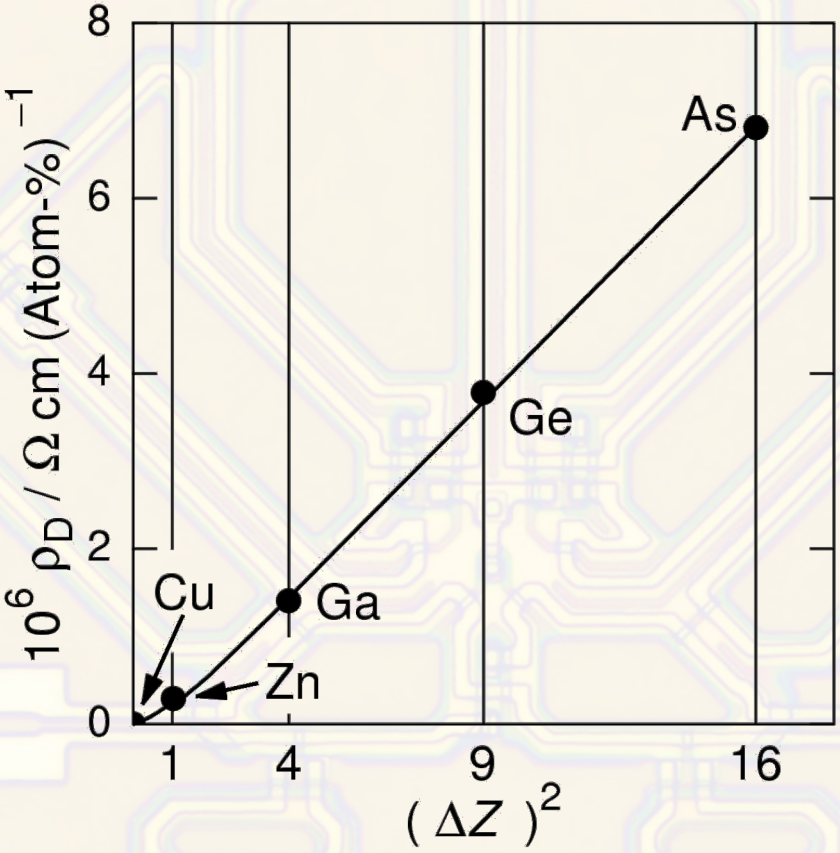
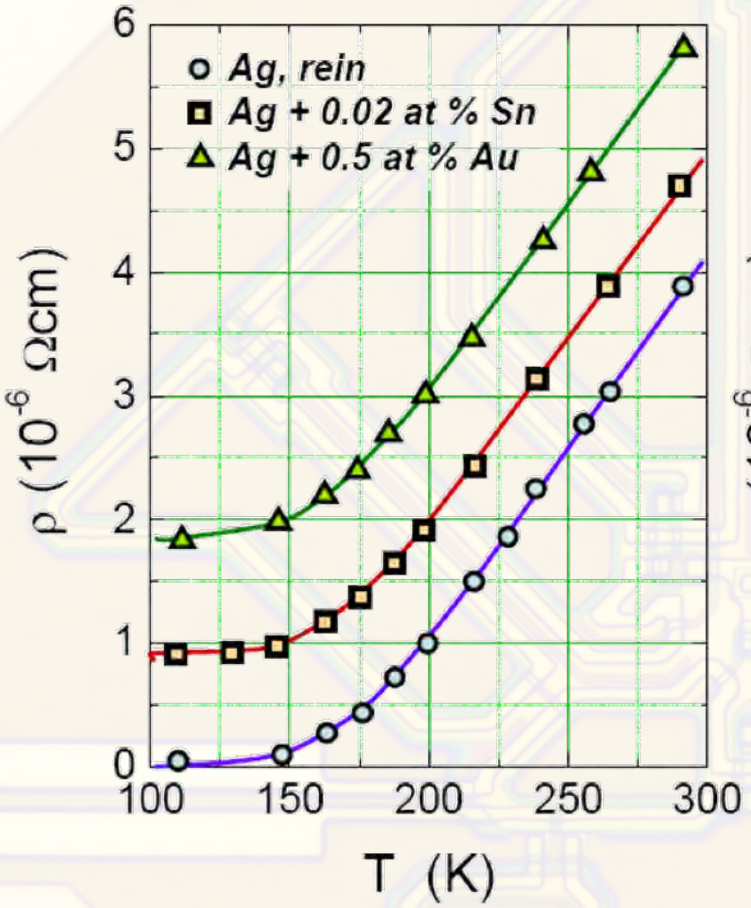
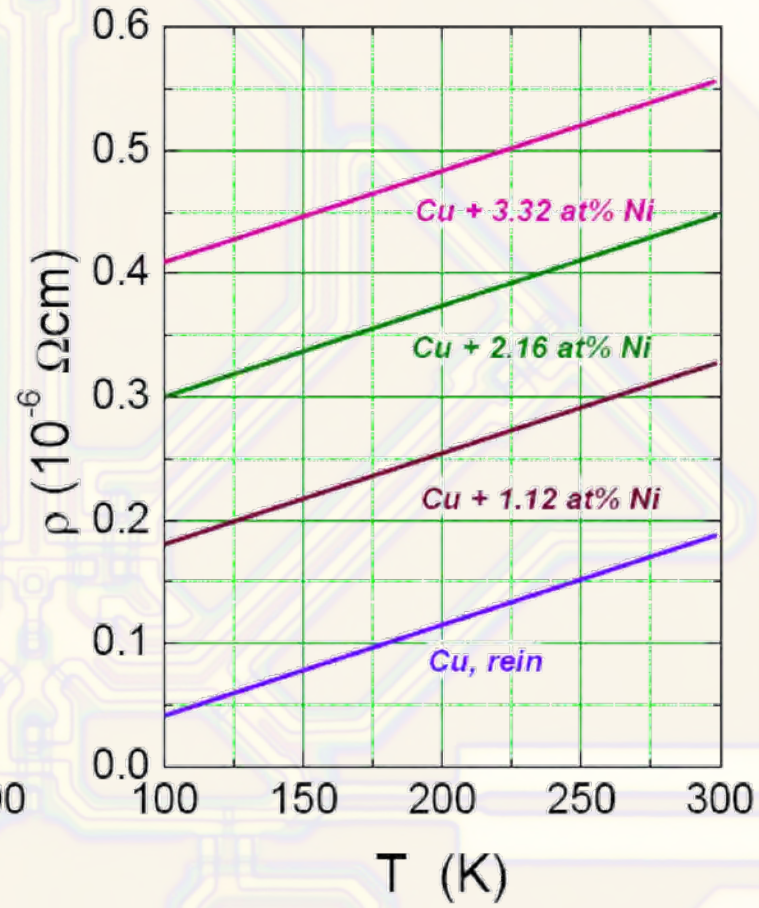
Residual Resistance of Gold with Different Impurities

