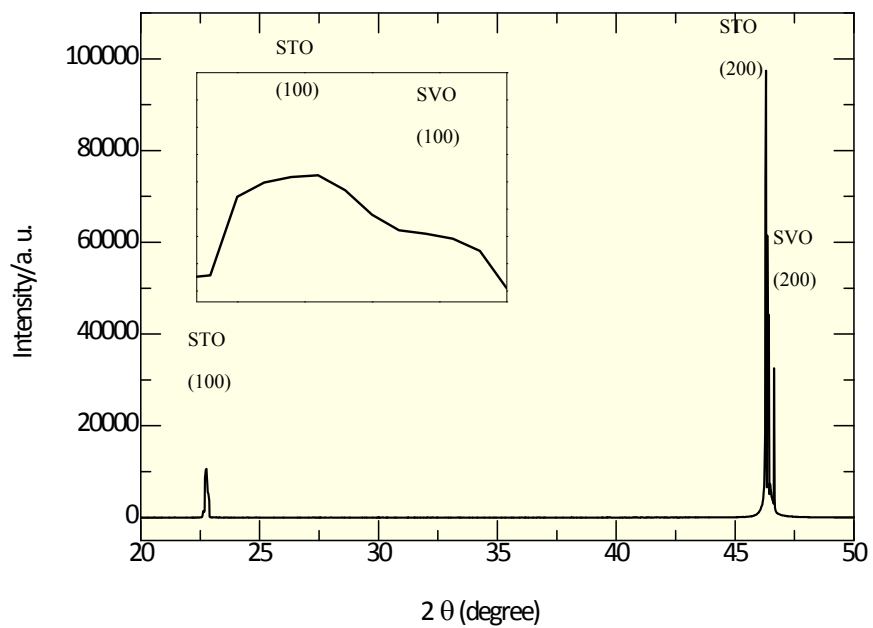
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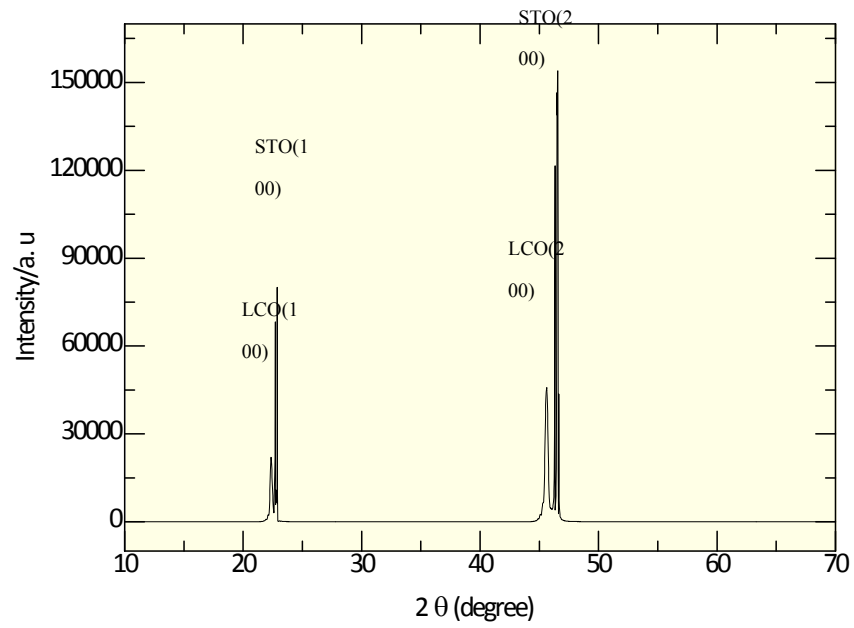
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Supplementary Figure S1



