

Abstract Submitted
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Thermoelectric power of $\text{Ba}(\text{Fe}_{1-x}\text{Ru}_x)_2\text{As}_2$ and $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$: possible changes in Fermi surface with and without changes in electron count¹ HALYNA HODOVANETS, EUNDEOK MUN, ALEX N. THALER, SERGEY L. BUD'KO, PAUL C. CANFIELD, Ames Laboratory/ Iowa State University, Ames, IA 50011, USA — Temperature-dependent, in-plane, thermoelectric power (TEP) data are presented for $\text{Ba}(\text{Fe}_{1-x}\text{Ru}_x)_2\text{As}_2$ ($0 \leq x \leq 0.36$) single crystals. The previously outlined by resistivity and susceptibility $x - T$ phase diagram for this system is confirmed. The analysis of TEP evolution with Ru-doping suggests two concentrations, $x \sim 7\%$ and $x \sim 30\%$ of Ru-doping levels, near which significant changes in the electronic structure, correlations and/or scattering occur. These results are compared with an extended set of TEP data for the electron doped $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$ ($0.13 \leq x \leq 0.42$) single crystals. An analysis of TEP data for Co-doping in the overdoped region suggests two more concentrations, $x \sim 11\%$ and $x \sim 22\%$, in addition to $x \sim 2\%$ previously reported, where Lifshitz transition might occur. These data for Co-doping were recently confirmed by ARPES measurements.

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