

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Phase Transitions in CuAs-based $K_xSr_{1-x}Cu_4As_2$ System BING LV, BERND LORENZ, MELISSA GOOCH, FENG CHEN, LIANGZI DENG, CHING-WU CHU¹, Dept. of Physics and TcSUH, University of Houston — Inspired by the superconductivity with a $T_c \sim 3.5$ K reported by Han et al. in Cu-based $LiCu_2P_2$, the Cu-based compound $SrCu_4As_2$, which has a more complex CuAs layers structure sandwiched by Sr layers, was synthesized and characterized. The magnetoresistance measurements show two anomalies around ~ 140 K and ~ 60 K, respectively, which is also consistent with the results of specific heat measurement. Systematically studies of K-doping into $SrCu_4As_2$ system are carefully investigated at ambient and high pressures and no superconductivity has been found in the $K_xSr_{1-x}Cu_4As_2$ system down to 2K, although superconductivity might occur at lower temperature in this system. The overall pressure and doping effects on the magnetic and transport properties of the compounds will be presented and discussed.

¹also at: Lawrence Berkeley National Laboratory

Bing Lv
Dept. of Physics and TcSUH, University of Houston

Date submitted: 18 Nov 2010

Electronic form version 1.4