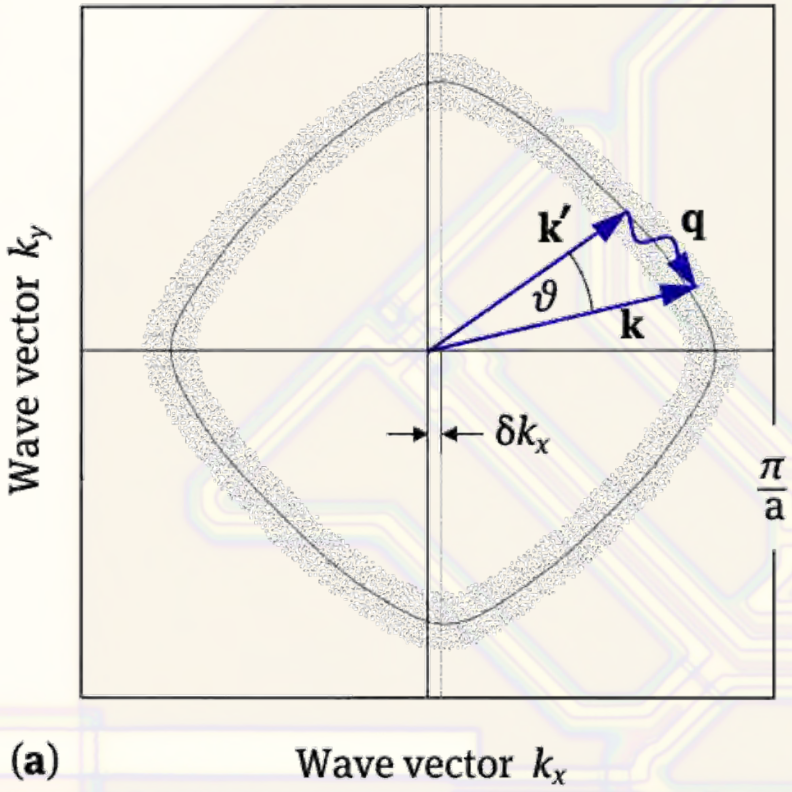


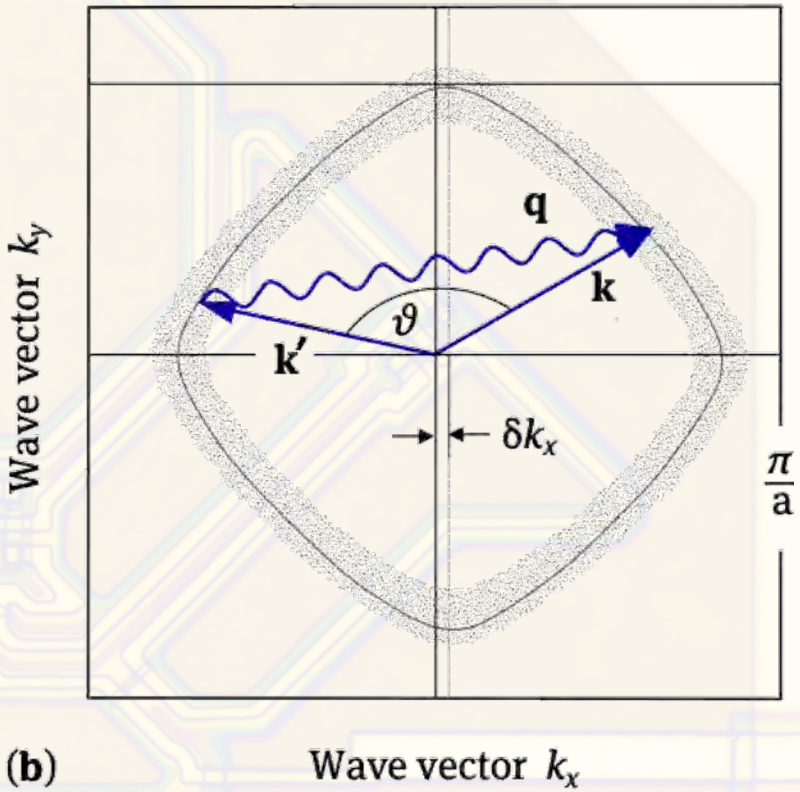
Temperature Dependence of Electrical Conductivity



