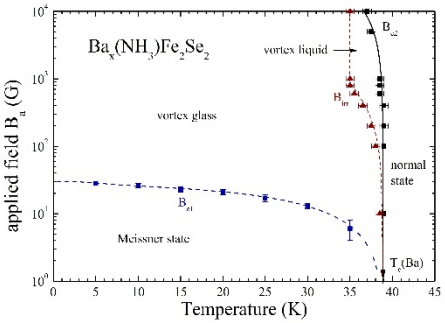
Department of ……

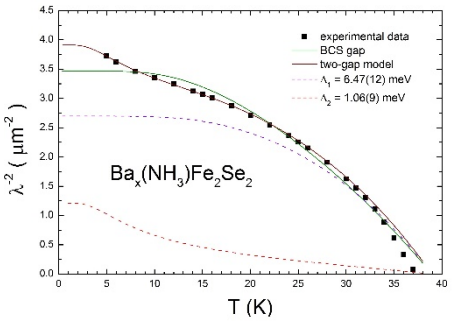
Study the electronic structure and mechanism of unconventional superconductivity

Superconductivity studies are always strongly related to energy saving green technologies. Especially unconventional superconductors, i.e. iron-chalcogenides, have resulted to many interested new understandings of electronic properties of matters. Our lab focus on measurements by tunnel diode oscillator on iron-based superconducting single crystals.

Techniques used in study

Chemical vapor/liquid transport crystal growth
Low temperature transport measurement
Magnetic measurement
RF electronics





By synthesizing high quality $Ba_x(NH_3)Fe_2Se_2$ superconductor we determined its superconducting phase diagram and its two-gap behavior of supercurrent density.

Yung-Yuan Hsu, Associate Professor
Lab of Correlated Electrons
Department of Physics
Yungyuan.hsu@gmail.com

Background:

Ph. D. in Physics, National Tsing-Hua University

Funding:

Ministry of Science and Technology
National Taiwan Normal University

Publications

- Y.Y. Hsu, Y.B. Li, S.T. Jian, G.K. Li, M.C. Yang, "Two-gap superconducting properties of alkaline-earth intercalated $A_x(NH_3)Fe_2Se_2$ (A = Ba, Sr)", Supercond. Sci. Technol. 29, 035005 (2016).
- T.I. Hung, L.A. Chen, C.H. Huang, C.Y. Lin, C.W. Chen, Y.B. You, S.T. Jian, M.C. Yang, Y.Y. Hsu, J.C. Ho, Y.Y. Chen, H.C. Ku, "Low temperature heat capacity of layered superconductors SrNi2Ge2 and SrPd2Ge2", J. Low Temp. Phys. 171, 148 (2013).