Supplementary Materials

High-pressure modulation of band gap and microstructure in N-type high-entropy strontium titanate for enhanced thermoelectric performance

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Table S1 Oxidation state, coordination number, and corresponding ion radius (r_c) of each element.

Element	Oxidation	Coordination Number	r_c (pm)
Sr	+2	XII	118.0
La	+3	XII	103.2
Nd	+3	XII	98.3
Sm	+3	XII	95.8
Eu	+3	XII	94.7
Ti	+4	VI	60.5
O	-2	VI	140.0

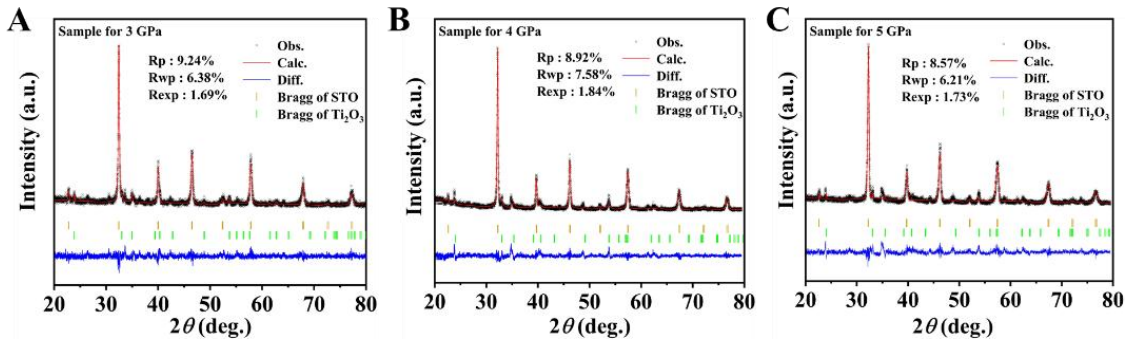

Figure S1. Rietveld refinement analysis for XRD data of all samples.

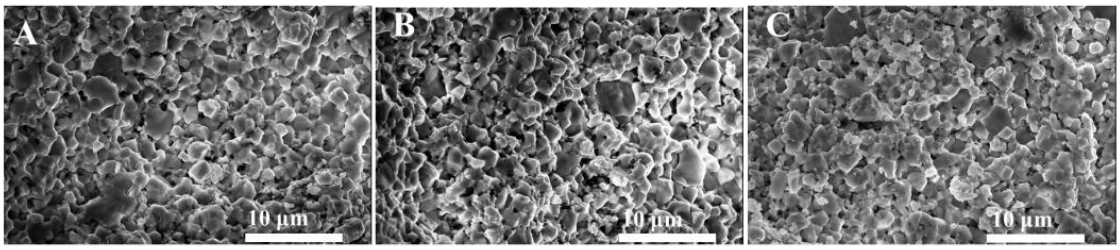

Figure S2. SEM images of $(Sr_{0.2}La_{0.2}Nd_{0.2}Sm_{0.2}Eu_{0.2})TiO_3$ samples synthesized at the pressures of (A) 3 GPa, (B) 4 GPa, (C) 5 GPa.