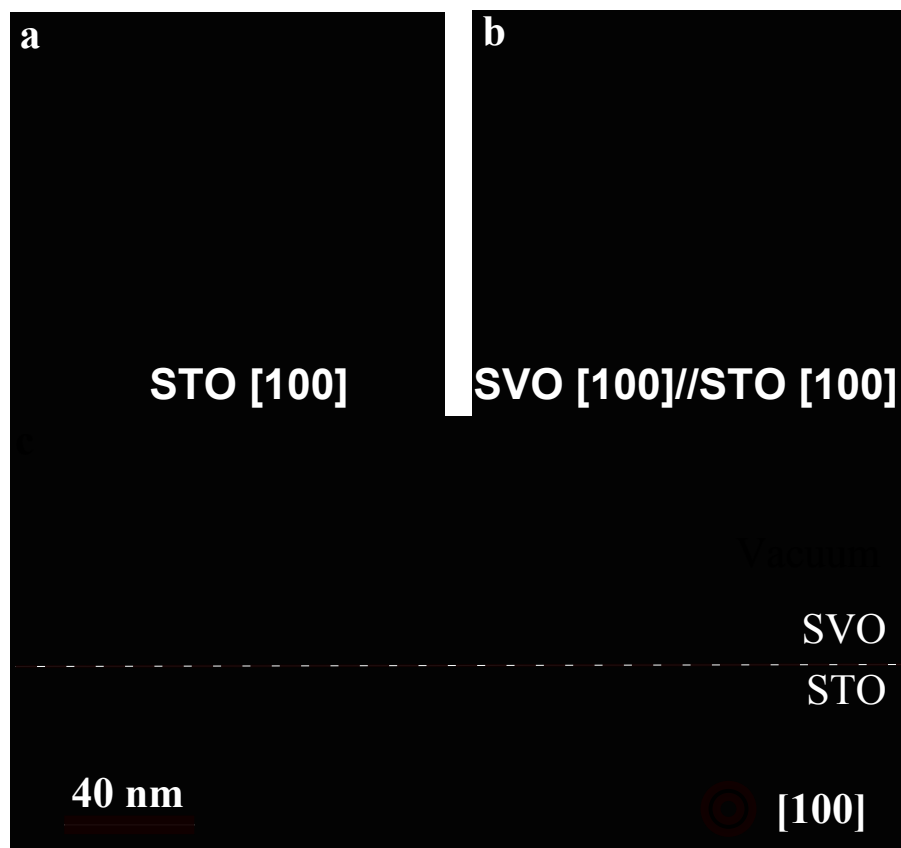
Supplementary Figure S1. XRD spectra for the SVO thin film grown on STO substrate. The inset shows the enlarged area near STO (100) peak.

Supplementary Figure S2



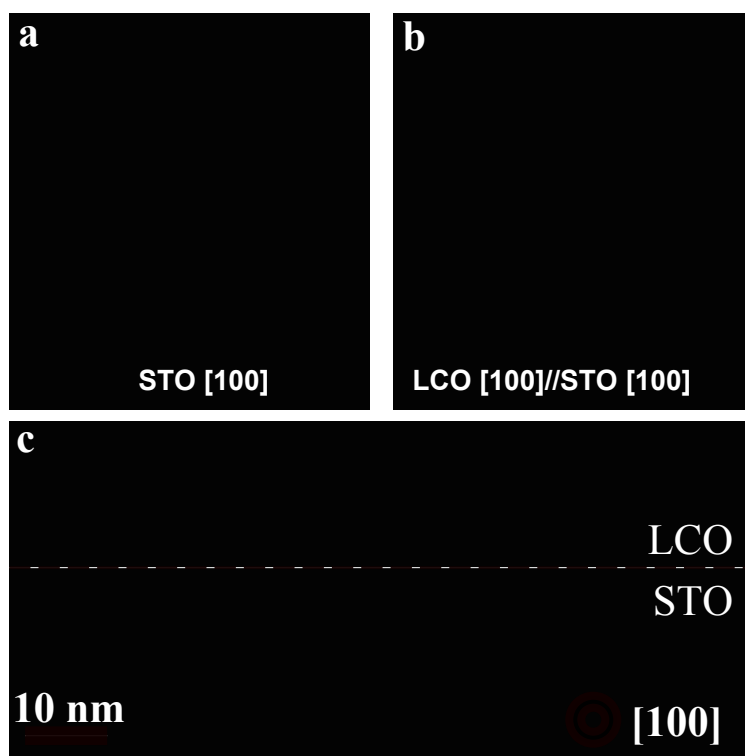
Supplementary Figure S2. XRD spectra for the LCO thin film grown on STO substrate.

