

Abstract Submitted
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Thermoelectric power and Hall coefficient measurements on $\text{Ba}(\text{Fe}_{1-x}\text{TM}_x)_2\text{As}_2$ (TM=Co and Cu)¹ PAUL C. CANFIELD, EUNDEOK MUN, NI NI, ALEX N. THALER, SERGEY L. BUD'KO, Ames Laboratory/Iowa State University — Temperature-dependent thermoelectric power (TEP) data on $\text{Ba}(\text{Fe}_{1-x}\text{TM}_x)_2\text{As}_2$ (TM=Co and Cu), complemented by the Hall coefficient data on the samples from the same batches, have been measured. For Co doping we clearly see a change in the temperature-dependent TEP and Hall coefficient data when the sample is doped to sufficient e (the number of extra electrons associated with the TM doping) so as to stabilize low-temperature superconductivity. Remarkably, a similar change is found in the Cu-doped samples at a comparable e value, even though these compounds do not superconduct. These changes possibly point to a significant modification of the Fermi surface/band structure of $\text{Ba}(\text{Fe}_{1-x}\text{TM}_x)_2\text{As}_2$ at small electron doping, that in the case of Co doping is just before, and probably allows for, the onset of superconductivity. These data are also consistent with recent ARPES results showing changes in Fermi-surface at similar e values.[1] // [1]C. Liu et al. arXiv:0910.1799 (2009)

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