

Supporting Information for review only

Antiferromagnetic interlayer coupling and thus induced distinct spin texture for the $[\text{LaCoO}_3/\text{LaMnO}_3]_5$ superlattices

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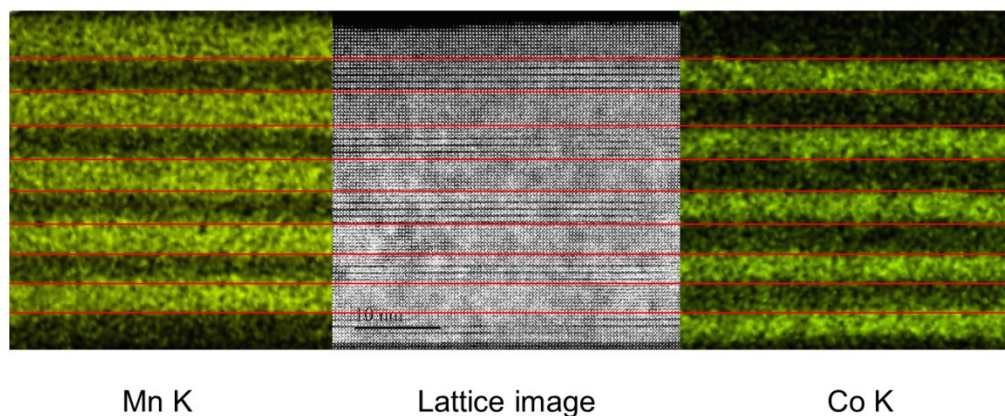
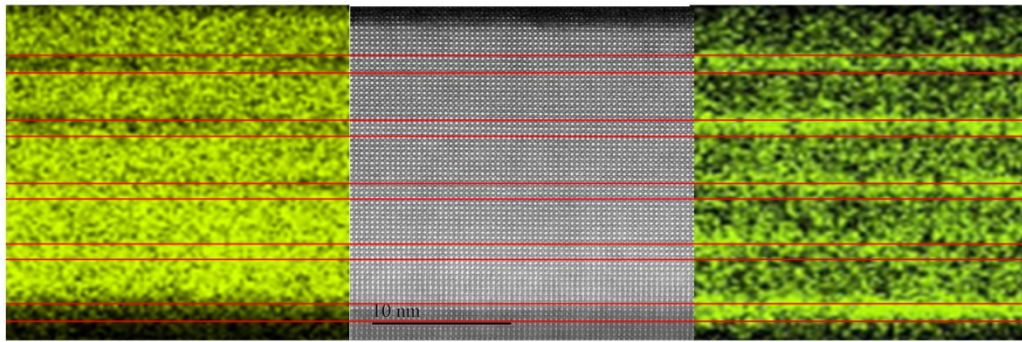


Figure S1. A comparison of the lattice image (middle) with the EDX mapping of the Mn (left) and Co (right) elements for the SLs of $[\text{LMO}(5.7\text{nm})/\text{LCO}(4.2\text{nm})]_5$ on STO. It shows that the structural modulation (dark stripes) appears only in the LCO layer. Here 5.7nm and 4.2nm are nominal thicknesses. By directly counting the unit cell numbers the actual layer thickness can be determined. It is about 11 uc for LMO and 8 uc for LCO. Solid lines are guides for the eye.



Mn K

Lattice image

Co K

Figure S2. A comparison of the lattice image (middle) with the EDX mapping of the Mn (left) and Co (right) elements for the SLs of $[\text{LMO}(5.7\text{nm})/\text{LCO}(2.1\text{nm})]_5$ on STO. It shows that the structural modulation (dark stripes) appears only in the LCO layer. Here 5.7nm and 2.1nm are nominal thicknesses. By directly counting the unit cell numbers the actual layer thickness can be determined. It is about 9uc for LMO and ~ 3 uc for LCO. Since the LCO layer is too thin, no structural modulation was observed. Solid lines are guides for the eye.