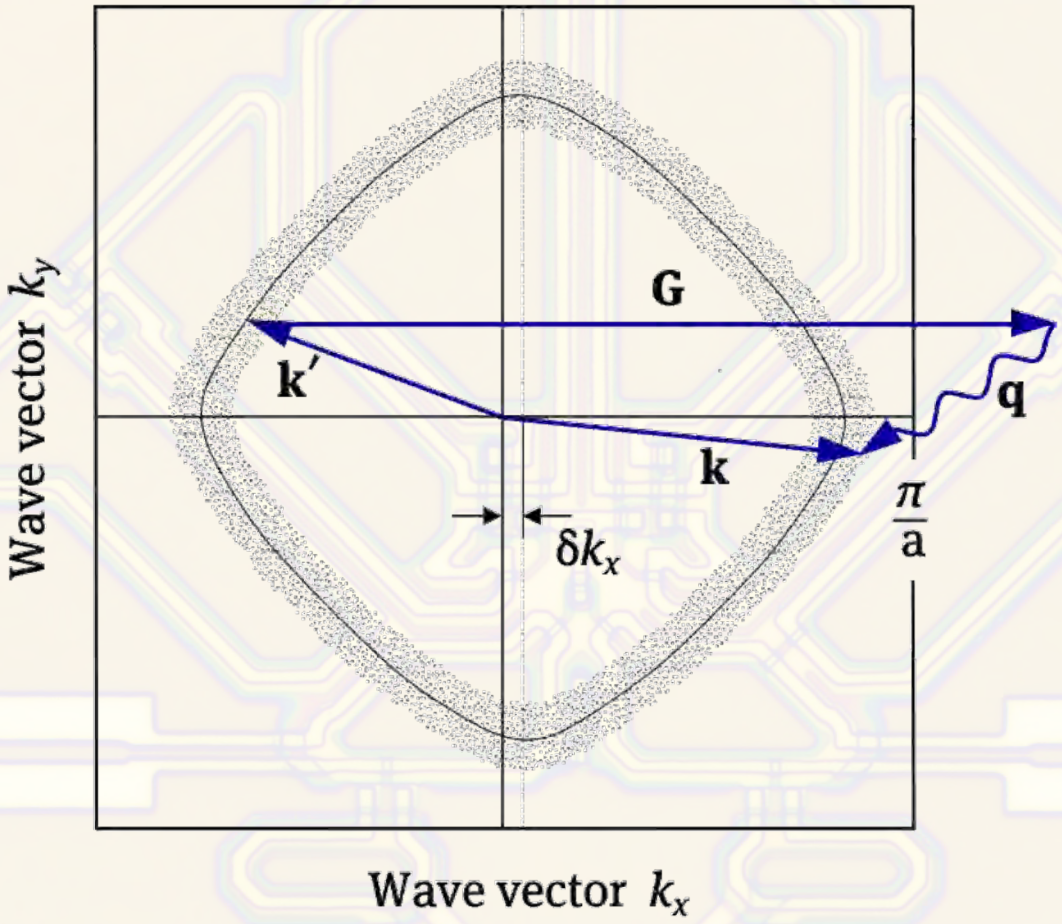


Normal Processes in Reduced Zone Scheme

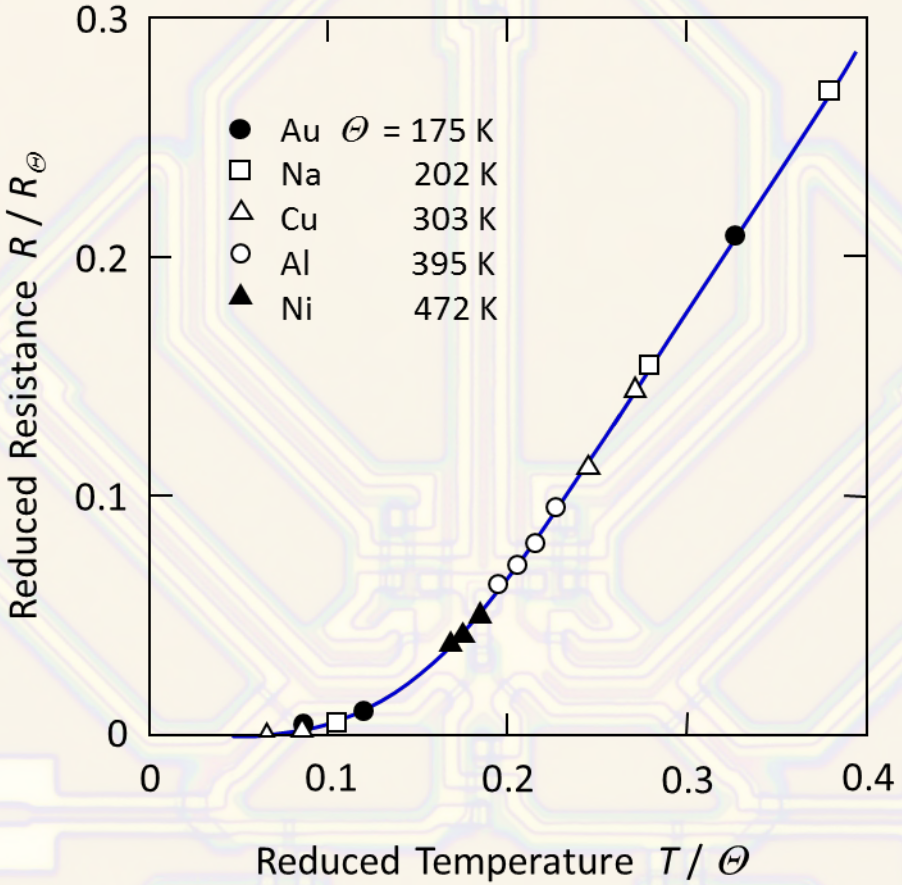




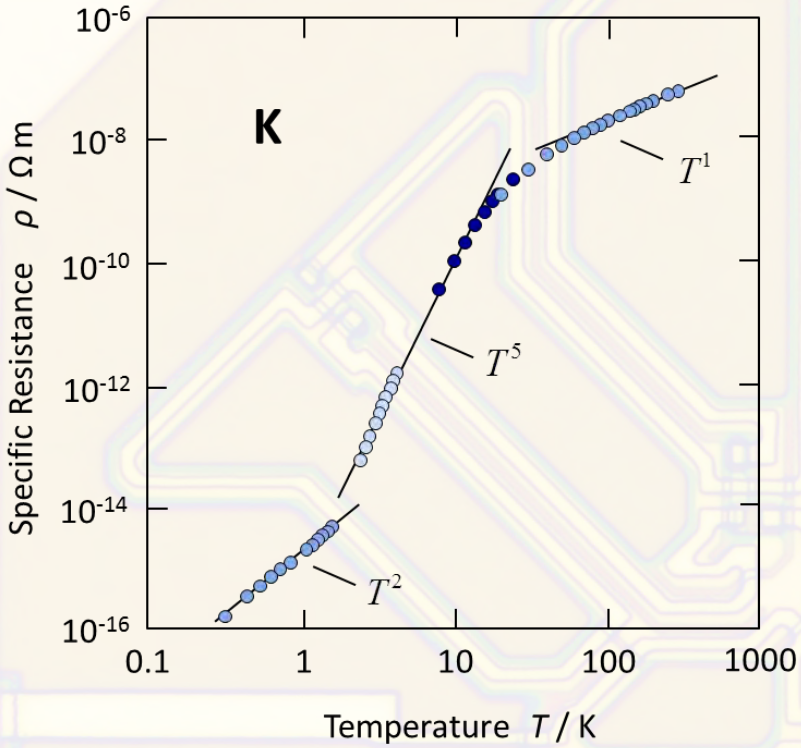
Umklapp-Process in Reduced Zone Scheme

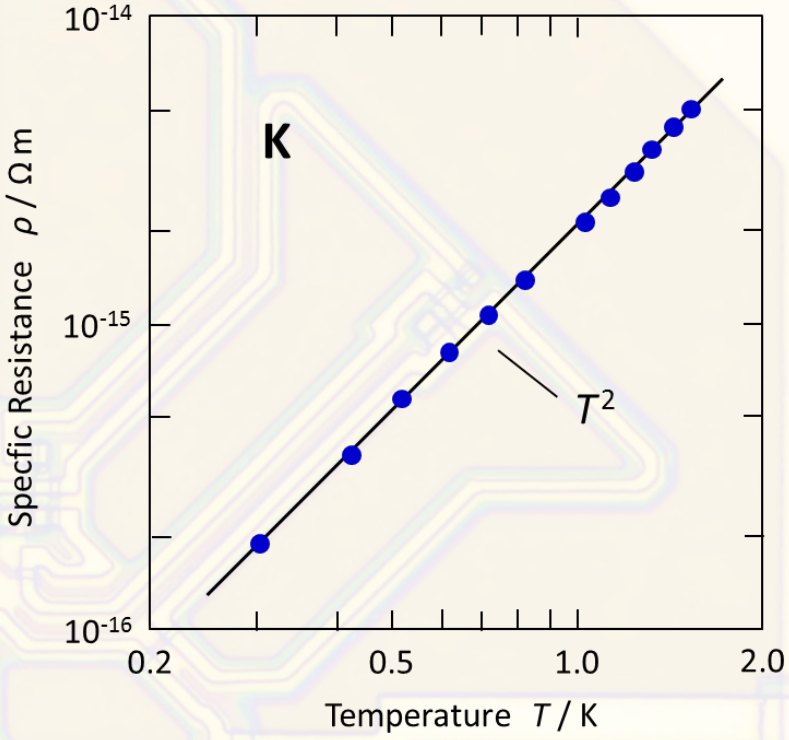


Electrical Resistance of Different Metals

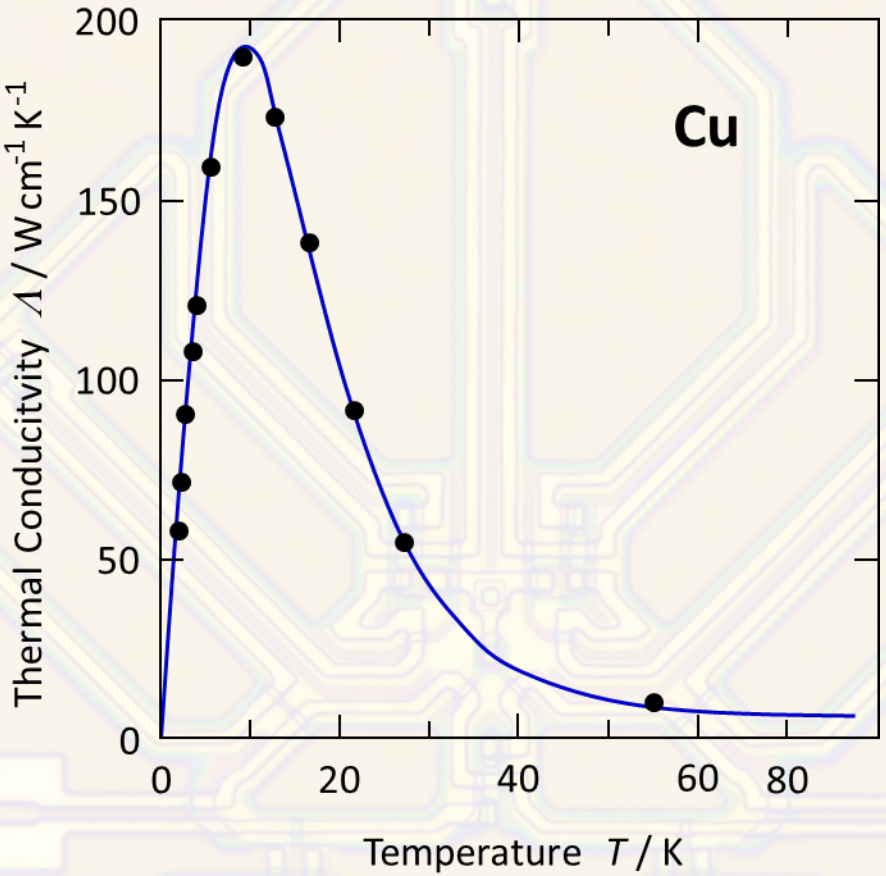