Supplementary Figure S3



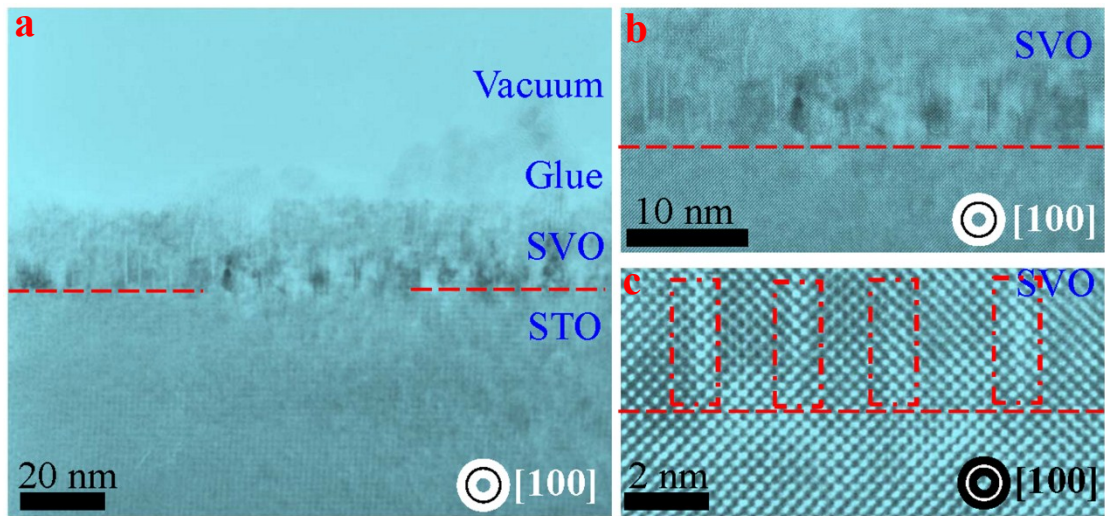
Supplementary Figure S3. (a) SADP of the STO substrate viewed from [100] direction. (b) SADP taken at the SVO[100]/STO[100] interface. (c) Low-magnification TEM micrographs seen from [100] direction showing cross-sectional view of the SVO/STO interface.

Supplementary Figure S4



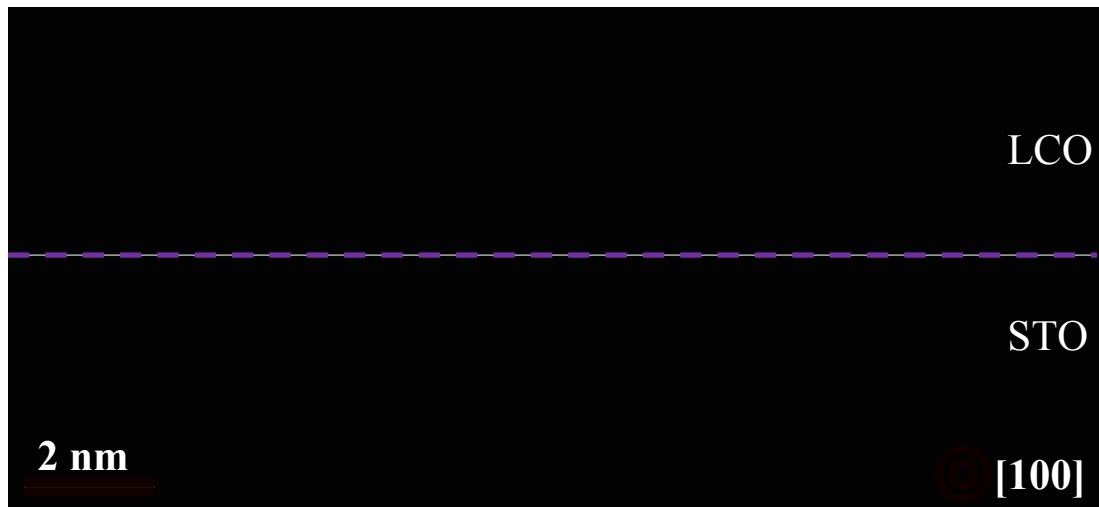
Supplementary Figure S4. (a) SADP of the STO substrate viewed from [100] direction. (b) SADP taken at the LCO[100]/STO[100] interface. (c) Low-magnification TEM micrographs seen from [100] direction showing cross-sectional view of the LCO/STO interface.