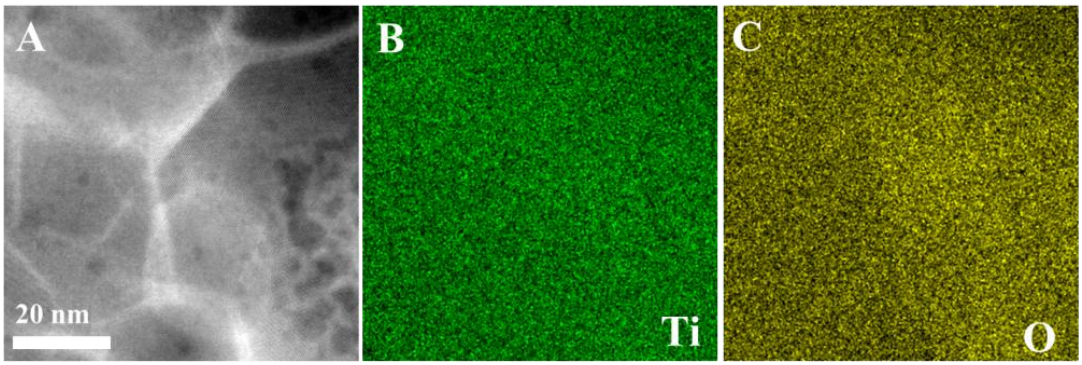

Figure S3. EDS mapping of $(Sr_{0.2}La_{0.2}Nd_{0.2}Sm_{0.2}Eu_{0.2})TiO_3$ sample indicates a uniform distribution of Ti and O elements.

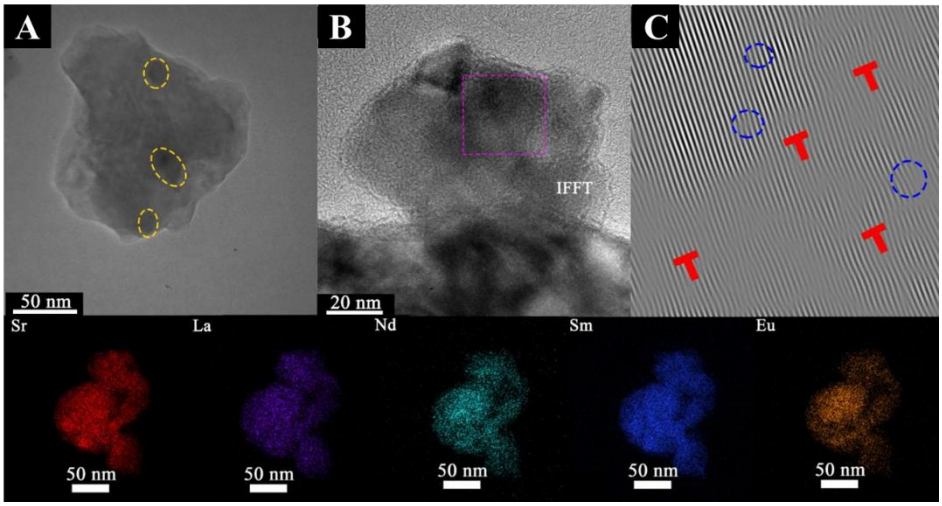

Figure S4. (A) TEM image, (B) HRTEM image and (C) IFFT image of the 5 GPa sample. Lower panels show the corresponding EDS mapping results.

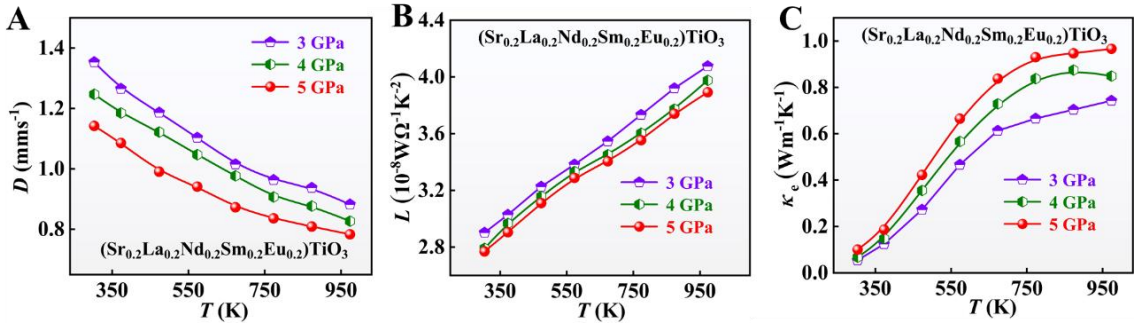

Figure S5. Temperature dependence of (A) thermal diffusion coefficient, (B) Lorenz constant L and (C) electrical thermal conductivity κ_e of the $(Sr_{0.2}La_{0.2}Nd_{0.2}Sm_{0.2}Eu_{0.2})TiO_3$ samples.