Promising thermoelectric properties in some p-type half-Heuslers

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N-type half-Heuslers are well-known due to their potential thermoelectric properties, however, our study shows that p-type half-Heusler alloys can be prepared with promising values. A series of Hf_xZr_{1-x}Co_yPt_{1-y}Sn_zSb_{1-z} samples have been synthesized, and thermoelectric properties have been measured. Our results show that the thermopower (S) increases and resistivity decreases in a good amount. In addition to the high power factors, thermal conductivity (κ) kept low values, which indicate that we can get promising value by optimizing the combination of elements.

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