

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Thermoelectric Properties of p-type Yb Filled Skutterudite  $\text{Yb}_y\text{Fe}_x\text{Co}_{4-x}\text{Sb}_{12}$** <sup>1</sup> CHEN ZHOU, DONALD MORELLI, Michigan State University, XIAOYUAN ZHOU, GUOYU WANG, University of Michigan, CTIRAD UHER, University of Michigan — Since the discovery in 1995 of high thermoelectric figure of merit in skutterudite compounds, much work has been done to optimize the thermoelectric properties of these materials. As a result of this effort, n-type skutterudites are available today with figure of merit  $ZT$  approaching 1.8. By contrast, p-type skutterudites have lagged behind, with the best materials having figure of merit less than unity. In this study, we report the thermoelectric and magnetic properties of p-type Yb-filled skutterudites of nominal composition  $\text{Yb}_y\text{Fe}_x\text{Co}_{4-x}\text{Sb}_{12}$  with the aims of extending our knowledge of the filled skutterudite family and enhancing the thermoelectric properties of these p-type materials.

<sup>1</sup>Work was supported as part of the Center for Revolutionary Materials for Solid State Energy Conversion, an Energy Frontier Research Center funded by the U.S. Department of Energy, Office of Basic Energy Sciences under Award Number DE-SC0001054.

Donald Morelli  
Michigan State University

Date submitted: 10 Nov 2010

Electronic form version 1.4