Supplementary Figure S5



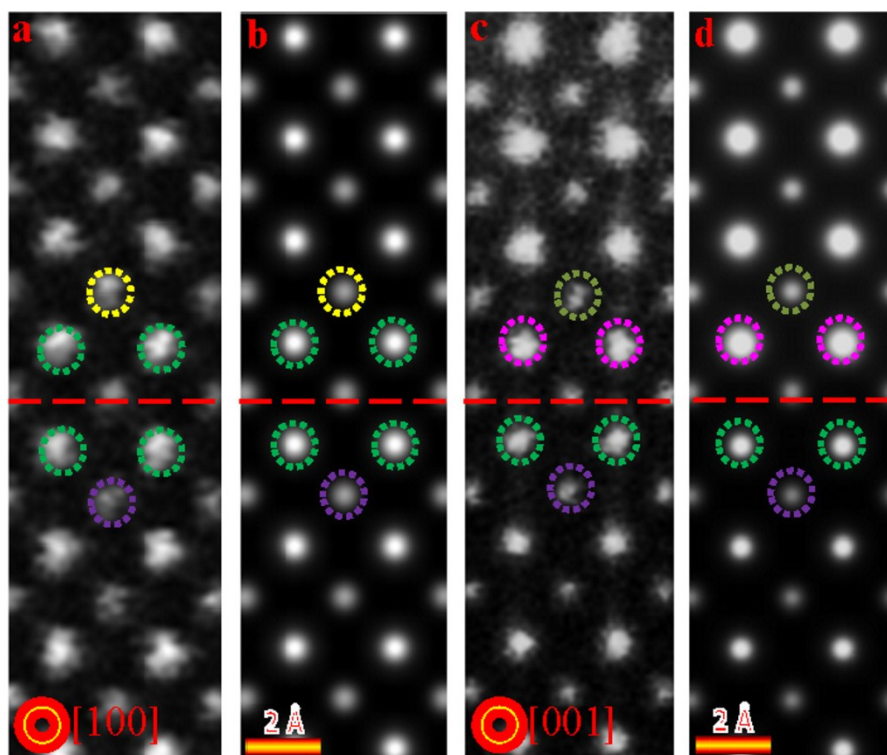
Supplementary Figure S5. (a) Low-magnification TEM image of the SVO/STO interface. (b) Enlarged image around the interface, showing the existence of domain structure at the interface. (c) High resolution TEM image of the SVO/STO interface.

Supplementary Figure S6



Supplementary Figure S6. High resolution TEM micrograph showing cross-sectional view at the LCO/STO interface.

Supplementary Figure S7



Supplementary Figure S7. Experimental and the simulated HAADF-STEM images of SVO/STO (a-b) and LCO/STO (c-d) heterointerfaces. Green, yellow, violet, pink, and brown spheres represent Sr, V, Ti, La, and Cr atoms, respectively. The interface location is indicated by a dashed line.