Supplementary information

High performance *n*-type bismuth telluride based alloys for mid-temperature power generation

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Fig.S1 (a) zT of n-type thermoelectric materials recently researched, (b) zT of n-type Bi₂Te₃ based thermoelectric materials recently researched.

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Fig.S2 SbI₃-content dependence of electron concentration (n_H) of hot-deformed Bi₂Te_{1.9}Se_{1.1} bulk samples, together with theoretical carrier concentration.



Fig.S3 In-plane XRD patterns of the repeatedly hot-deformed 0.001SbI₃-Bi₂Te_{1.9}Se_{1.1} bulk samples, taken on the hot-deformed surfaces.

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Fig.S4 Temperature dependence of in-plane electrical conductivity (a), Seebeck coefficient (b), power factor (c), in-plane thermal conductivity (d), in-plane ambipolar thermal conductivity (e), of the hot-deformed 0.001SbI₃-Bi₂Te_{1.9}Se_{1.1} samples together with HP and HD undoped samples.