

Electronic Supplementary Information

Simultaneous enhancement of thermoelectric and mechanical performance of SnTe by nano SiC compositing

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Table S1. Lattice parameter of SnTe- x vol% SiC ($x = 0, 1, 3, 5, 10$) after Rietveld refinement.

Name	a (Å)
SnTe	6.327204
1 vol%	6.324573
3 vol%	6.322470
5 vol%	6.323441
10 vol%	6.325015

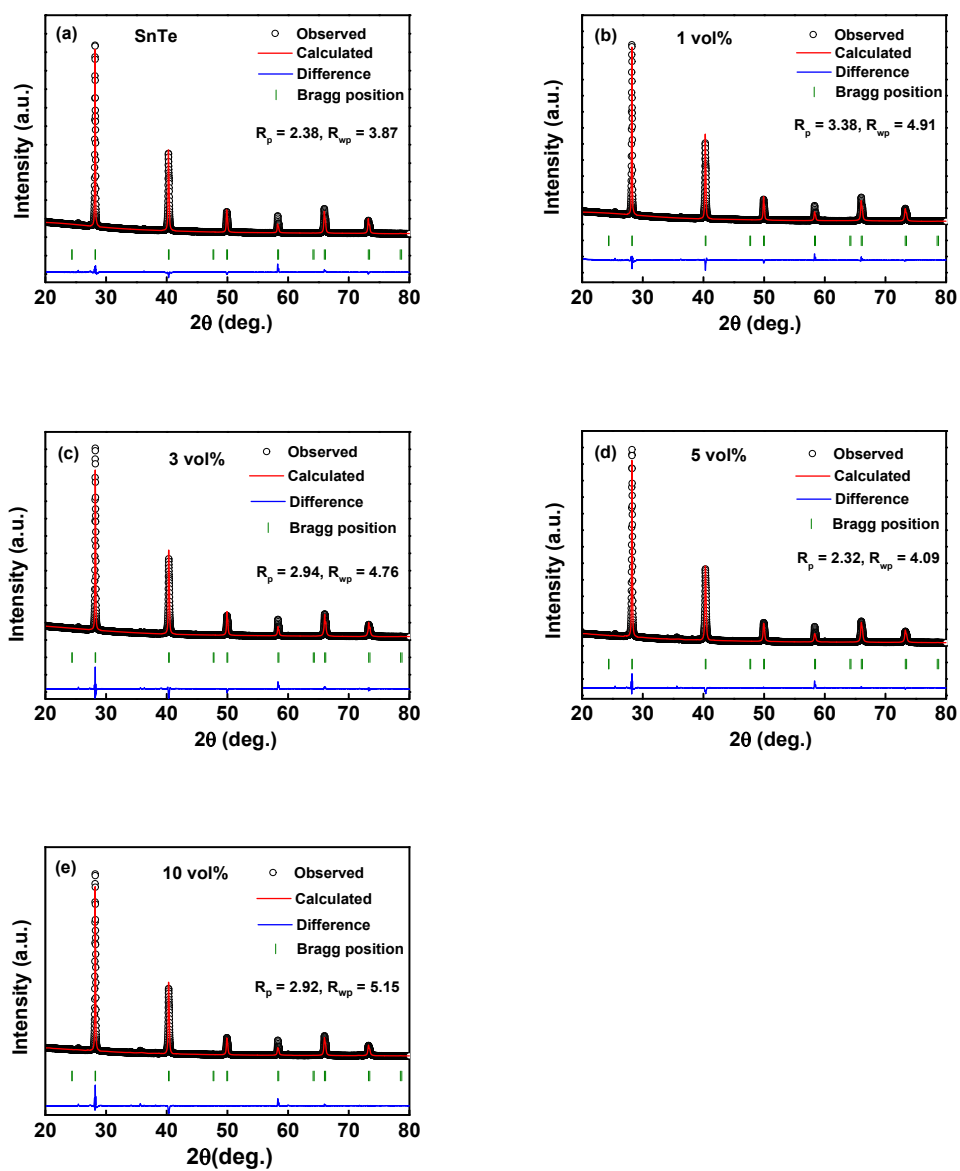


Figure S1. Rietveld refinement of SnTe-x vol% SiC ($x = 0, 1, 3, 5, 10$).

