

## Distinct Fermi Surface Topology and Isotropic Gap Symmetry in $A_x\text{Fe}_{2-y}\text{Se}_2$ Superconductor (LT26)

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High resolution angle-resolved photoemission measurements have been carried out to study the electronic structure and superconducting gap of the newly discovered  $A_x\text{Fe}_{2-y}\text{Se}_2$  [ $A=\text{K},(\text{Tl},\text{K}),(\text{Tl},\text{Rb})$ ] superconductor. Distinct Fermi surface topology consists of two electronlike Fermi surface sheets around the  $\Gamma$  point was revealed in all different samples, which indicates this is a common Fermiology in  $A_x\text{Fe}_{2-y}\text{Se}_2$ . Both Fermi Surface around  $\Gamma$  and M point show nearly isotropic gap of 8meV and 12meV respectively. The information on Fermiology and superconducting gap will provide key insights to understand the superconductivity mechanism in iron-based superconductors.<sup>1 2</sup>

<sup>1</sup>D. Mou, S.Liu, J. He, et. al, Phys. Rev. Lett. **106**, 107001 (2011).

<sup>2</sup>L. Zhao, D. Mou, S. Liu, et. al, arXiv:1102.1057v1, Phys. Rev. B, Rapid Communications, in press.