

Supporting Information.

Table S1. PLD growth conditions, IP and OP lattice parameters of each layer involved in the heteroepitaxial structure, calculated from the RSM measurements.

Layer	T_s (°C)	pO_2 (mTorr)	Growth flux (Å/s)	IP a para. (Å)	OP c para. (Å)	c/a ratio
MgO	610	0.2	0.5	4.59	4.11	0.895
NSTO	700	10	0.7	4.15	4.08	0.983
BFCO _s	650	10	0.9	3.98	3.89	0.977
BFCO _r				3.92	3.93	1.002

What do the s and r suffix labels mean?

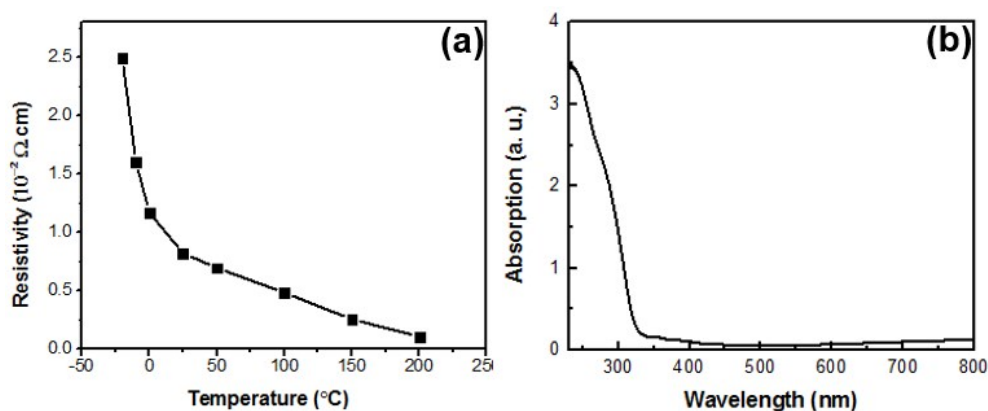


Figure S1. (a) Resistivity versus temperature and (b) optical absorption of NSTO films.

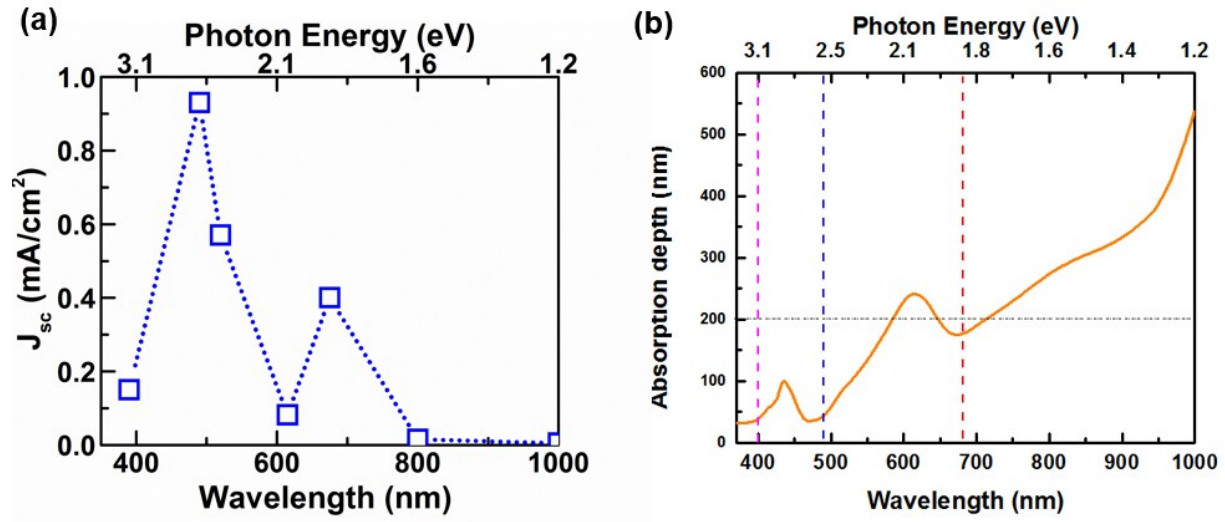


Figure S2. (a) Wavelength dependence of the short current density and (b) Absorption depth in 200 nm thick BFCO films.