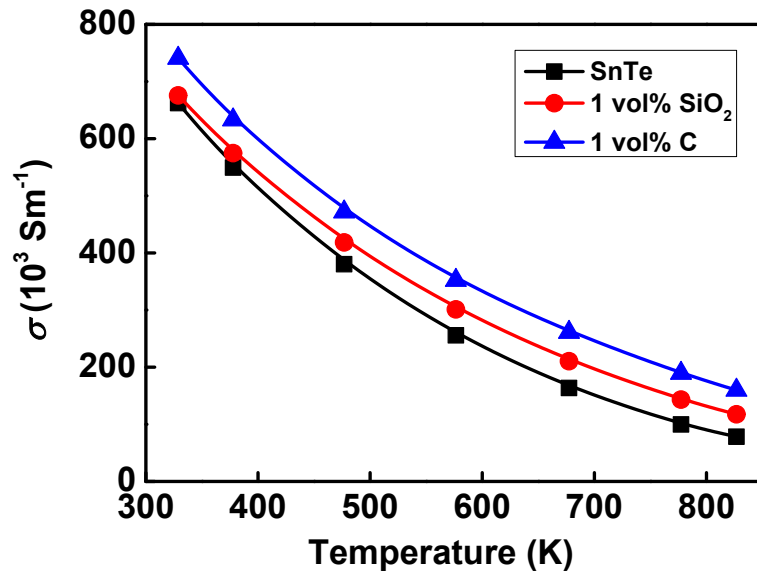


Figure S2. The temperature dependence of electrical conductivity for pristine SnTe, 1 vol% SiO_2 and C composited SnTe samples.

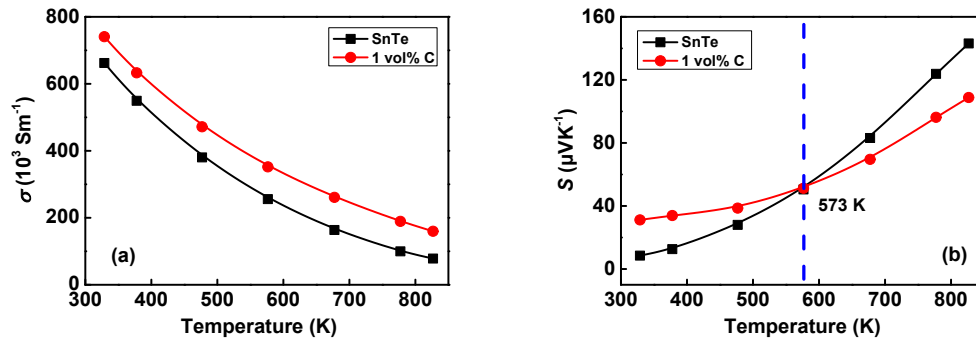


Figure S3. The temperature dependence of (a) electrical conductivity and (b) Seebeck coefficient for 1 vol% C composited SnTe which indicates the energy filtering effect occurred in the C composited SnTe.

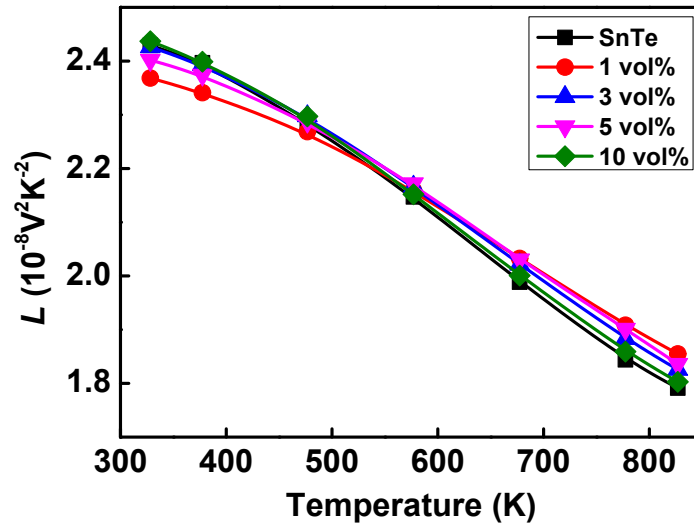


Figure S4. The temperature dependence of Lorenz number for SnTe- x vol% SiC ($x = 0, 1, 3, 5, 10$).

