Electronic Supplementary Information (ESI)

Thermoelectric transport properties of pristine and Na-doped $SnSe_{1-x}Te_x$ polycrystals

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Fig. S1 shows the XRD patterns for SnSe specimens cut from the SPS-treated bulk in two directions. Obvious structure anisotropy is seen from the relative peak intensity of the plane (400) and (111), which originates from the layered crystal structure of SnSe. In this work, as has been discussed in the main article, we focused on the transport properties in the direction perpendicular to the pressure.

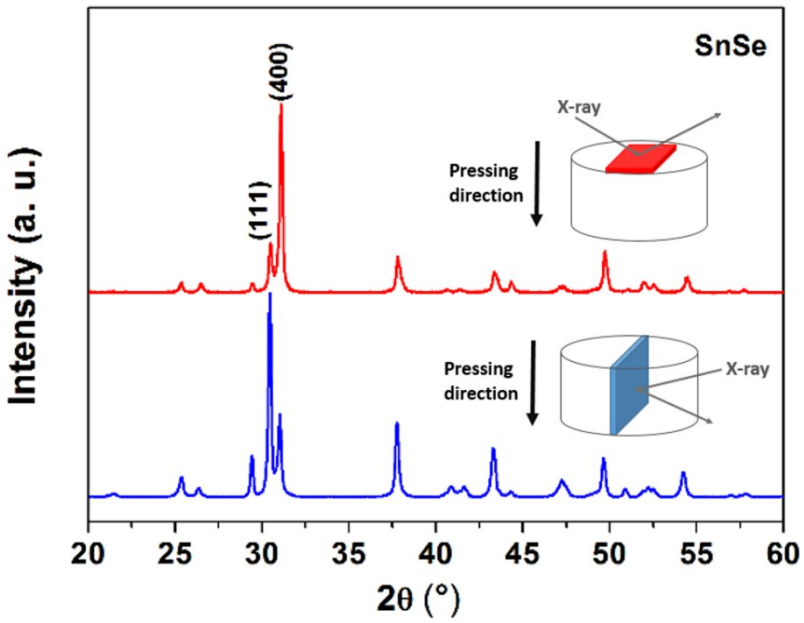

Fig. S1 XRD patterns of SnSe specimens cut perpendicular (red) and parallel (blue) to the pressing direction.

Fig. S2 shows the DSC scan patterns for SnSe and $SnSe_{0.8}Te_{0.2}$ bulk samples. For pure SnSe, apart from the known *Pnma*-*Cmcm* structure transformation around 800 K,[1] no other phase transition is indicated although previous reports observed a small peak at ~500 K which was ascribed to the melting of unreacted Sn.[2,3] For $SnSe_{0.8}Te_{0.2}$, the

Pnma-Cmcm phase transformation occurs at a lower temperature, in contrast to SnSe-SnS solid solutions.[3] In addition, small peaks were detected at ~640 K and ~670 K which still need further identification.

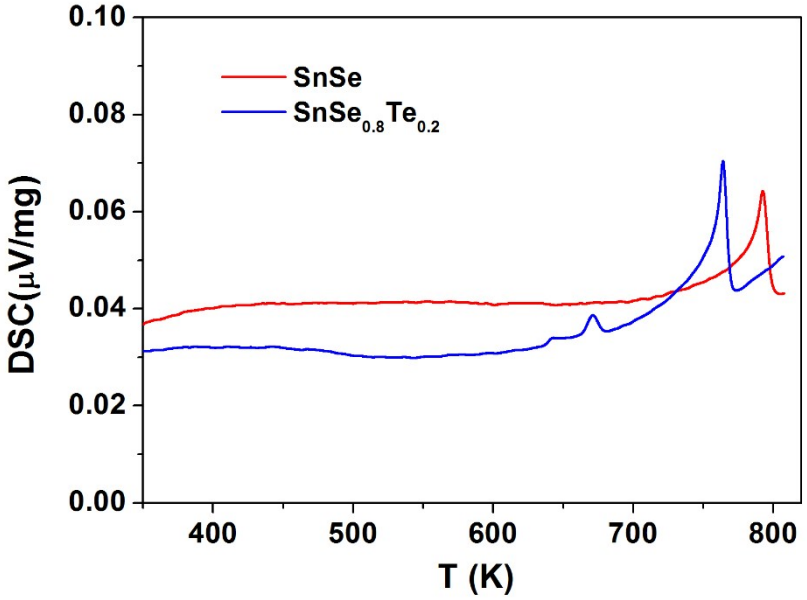

Fig. S2 DSC patterns for SnSe and $SnSe_{0.8}Te_{0.2}$ bulk samples.

References

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