Improving thermoelectric performance of *p*-type PbSe *via* synergistically enhancing Seebeck coefficient and reducing electronic thermal conductivity

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Table S1. the theoretical density (ρ_t), experimental density (ρ_e) and the ratio of ρ_e to ρ_t for $Pb_{0.98}Na_{0.02}Se$+x%CdTe (x=0, 2, 3, 4, 5, 6).

x	ρ_t (g/cm^3)	ρ_e (g/cm^3)	ρ_e/ρ_t
0	8.05	7.63	94.8%
2	8.02	7.67	95.6%
3	8.01	7.62	95.1%
4	8.00	7.68	96.0%
5	7.99	7.69	96.2%
6	7.98	7.65	95.9%

Table S2. the Seebeck coefficients (S), lattice thermal conductivity (κ_{lat}), quality factor (B) of $Pb_{0.98}Na_{0.02}Se$+x%CdTe (x=0, 2, 3, 4, 5, 6) at 860 K.

x	S (μV/K)	κ_{lat} (W/mK)	B
0	168	0.69	0.45
2	208	0.75	0.47
3	231	0.62	0.69
4	238	0.61	0.72
5	232	0.65	0.60
6	246	0.66	0.60

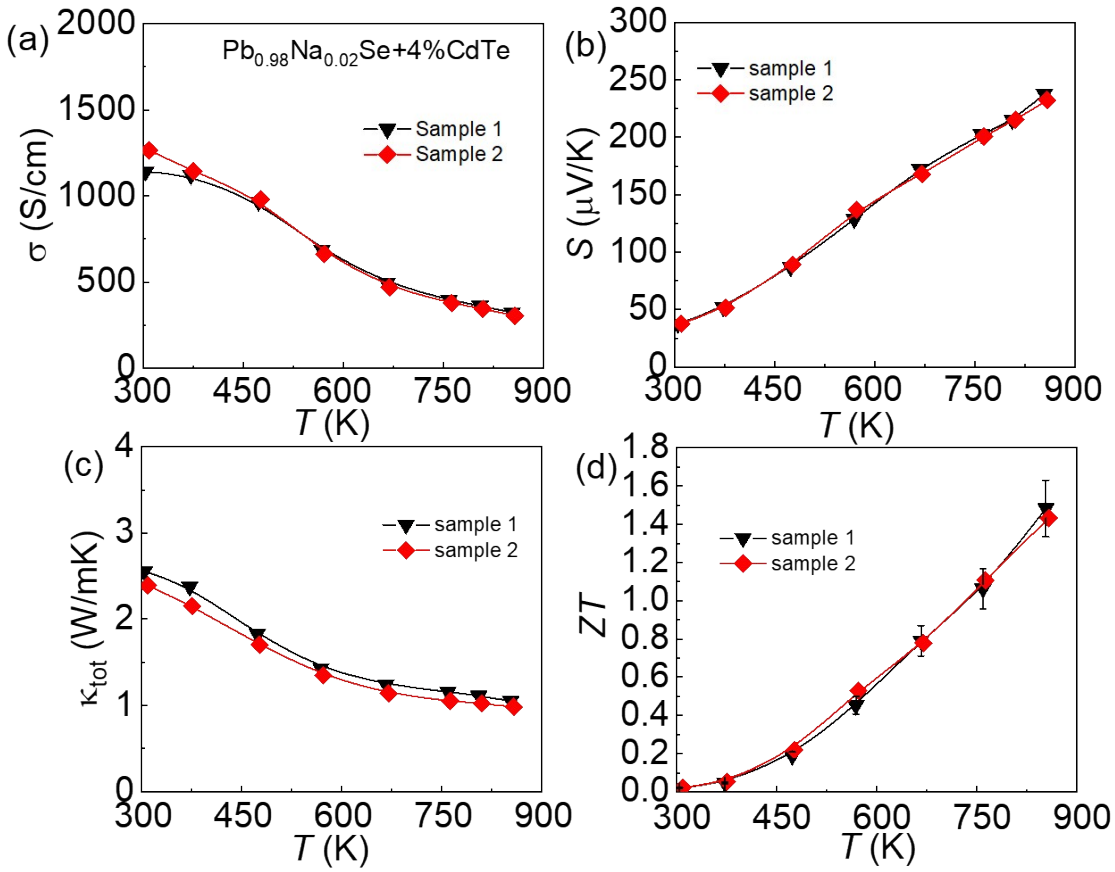

Figure S1. the temperature dependent thermoelectric properties of repeated $Pb_{0.98}Na_{0.02}Se$+4%CdTe samples, which shows good repeatability: (a) electrical conductivity, (b) Seebeck coefficients, (c) total thermal conductivity, (d) *ZT*.