

Supporting information

Effective dopants in p-type elementary Te thermoelectrics

Xin Qian,^{1,⊥} Yu Xiao,^{1,⊥} Lei Zheng,^{1*} Bingchao Qin,¹ Yiming Zhou,¹ Yanling Pei,¹
Bifei Yuan,² Shangkai Gong,¹ Li-Dong Zhao^{1*}

¹*School of Materials Science and Engineering, Beihang University, Beijing 100191, China*

²*China National Petroleum Corporation Greatwall Drilling Company, Beijing 100101, China*

[⊥] Xin Qian and Yu Xiao contributed equally to this work.

*Corresponding authors: zhenglei@buaa.edu.cn, zhaolidong@buaa.edu.cn

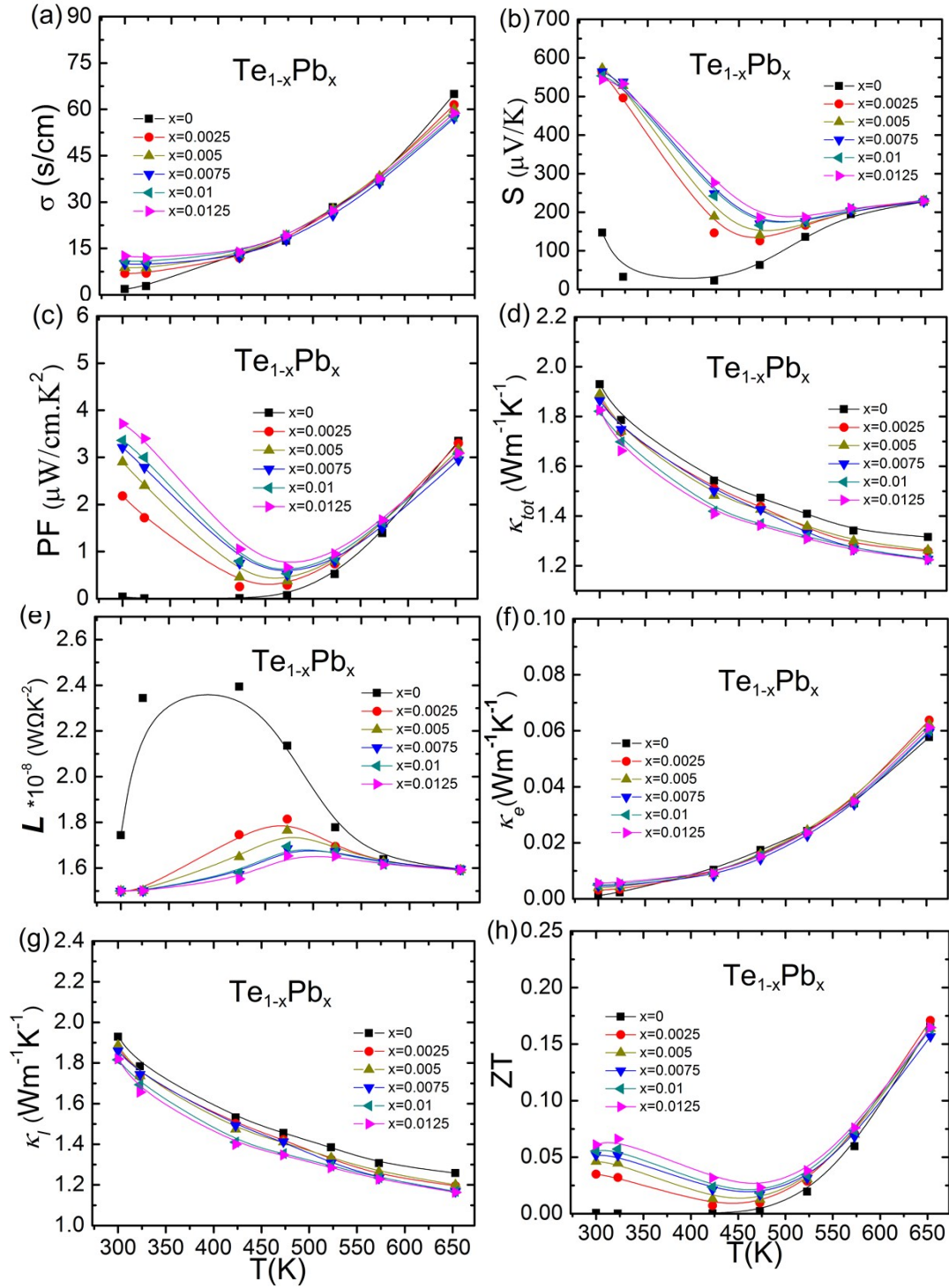


Figure S1. Temperature dependence of thermoelectric performance of $\text{Te}_{1-x}\text{Pb}_x$ (x = 0-0.0125): (a) Electrical conductivity, (b) Seebeck coefficient, (c) Power factor, (d) Total thermal conductivity, (e) Lorenz number, (f) Electronic thermal conductivity, (g) Lattice thermal conductivity, and (h) ZT value.

