Supporting Information (SI)

High power factor and enhanced thermoelectric performance of SnTe-$AgInTe_2$: Synergistic effect of resonance level and valence band convergence

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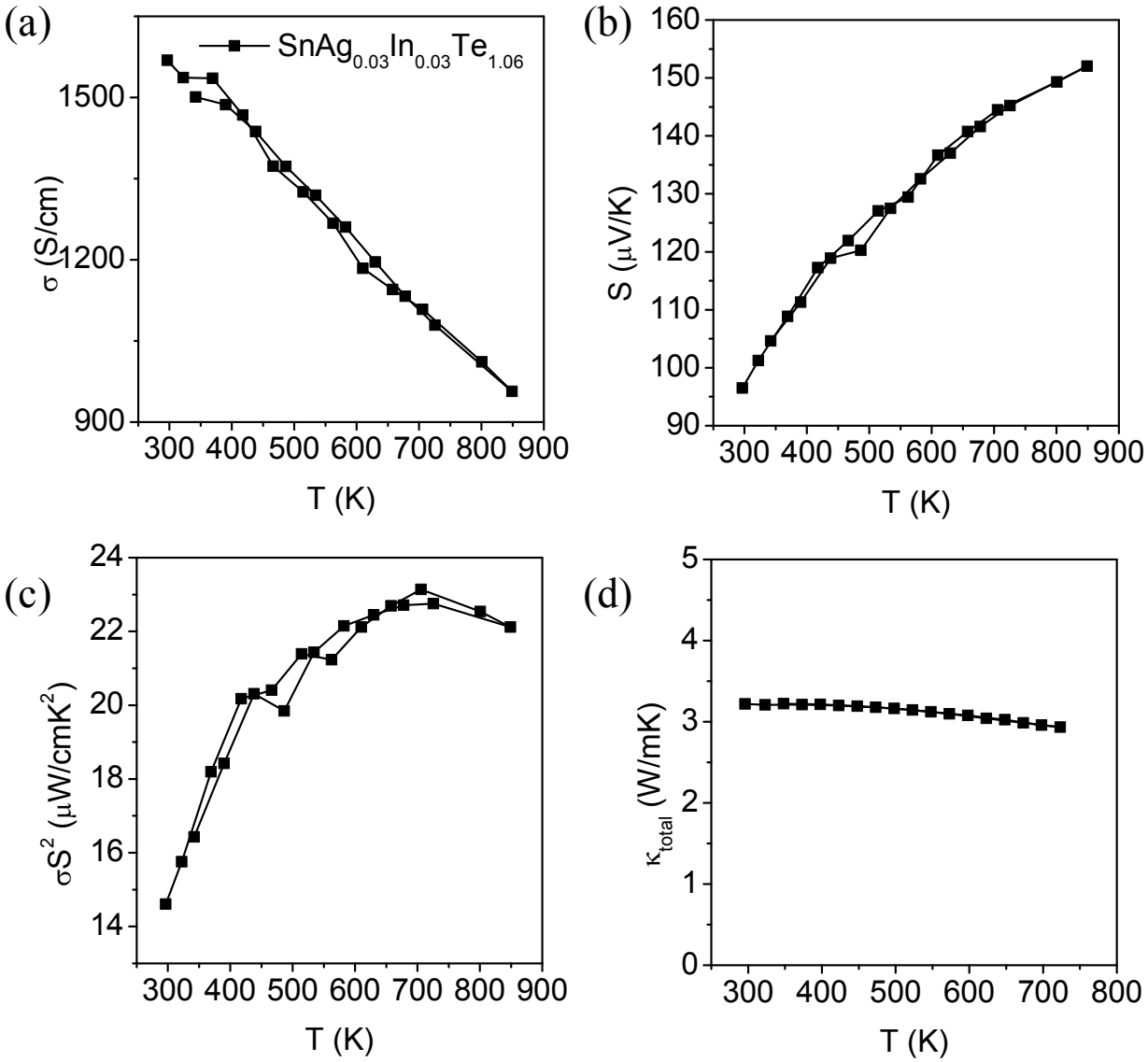

Figure S1. Heating and cooling cycle (a) electrical conductivity (σ), (b) Seebeck coefficient (S), (c) power factor (σS^2) and (d) total thermal conductivity (κ_{total}) data of $SnAg_xIn_xTe_{1+2x}$ (x = 0.03).