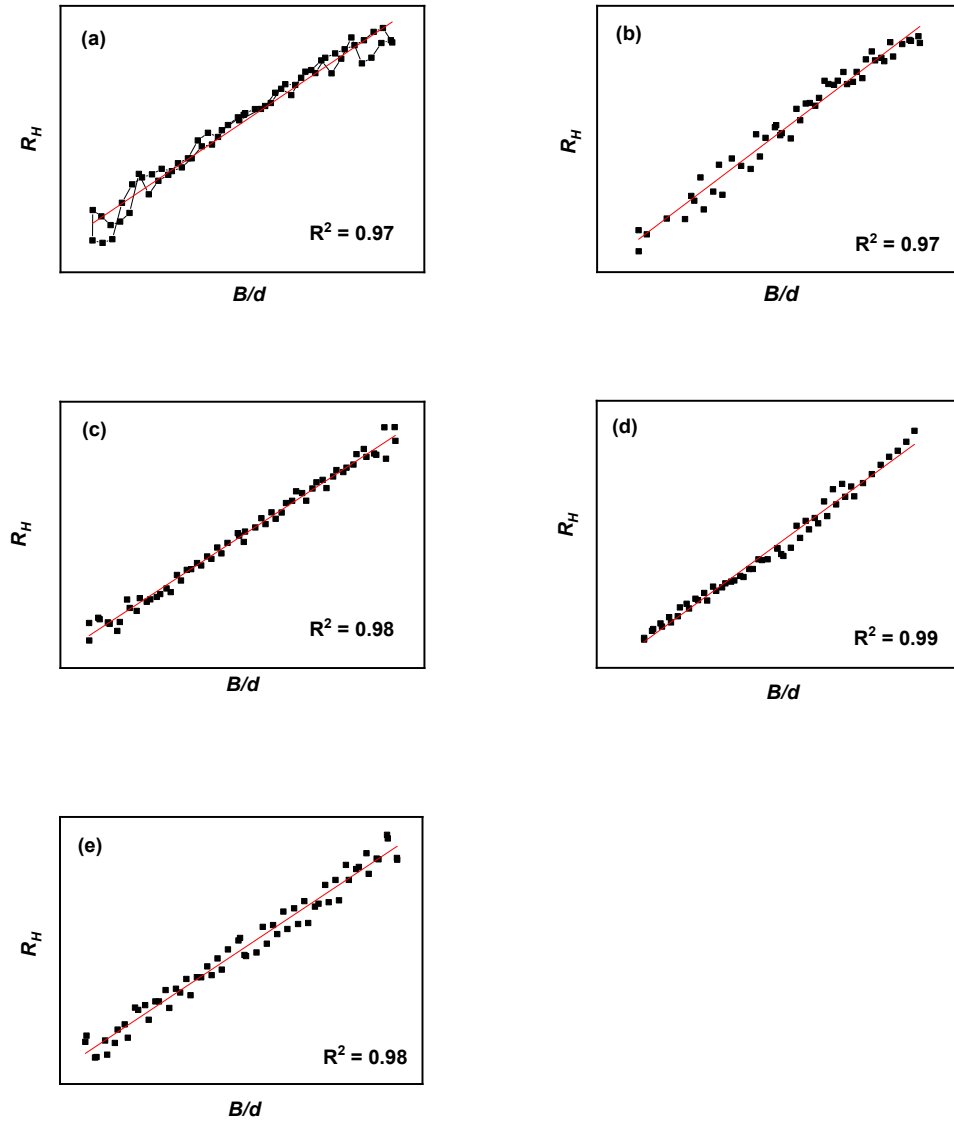


Figure S5. The magnetic field dependence of Hall resistivity for (a) SnTe (b) SnTe-1 vol% SiC (c) SnTe-3 vol% SiC (d) SnTe-5 vol% SiC (e) SnTe-10 vol% SiC at room temperature.