Evidence for Electron-Electron Scattering

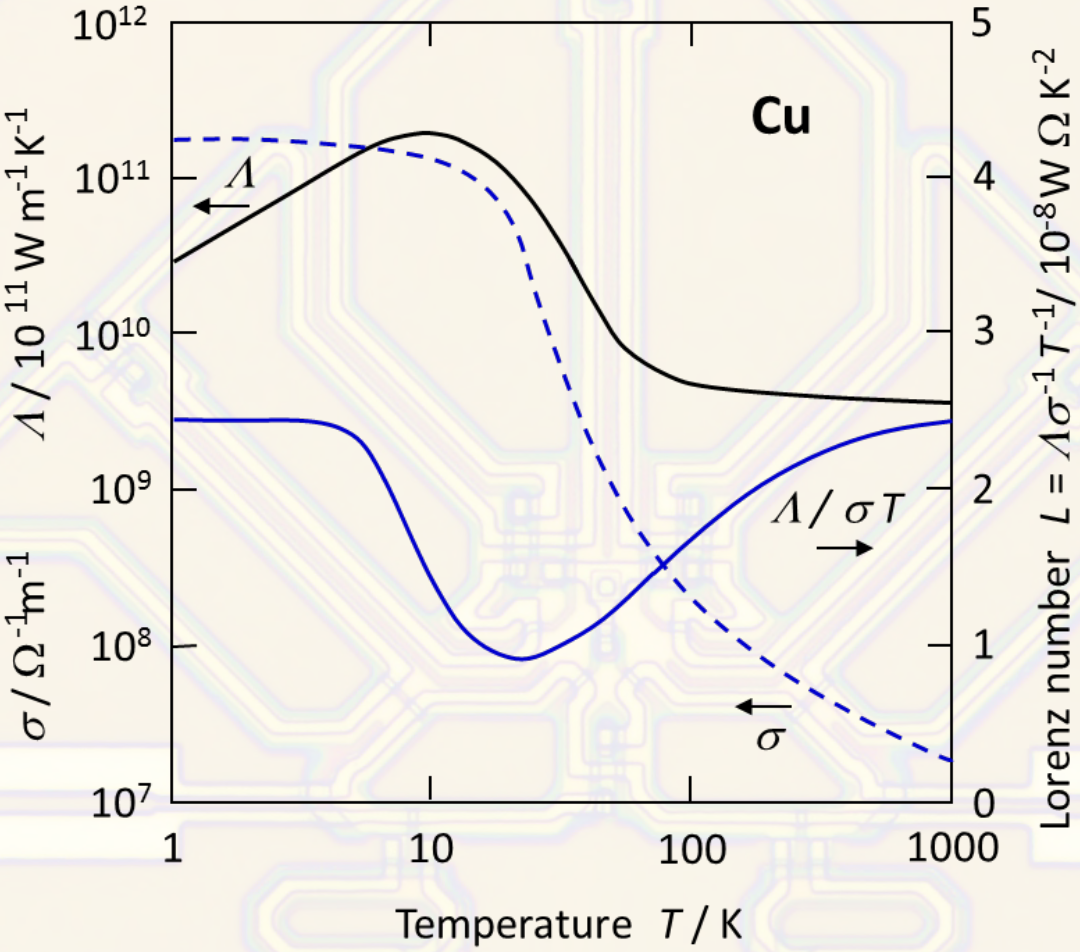




Thermal Conductivity of Copper

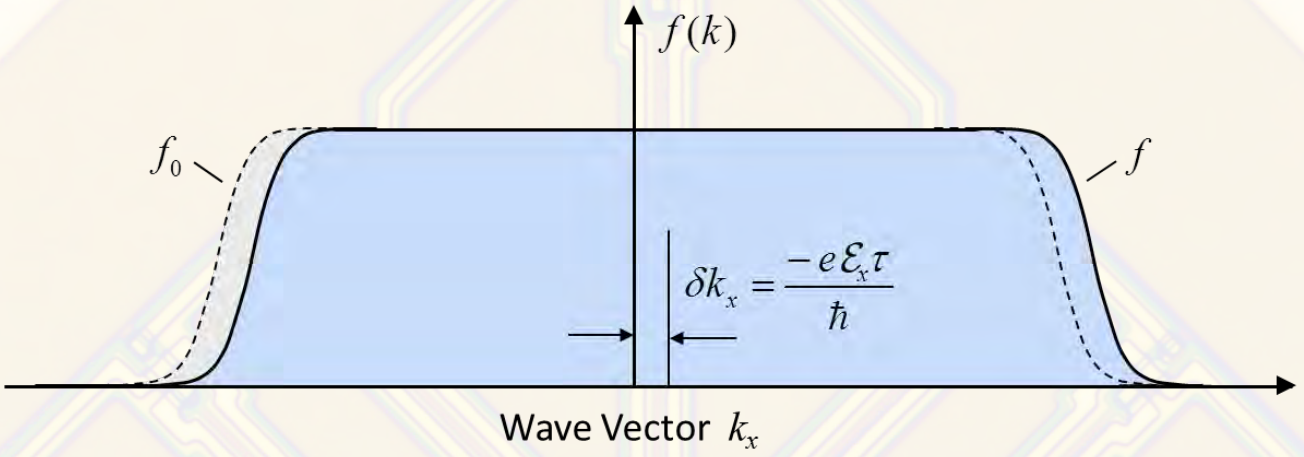


Comparison of Electrical and Thermal Conductivity of Copper

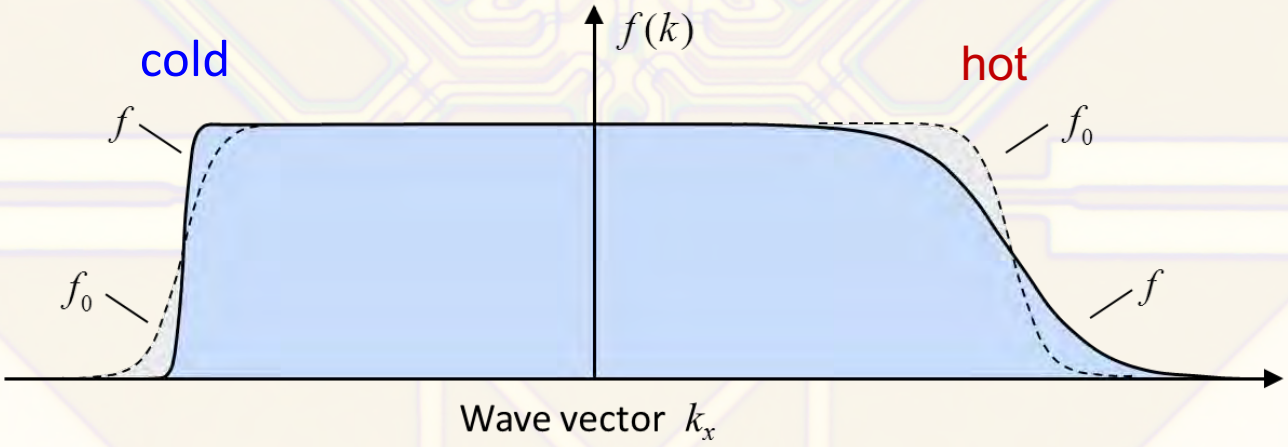


Comparison of Electrical and Thermal Conductivity of Copper

