

Abstract Submitted  
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**Enhanced thermoelectric properties of n-type filled skutterudite  $\text{Yb}_{0.35}\text{Co}_4\text{Sb}_{12}$  by substitution on both the Co and Sb sites** TIANYI SUN, Boston College, GANG CHEN, MIT, ZHIFENG REN, Boston College — A dimensionless thermoelectric figure of merit ( $ZT$ ) of about 1.2 was reported in  $\text{Yb}_{0.35}\text{Co}_4\text{Sb}_{12}$  at  $550^\circ\text{C}$  by ball milling and hot pressing. Through alloying on both the Co and Sb sites, we expect to achieve lower thermal conductivity while maintaining the power factor. The composition tuning is aimed for reducing the electrical conductivity and increasing the Seebeck coefficient, which will lead to a lower thermal conductivity, and ultimately higher  $ZT$ . In this report, we present the thermoelectric properties of skutterudites  $\text{Yb}_{0.35}\text{Fe}_x\text{Co}_{4-2x}\text{Ni}_x\text{Sb}_{12}$  and  $\text{Yb}_{0.35}\text{Co}_4\text{Sb}_{12-y}\text{M}_y$  ( $\text{M}=\text{Si}, \text{Ge}, \text{Sn}, \text{B}, \text{Al}, \text{Ga}, \text{In}, \text{etc.}$ ).

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