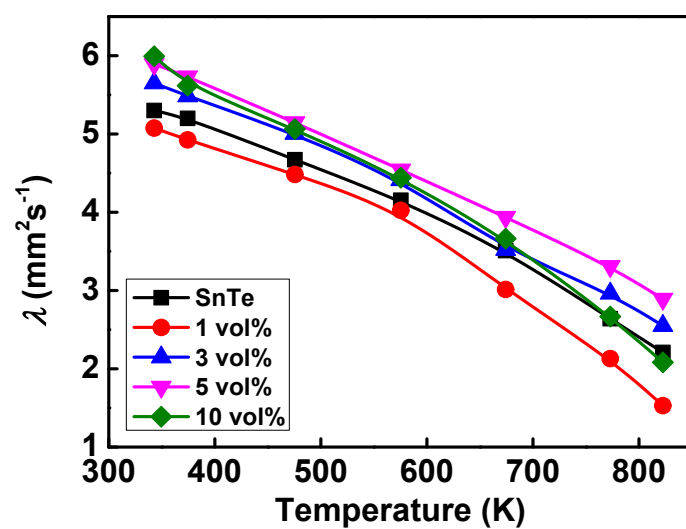


Figure S6. The temperature dependence of thermal diffusivity for SnTe- x vol% SiC (x = 0, 1, 3, 5, 10).

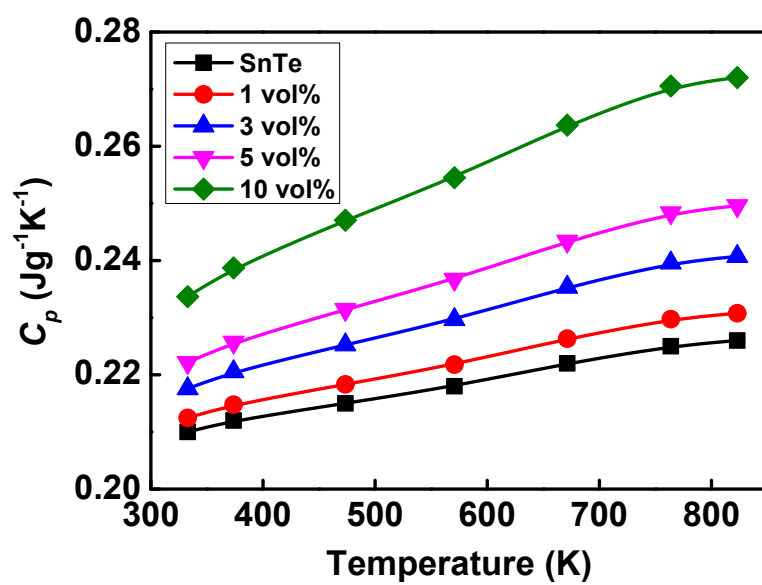


Figure S7. The temperature dependence of heat capacity for SnTe- x vol% SiC ($x = 0, 1, 3, 5, 10$).

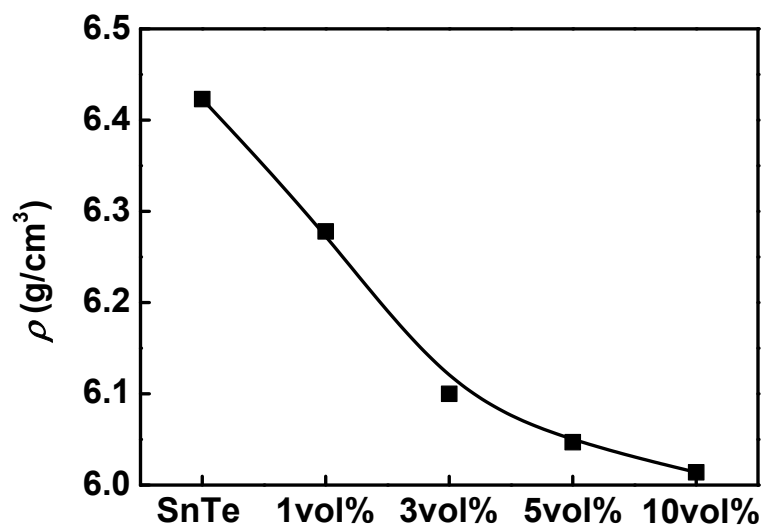


Figure S8. The experimental density of SnTe- x vol% SiC ($x = 0, 1, 3, 5, 10$).