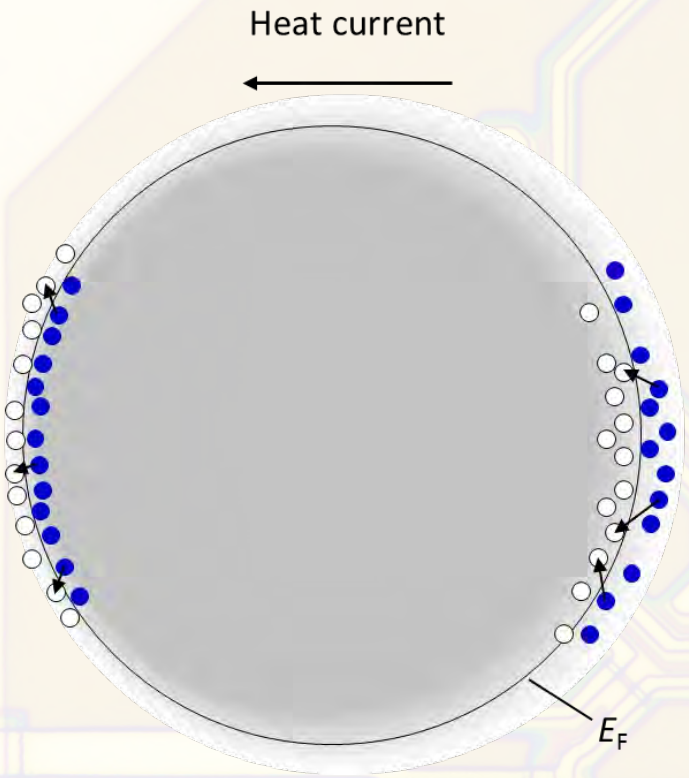
Electric Field

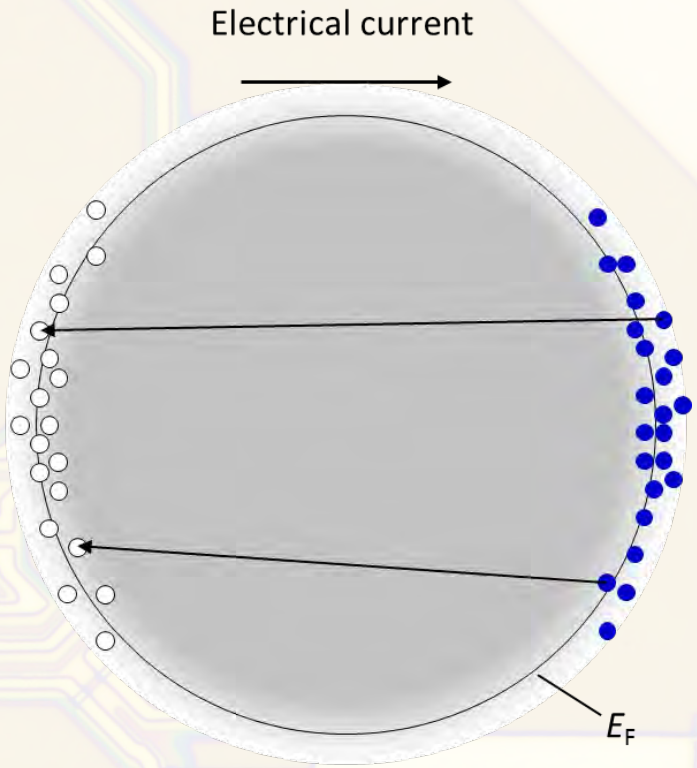


Thermal Gradient



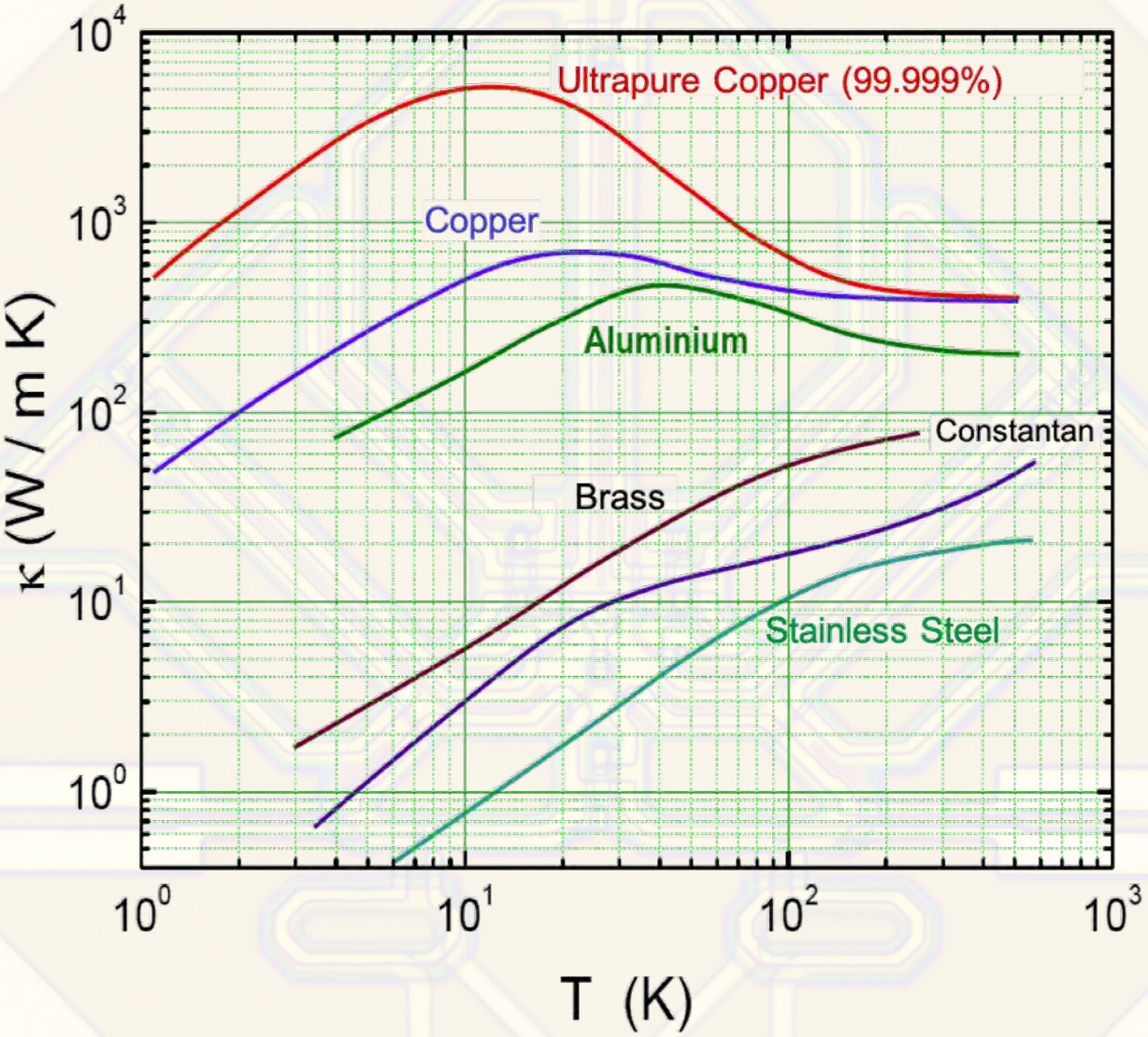
Comparison of Electrical and Thermal Conductivity of Copper





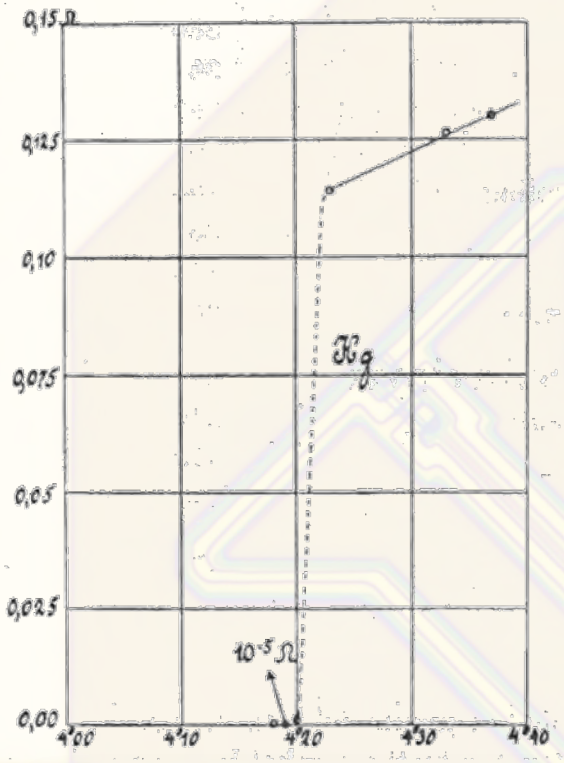
cold hot

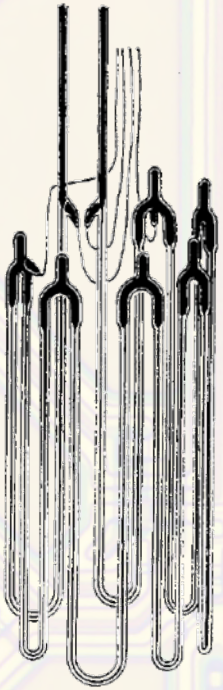
Thermal Conductivity of Different Metals