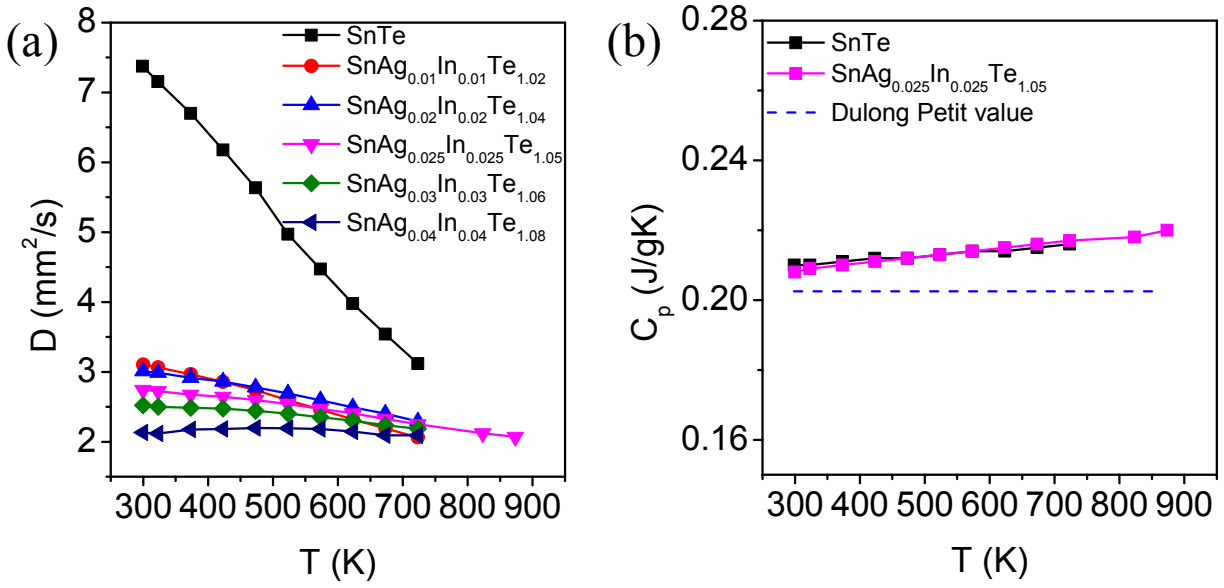

Figure S2**.** Temperature dependent diffusivity (*D*) and heat capacity (C_p) of $SnAg_xIn_xTe_{1+2x}$.

