Supplementary Information

Electron transport in chalcogenide perovskite $BaZrS_3$

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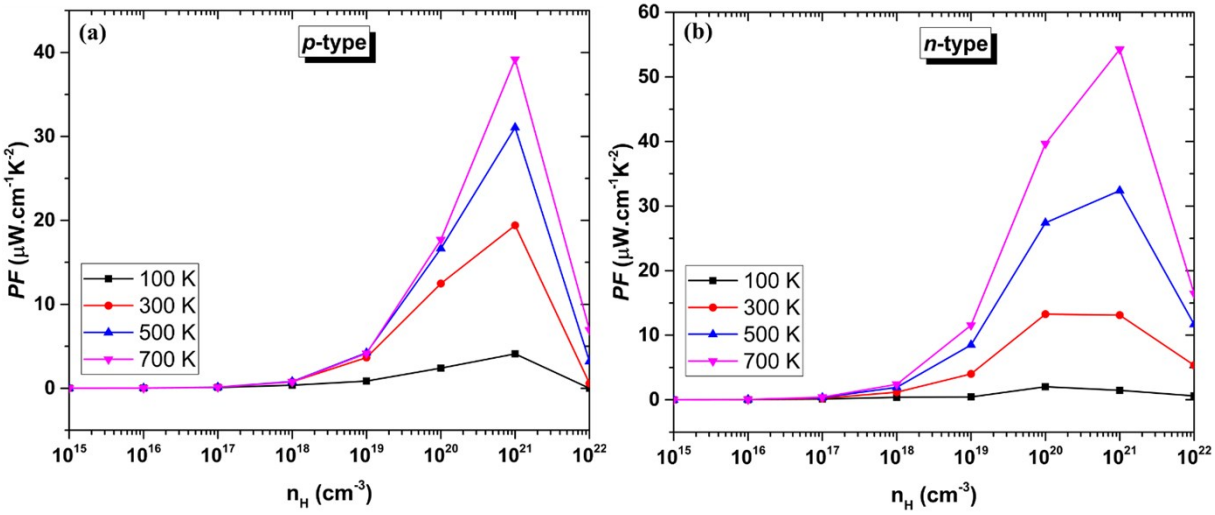

Figure S1. Power factor (*PF*) of $BaZrS_3$ against carrier concentration n_H at different temperatures. Here, we note that the highest *PF* values are achieved at 10^{21} cm^{-3}.

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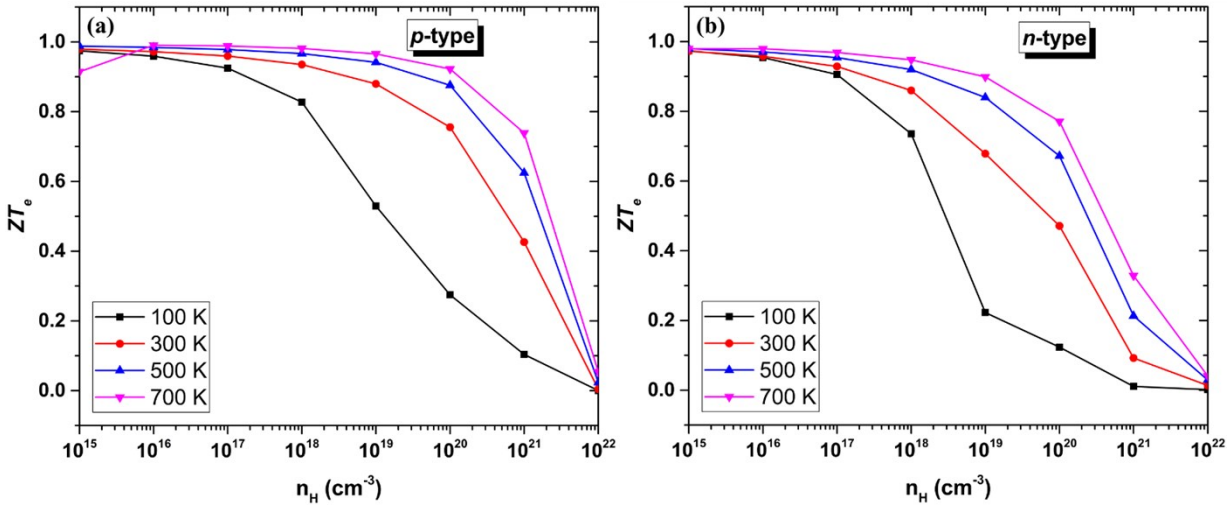

Figure S2. Upper limit of the thermoelectric figure of merit (ZT_e) against carrier concentration at different temperatures for $BaZrS_3$. The highest ZT_e values are achieved at 10^{15} cm^{-3} to 10^{18} cm^{-3} for *p*- and *n*-type doping at T > 100 K.