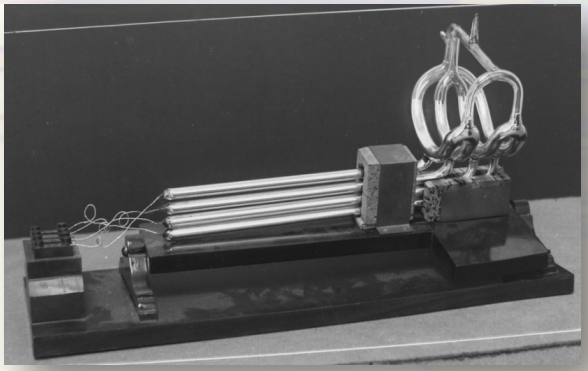


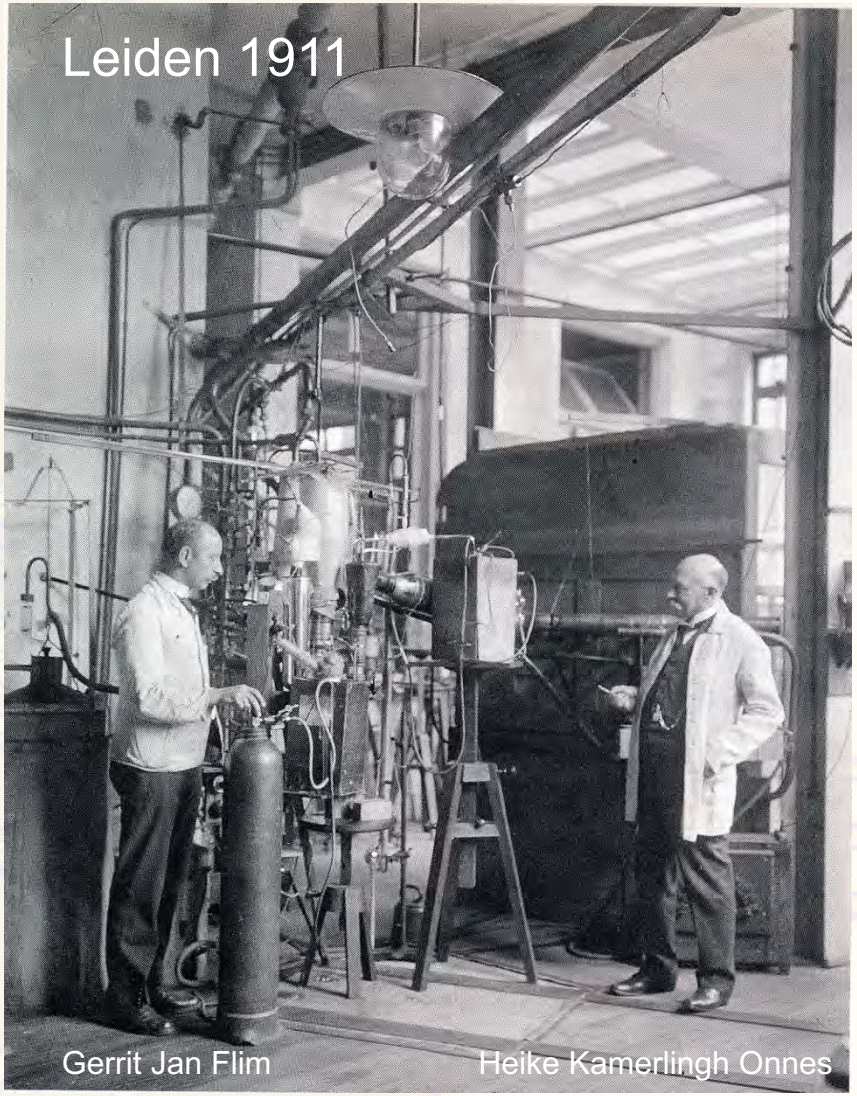
Discovery of Superconductivity

23 May 1911

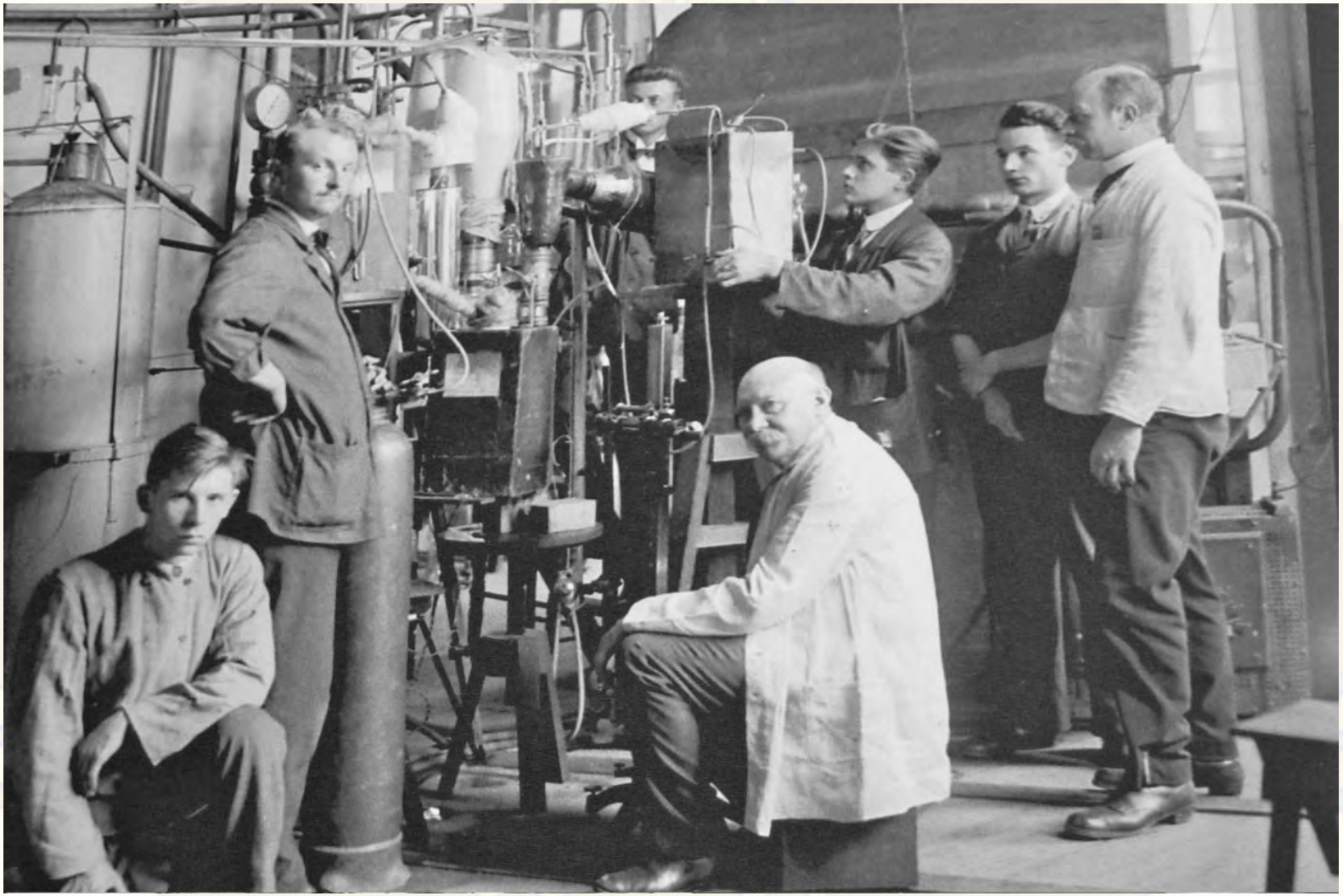




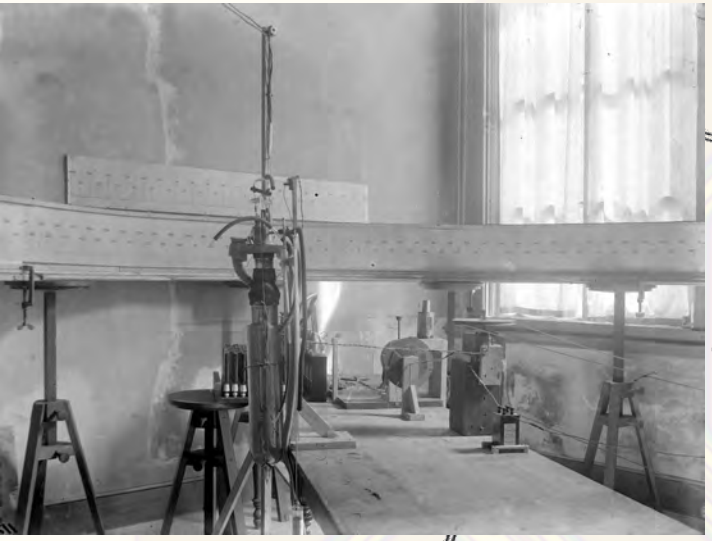




