

## Supplementary Information

# Facile chemical synthesis and enhanced thermoelectric properties of Ag doped SnSe nanocrystals

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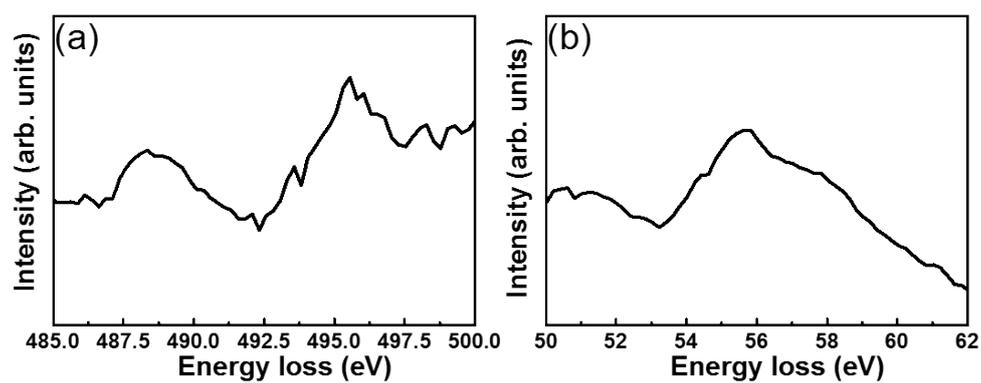
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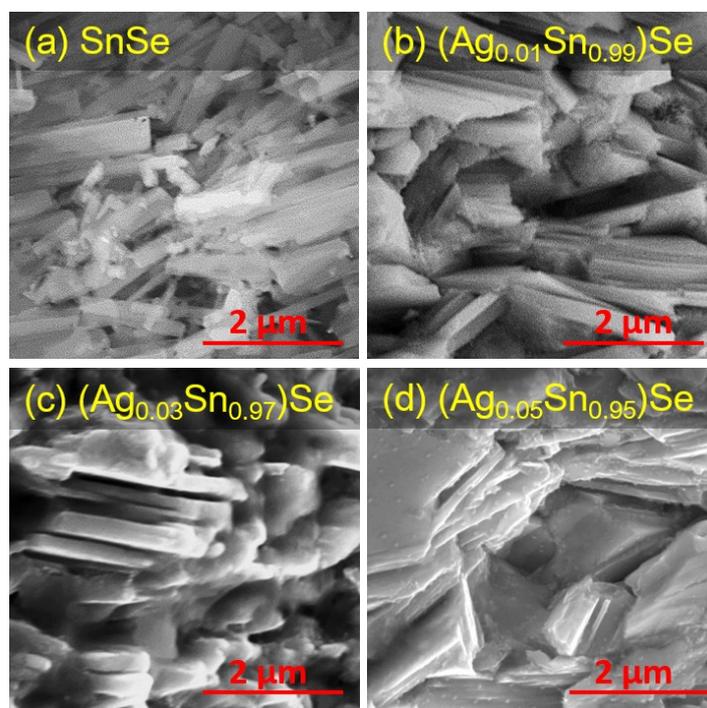
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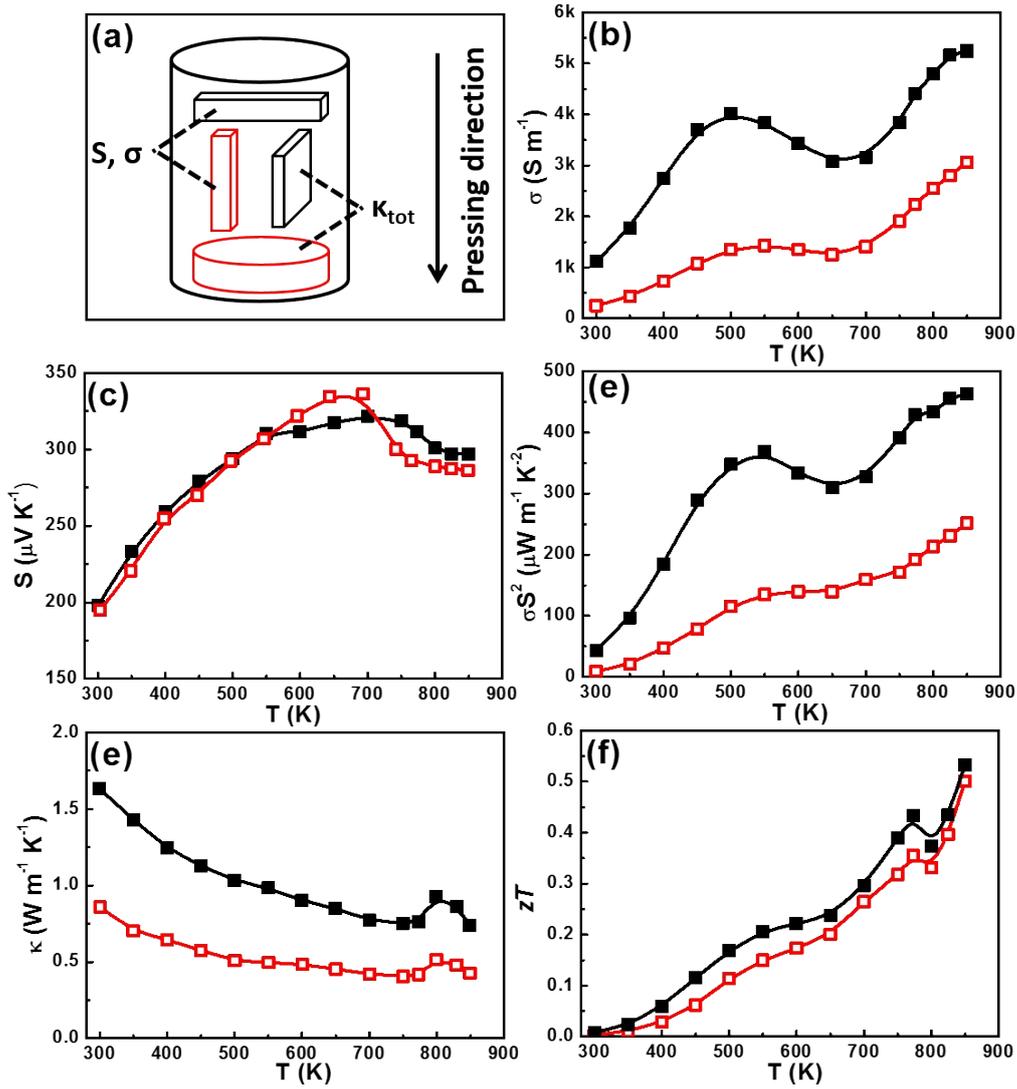
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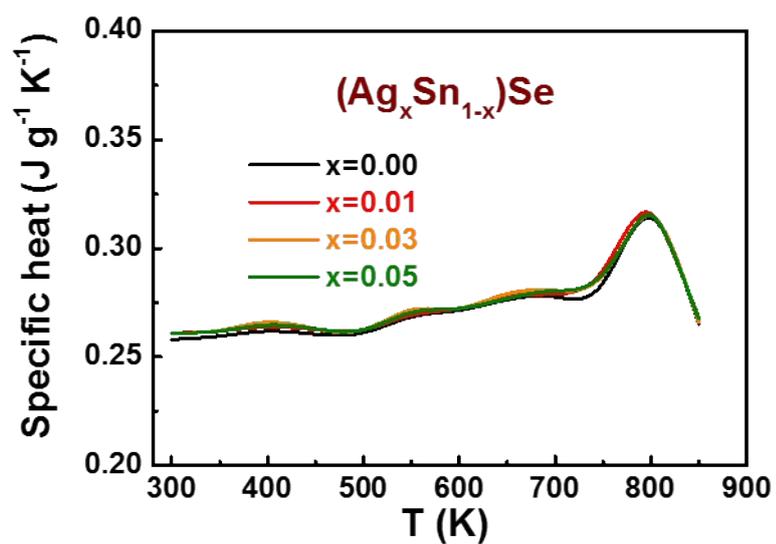
**Fig. S1.** EELS spectra of the SnSe nanocrystal: (a) *M* edges of Sn; (b) *M* edges of Se.