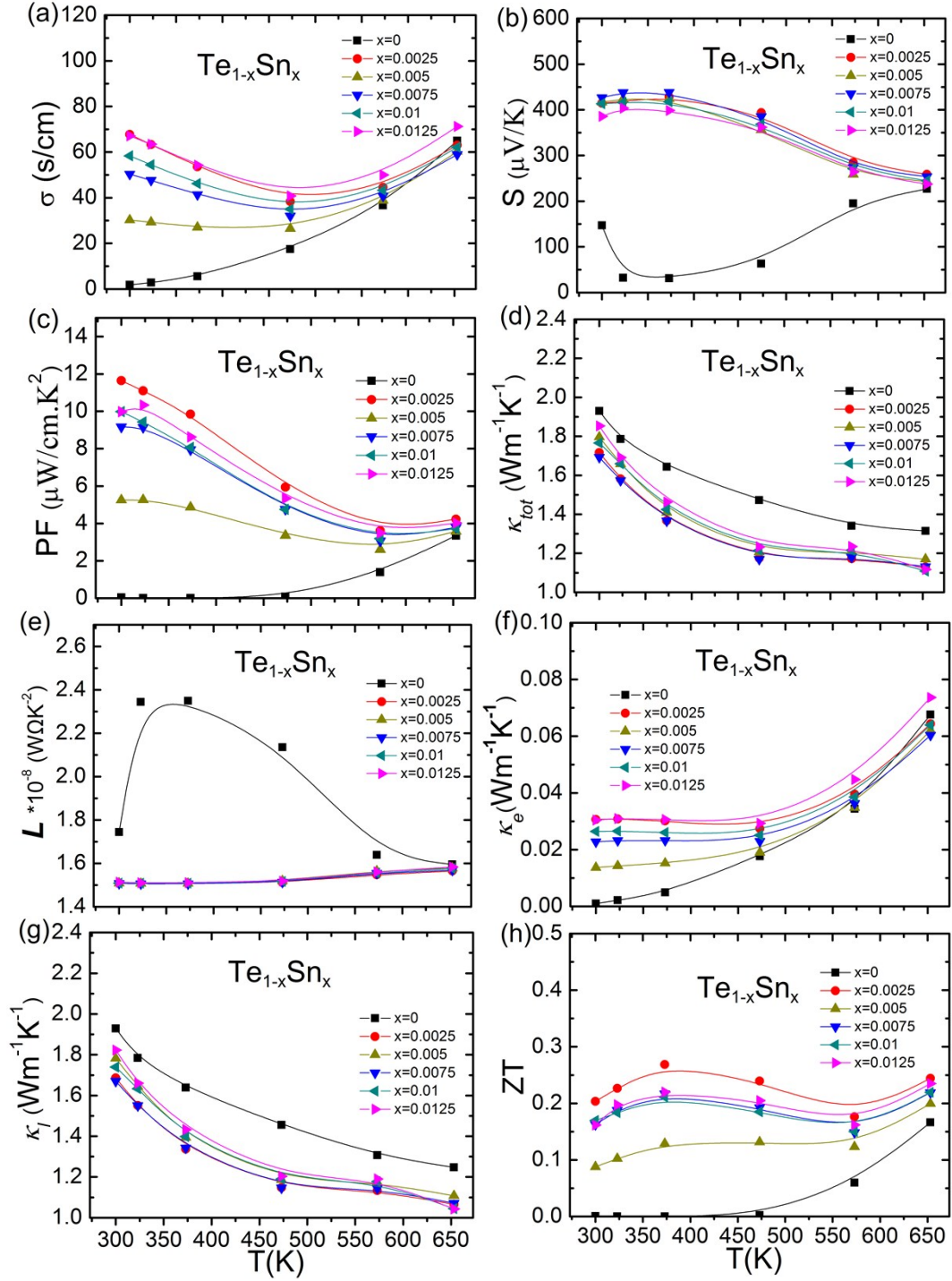


Figure S2. Temperature dependence of thermoelectric performance of $\text{Te}_{1-x}\text{Sn}_x$ ($x = 0-0.0125$): (a) Electrical conductivity, (b) Seebeck coefficient, (c) Power factor, (d) Total thermal conductivity, (e) Lorenz number, (f) Electronic thermal conductivity, (g) Lattice thermal conductivity, and (h) ZT value.

