

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Thermoelectric Properties of CoSb₃-xSn_x¹ MICHELE D. NIELSEN, Department of Mechanical Engineering, The Ohio State University, SI HUI, Department of Mechanical Engineering, University of Michigan, CTIRAD UHER, Department of Physics, University of Michigan, JANUSZ TOBOLA, Department of Condensed Matter Physics, AGH University of Science and Technology, Krakow, Poland, JOSEPH P. HEREMANS, Department of Physics, Department of Mechanical Engineering, The Ohio State University — We substitute Sn for Sb in CoSb₃. Band structure calculations predict that Sn should be a resonant level with an energy near the top of the heavy (Co-3d) valence band. This is confirmed experimentally. Indeed, heavily Sn-doped samples show a low-temperature anomaly in their thermopower consistent with this prediction. The hole concentration, however, is too high for these materials to have a high thermopower and figure of merit.

¹This material is based upon work supported by the Department of Energy Award Number DE-PI0000012.

Michele D. Nielsen
The Department of Mechanical Engineering, The Ohio State University

Date submitted: 19 Nov 2011

Electronic form version 1.4