**Fig. S2.** The SEM micrographs of fractured surfaces of a series of samples.



**Fig. S3.** (a) The bar and plate samples used for the different measurements of the SPS synthesized pristine SnSe nanocomposite. The black and red frameworks represented the measurement direction of sample which are perpendicular and parallel to the pressing direction, respectively; Temperature dependence of (b) electrical conductivity, (c) Seebeck coefficient, (d) power factor, (e) total thermal conductivity, and (f)  $zT$  of pristine SnSe nanocomposite including two different measurement directions.



**Fig. S4.** Temperature dependence of specific heat ( $C_p$ ) of  $(\text{Ag}_x\text{Sn}_{1-x})\text{Se}$  for  $x=0, 0.01, 0.03$  and  $0.05$ . The upturn around  $800\text{ K}$  is related to the structural phase transition.

Sample	Density ( $\text{g cm}^{-3}$ )
SnSe	5.75
$(\text{Ag}_{0.01}\text{Sn}_{0.99})\text{Se}$	5.72
$(\text{Ag}_{0.03}\text{Sn}_{0.97})\text{Se}$	5.70
$(\text{Ag}_{0.05}\text{Sn}_{0.95})\text{Se}$	5.68

**Table S1.** The density of  $(\text{Ag}_x\text{Sn}_{1-x})\text{Se}$  for  $x=0, 0.01, 0.03,$  and  $0.05$ .