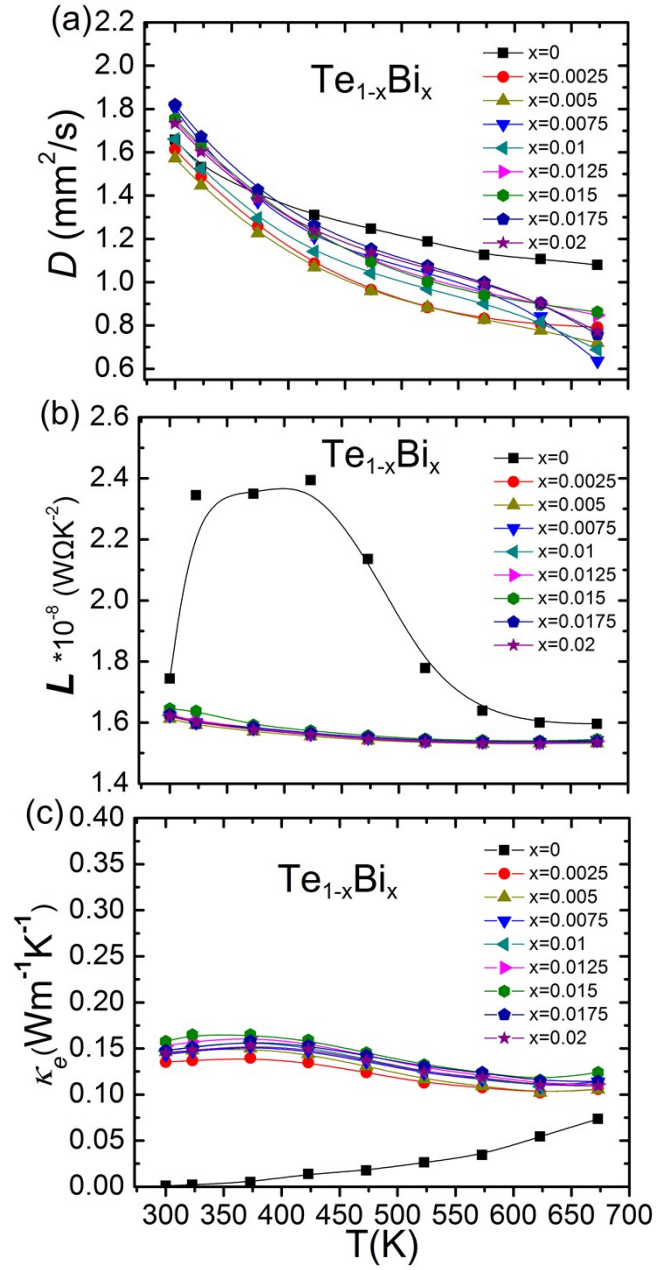


Figure S3. Temperature dependence of thermoelectric performance of $\text{Te}_{1-x}\text{Bi}_x$ (x = 0-0.02): (a) Thermal diffusivity, (b) Lorenz number, (c) Electronic thermal conductivity.

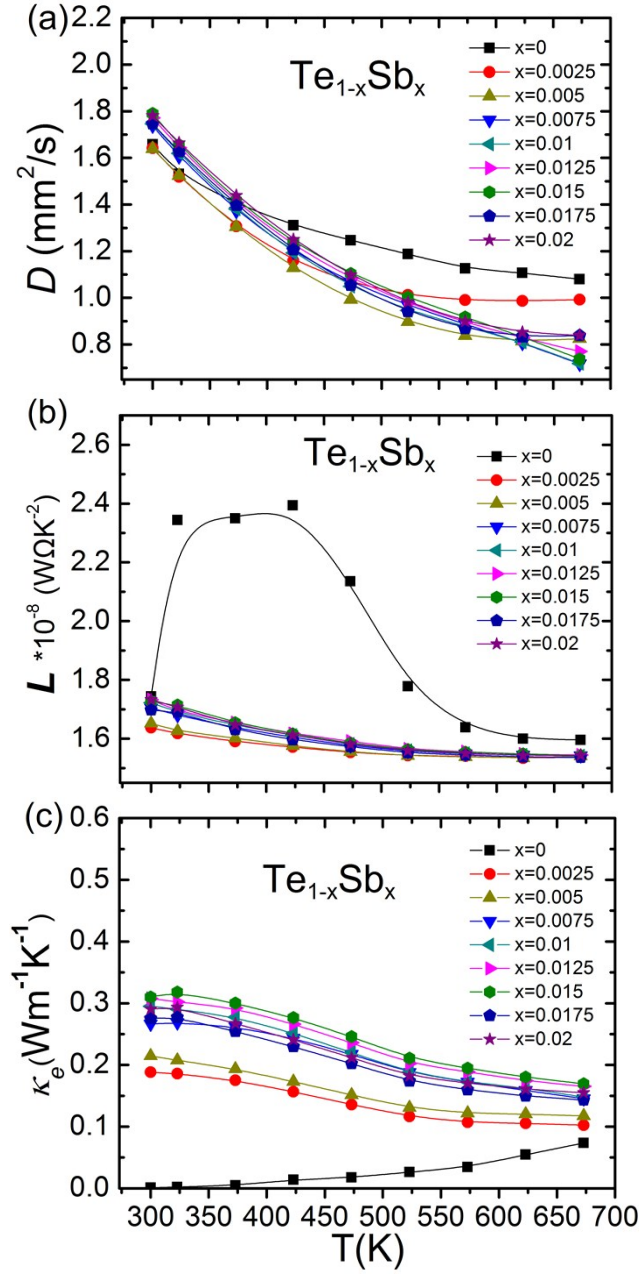


Figure S4. Temperature dependence of thermoelectric performance of $\text{Te}_{1-x}\text{Sb}_x$ ($x = 0$ -0.02): (a) Thermal diffusivity, (b) Lorenz number, (c) Electronic thermal conductivity.