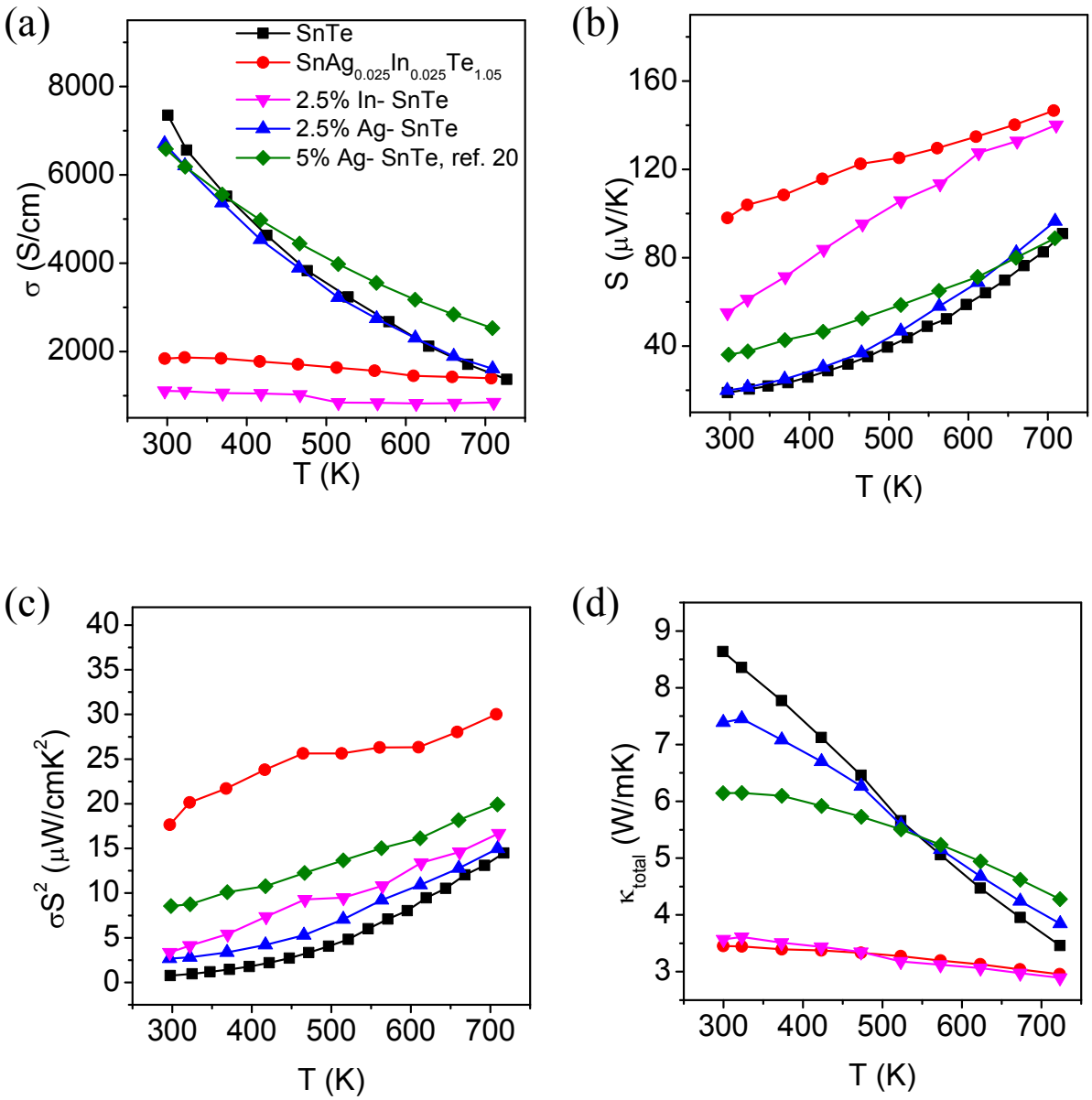

Figure S3. Comparison of (a) electrical conductivity (σ), (b) Seebeck coefficient (S), (c) power factor (σS^2) and (d) total thermal conductivity (κ_{total}) among pristine SnTe, individual In and Ag doped SnTe and In & Ag co-doped SnTe.

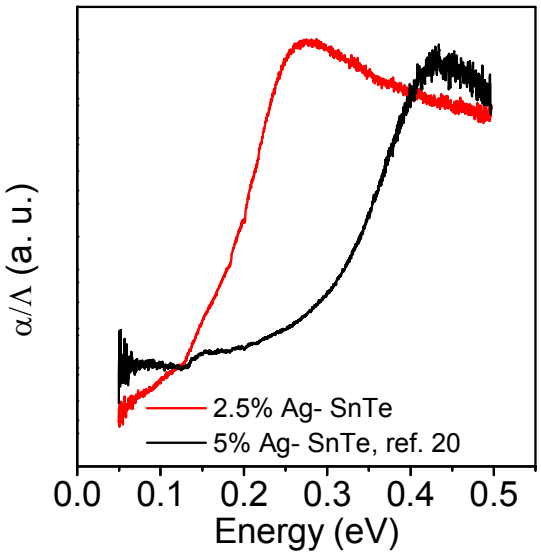

Figure S4. Electronic absorption spectra of 2.5% Ag- SnTe and 5% Ag- SnTe[20] samples.

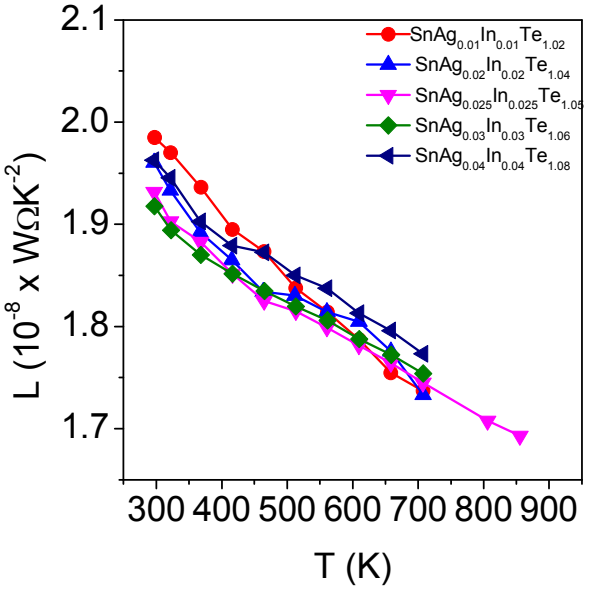

Figure S5**.** Temperature dependent Lorenz number (L) of $SnAg_xIn_xTe_{1+2x}$.

Table S1. Densities of all samples

Composition	Density (g/cm^3)	Composition	Density (g/cm^3)
SnTe	6.26	$SnAg_{0.025}In_{0.025}Te_{1.05}$	6.25
$SnAg_{0.01}In_{0.01}Te_{1.02}$	6.21	$SnAg_{0.03}In_{0.03}Te_{1.06}$	6.29
$SnAg_{0.02}In_{0.02}Te_{1.04}$	6.22	$SnAg_{0.04}In_{0.04}Te_{1.08}$	6.15