Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Angle Resolved Photoemission Spectroscopy Study on Layered Oxy-pnictide BaTi2As2O HAICHAO XU, MIN XU, QINGQIN GE, RUI PENG, YAN ZHANG, Fudan University, XIANGFENG WANG, XIANHUI CHEN, USTC, M. ARITA, K. SHIMADA, Hisor, DONGLAI FENG, Fudan University, FUDAN UNIVERSITY COLLABORATION[1], USTC COLLABORATION[2], HISOR COLLABORATION[3] — Recently, superconductivity has been discovered in $Ba_{1-x}Na_xTi_2Sb_2O$, a titanium-based oxy-pnictide with an anti-CuO_2 type Ti_2O plane and a CDW/SDW anomaly at 54K. The isostructured $BaTi_2As_2O$, where signs of CDW/SDW at 200K has been observed, could be viewed as one of the parent compounds of this new family of superconductors. Here we report the Angle Resolved Photoemission Spectroscopy Study on $BaTi_2As_2O$. Parallel sections were found in Fermi surface structure, indicating possible nesting condition. The orbital character of bands supports the important role of Ti-Ti direct interaction. No abrupt change was observed at the critical temperature; however, spectral weight change takes place at wide energy scale both above and below the critical temperature, revealing the strong electron-lattice coupling effect in this system.

[1]Department of Physics, Fudan University, P.R. China
[2]Hefei National Laboratory for Physical Science at Microscale and Department of Physics, University of Science and Technology of China
[3]Hiroshima Synchrotron Radiation Center, Japan

Haichao Xu
Fudan University

Date submitted: 19 Dec 2012 Electronic form version 1.4