Discovery of Superconductivity



Discovery of Superconductivity



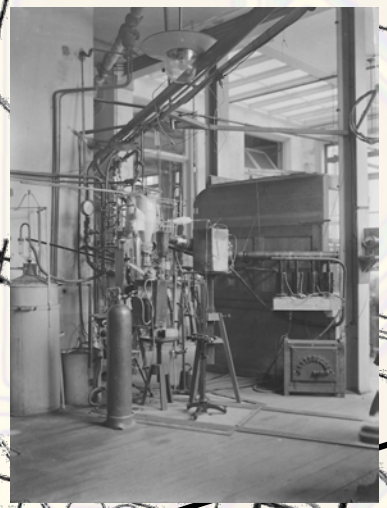
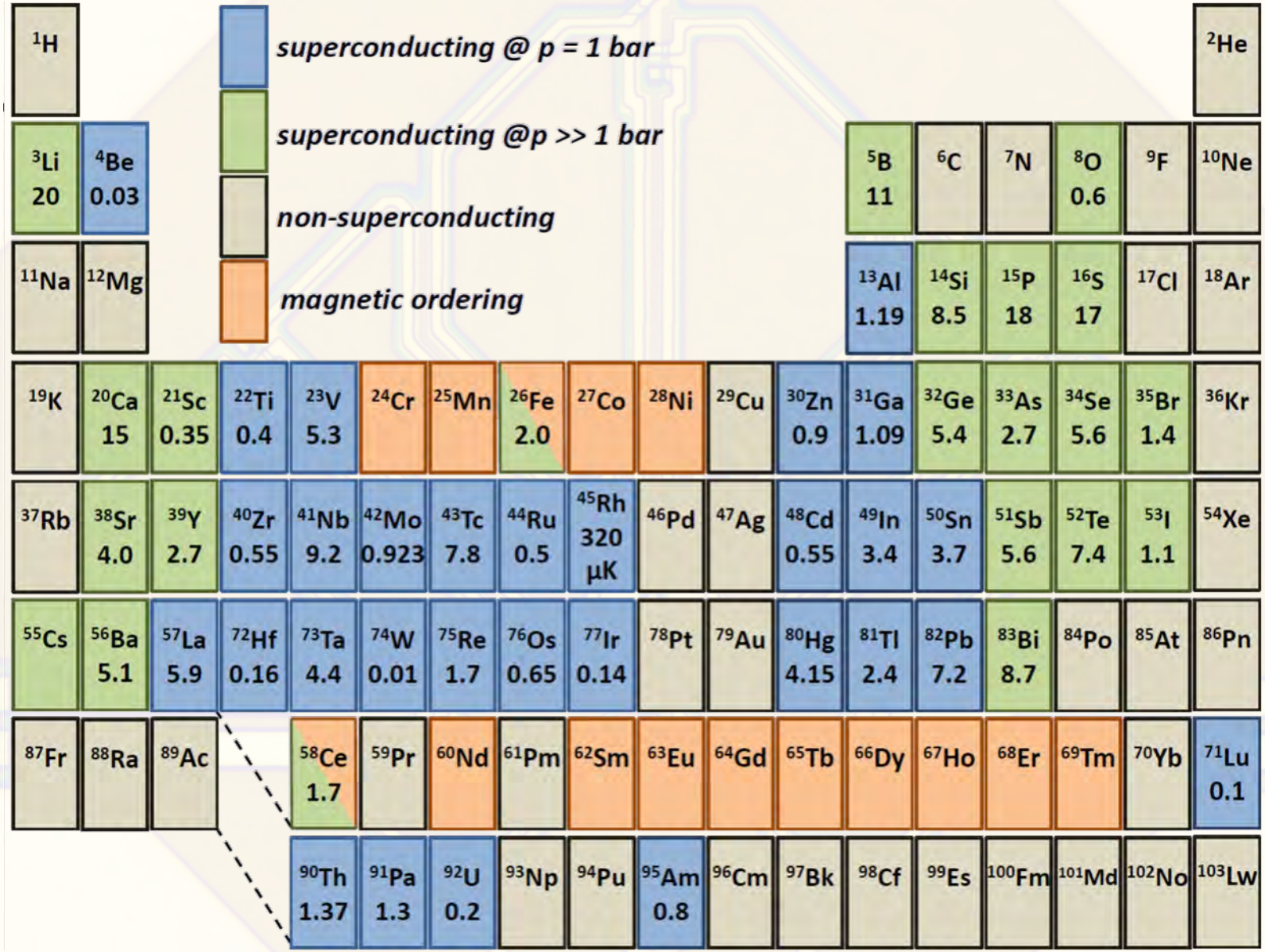
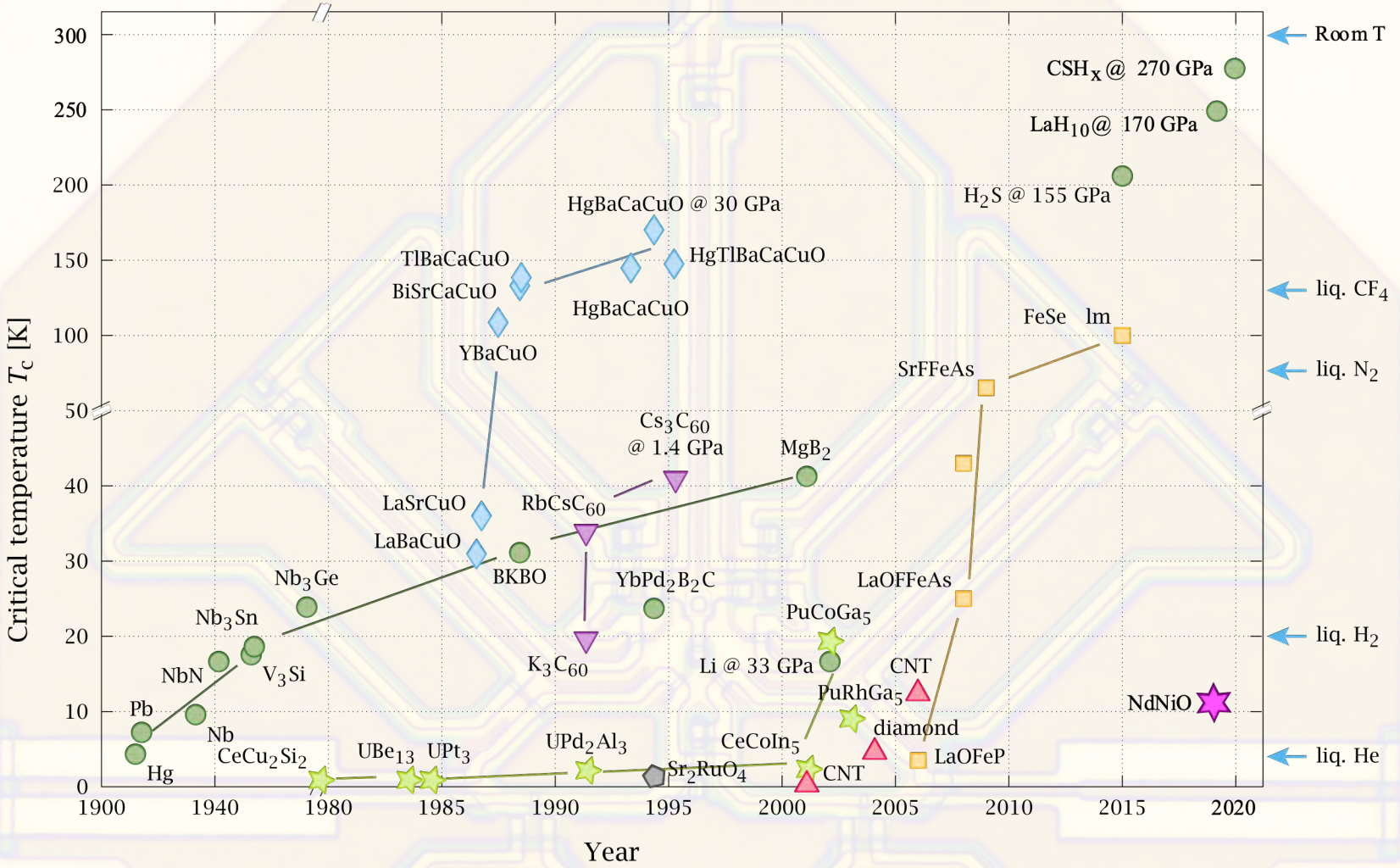


Fig. 17. — Plan du laboratoire cryogène de Leyde.