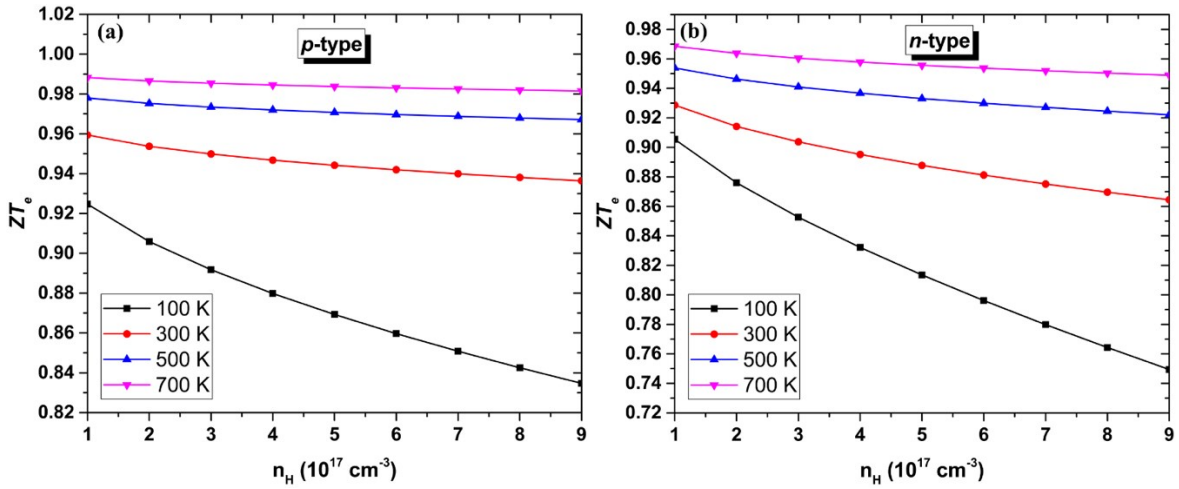

Figure S3. The variation of ZT_e with temperature at different carrier concentrations of 1×10^{17} cm^{-3} to 9×10^{17} cm^{-3} for $BaZrS_3$. The highest ZT_e values are obtained at a carrier concentration of $1\times10^{17}cm^3$ at all temperatures.

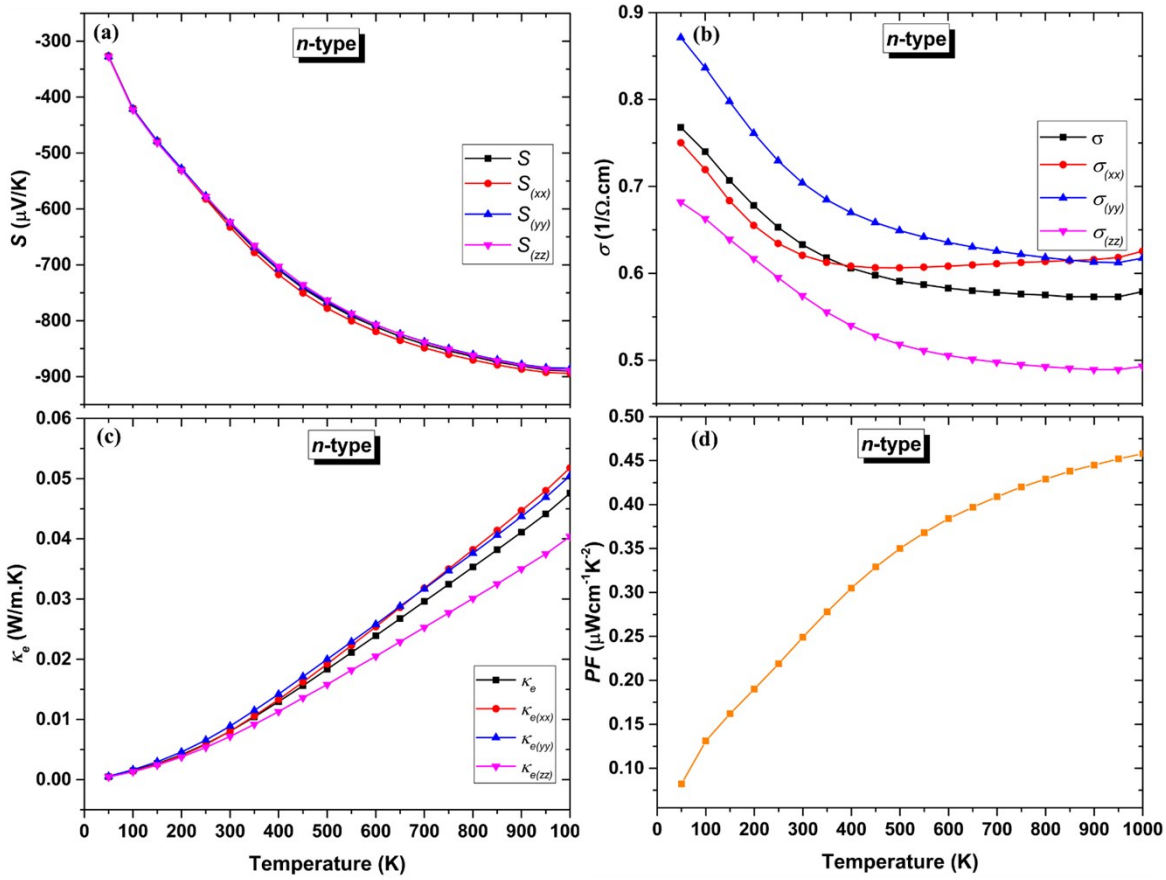

Figure S4. Transport properties against temperature for *n*-type doping at carrier concentrations of 10^{17} cm^{-3} for $BaZrS_3$. Anisotropic effects are observed for S, σ and κ_e.