

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Phase-separated-induced changes in the transport properties of Heusler compounds for thermoelectric applications** TANJA GRAF, MICHAEL SCHWALL, PETER KLAER, HANS-JOACHIM ELMERS, BENJAMIN BALKE, CLAUDIA FELSER, Johannes Gutenberg-University Mainz, Germany — The solid solution  $\text{Co}_2\text{Mn}_{1-x}\text{Ti}_x\text{Sn}$  shows a phase separation into two Heusler compounds,  $\text{Co}_2\text{MnSn}$  and  $\text{Co}_2\text{TiSn}$ . Only at the edges of the composition range a slight admixture of Mn and Ti to the respective other phase is observed. This phase separation leads to a distinct microstructure which can be altered by the composition of the material. Due to the formed phase and grain boundaries, pronounced changes in the magnetic and electronic properties take place with varying composition. The observed reduction of the thermal lattice conductivity is of particular interest for an optimization of Heusler compounds for thermoelectric applications. Thus, the concept of phase separated materials is transferred to Half-Heusler compounds with an improved thermoelectric performance.

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Date submitted: 17 Nov 2010

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