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1	Supporting Information
2	Broadening the temperature range for high thermoelectric performance of bulk
3	polycrystalline strontium titanate by controlling the electronic transport
4	properties
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Figure S2. TEM images and EDS elemental mappings of La5Nb5 bulk sample: (a) TEM image of
La5Nb5 bulk sample; (b) enlarged TEM image of positions marked with red square on (a); EDS

La5Nb5 bulk sample; (b) enlarged TEM image of positions marked with red square on (a); EDS
elemental mapping analyses of (c) C element, and (d) Nb element; (e–i) EDS elemental point

4 elemental mapping analyses of5 analyses of point 1–5 on (a).

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Figure S3. (a) TEM image of La7Nb7 bulk sample. HRTEM images and SAED patterns of positions
marked with (b-c) red square on SrTiO₃ grain, (d-e) yellow rhombus on TiO_{2-δ} grain, and (f-g)

10 green triangle on NbC grain. HRTEM images of (h) $SrTiO_{3}$ / $TiO_{2-\delta}$ and (i) $SrTiO_{3}$ /NbC

11 heterojunctions.



Figure S4. TEM images for phase boundary between the second phase and the matrix of La5Nb5
bulk sample: (a) low-magnification TEM; (b) HRTEM image of the NbC–C phase boundary.





Figure S5. XPS analysis for La3Nb3 and La10Nb10 bulk samples: (a) Ti 2p and (b) Nb3d of
La3Nb3 and (c) Ti 2p and (d) Nb 3d of La10Nb10. The red hexagons are the experimental data, the
black line is the fitted line, the blue dot lines are Ti⁴⁺ and Nb⁵⁺, and the cyan areas are Ti³⁺ and Nb⁴⁺.



Figure S6. Temperature dependence of Hall mobility for the un-doped sample.



Figure S7. Temperature dependent of (a–d) electrical conductivity σ, (e–h) Seebeck coefficient S,
(i–l) power factor (*PF*) of La3Nb3, La5Nb5, La7Nb7, and La10Nb10 samples.





0.60

Figure S9. Temperature dependence of specific heat (C_p) of SrTiO₃ for different doping concentrations.

Temperature (K)

1000 1100