

Abstract Submitted
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Investigation of InSb-In₂XTe (X=Ge & Sn) pseudo binary alloys as potential thermoelectric materials* VIJAYABARATHI PONNAMBALAM, DONALD T. MORELLI, Dept. of Chemical Engineering and Materials Science, Michigan State University, East Lansing, MI 48824-1226, USA — Crystallizing in the zinc blende structure, InSb is known for promising thermoelectric properties with carrier mobility as high as $\sim 10^4$ cm²/V s at 300 K. However, the main drawback is its exceptionally high thermal conductivity ~ 20 W/m K at 300 K. In this regard, pseudo binaries InSb-In₂XTe (X=Ge & Sn) hold the promise of offering reduced thermal conductivity while maintaining the other thermoelectric properties intact. A series of InSb-In₂XTe type alloys has been synthesized. Thermal and electrical transport properties have been studied, and the results will be discussed with an emphasis on how the thermal conductivity is affected by the concentration of solute atoms.

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