Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

ARPES studies of the AFe2Se2 (A=K, Rb, Cs) iron-based superconductors MING YI, Stanford University, D.H. LU, SLAC National Accelerator Laboratory, Z.K. LIU, S. RIGGS, J.-H. CHU, Stanford University, B. LV, University of Houston, S.-K. MO, Lawrence Berkeley National Laboratory, M. HASHIMOTO, SLAC National Accelerator Laboratory, R.G. MOORE, Stanford Institute for Materials and Energy Sciences, Z. HUSSAIN, Lawrence Berkeley National Laboratory, I.R. FISHER, Stanford University, C.W. CHU, University of Houston, Z.-X. SHEN, Stanford University — The AFe2Se2 (A=K, Rb, Cs) family is one of the newest iron-based superconductors that has attracted considerable attention in the pnictide community due to its many differences with the other iron pnictide compounds, including a very large magnetic moment indicative of strong electron correlation, insulating behavior in non-superconducting compounds, and even in superconducting compounds resistivity shows a bad metallic behavior that crosses over into insulating behavior at higher temperatures. Despite such marked differences with the other pnictides, Tc in AFe2Se2 can be as high as 30K. Such interesting properties suggest that the AFe2Se2 superconductors may be close to a Mott insulating state, and many theoretical efforts have followed in this regard. Here we present detailed angle-resolved photoemission studies of AFe2Se2 to address the issue of whether these materials are indeed close to a Mott insulating state.

Ming Yi
Stanford University

Date submitted: 27 Nov 2011 Electronic form version 1.4