

Abstract Submitted  
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**Ho Doped  $\text{Bi}_x\text{Sb}_y$  Nanopollcrystalline Alloys<sup>1</sup>** K.C. LUKAS, G. JOSHI, DEZHI WANG, Z.F. REN, C.P. OPEIL — Department of Physics, Boston College, Chestnut Hill, Massachusetts, 02467. Bismuth-Antimony alloys have been shown to have high ZT values below room temperature, especially for single crystals. For polycrystalline samples, impurity doping and magnetic field have proven to be powerful tools in the search for understanding and improving thermoelectric performance. Nanopollcrystalline  $\text{Bi}_x\text{Sb}_y$  doped with 1 and 3% Ho were prepared by ball milling and dc hot pressing technique. Electrical resistivity, Seebeck coefficient, thermal conductivity, carrier concentration, mobility, and magnetization are measured in a temperature range of 5-350 K and in magnetic fields up to 9 Tesla. The effects of Ho doping on the thermoelectric properties of  $\text{Bi}_x\text{Sb}_y$  in magnetic field will be discussed.

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