Elements Showing Superconductivity

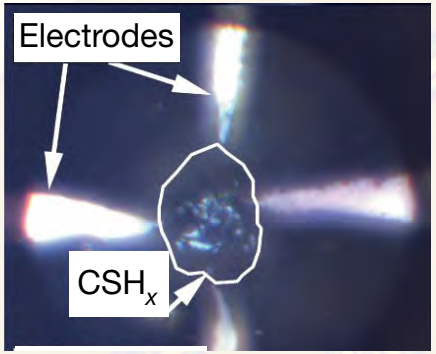


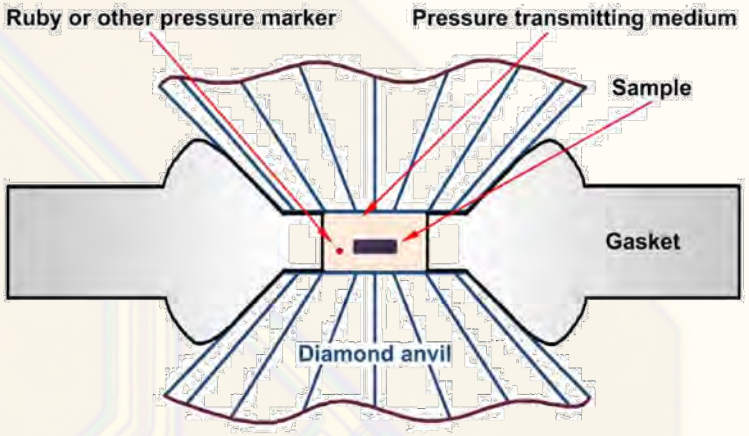
Timeline of the Discovery of Superconductors

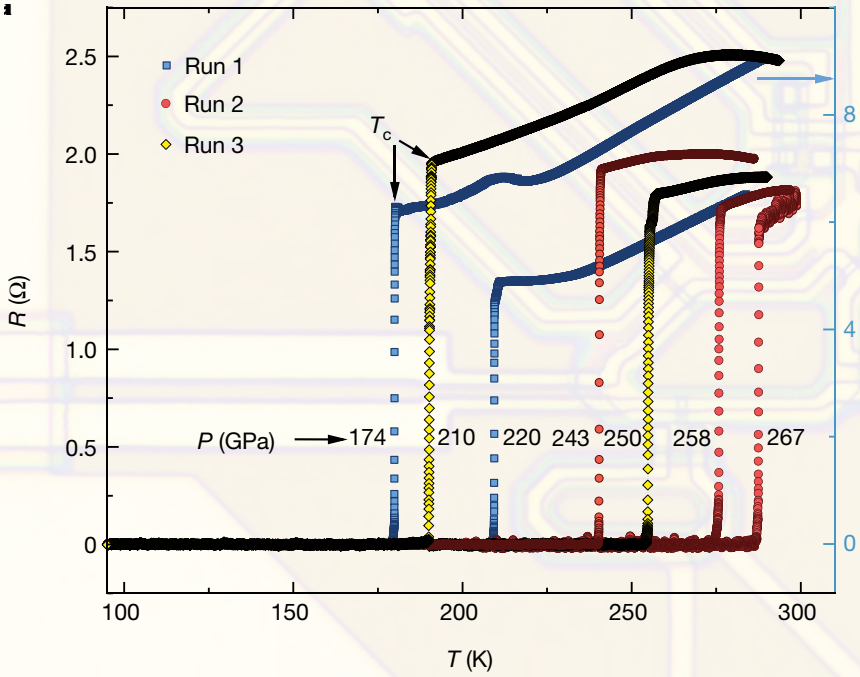


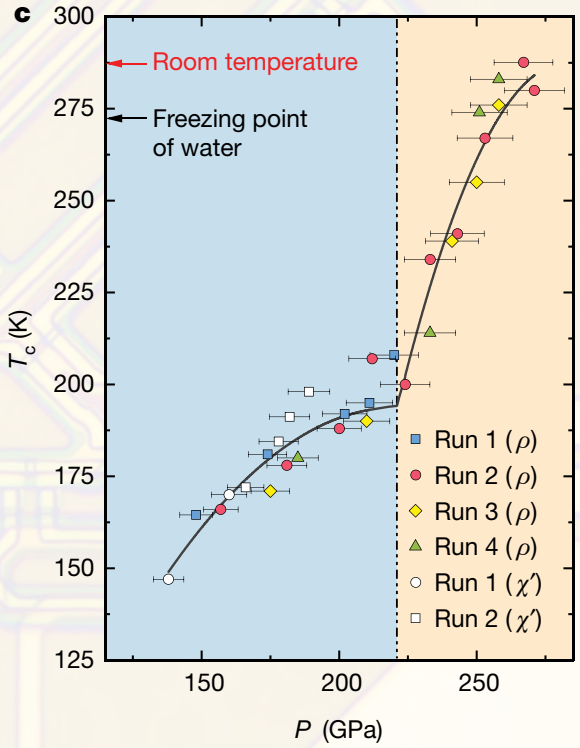
Highest Transition Temperature

Superconducting Transition for CSH_x @ 174 - 267 GPa

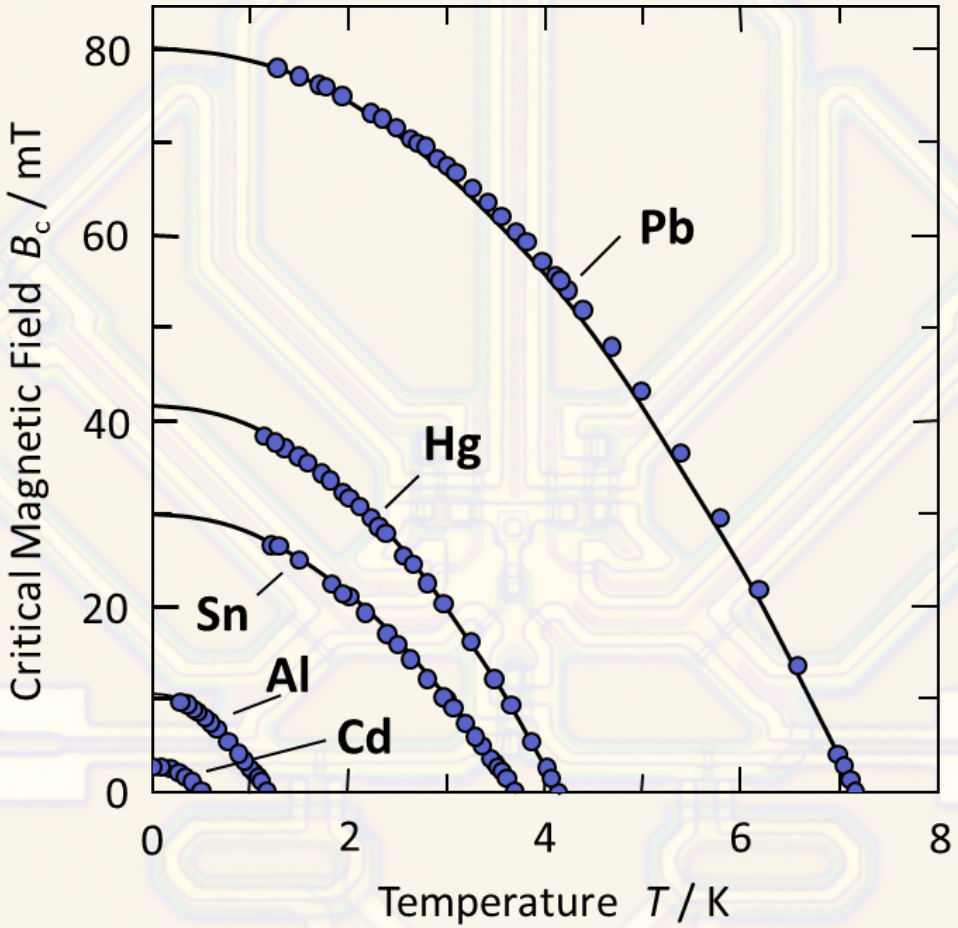




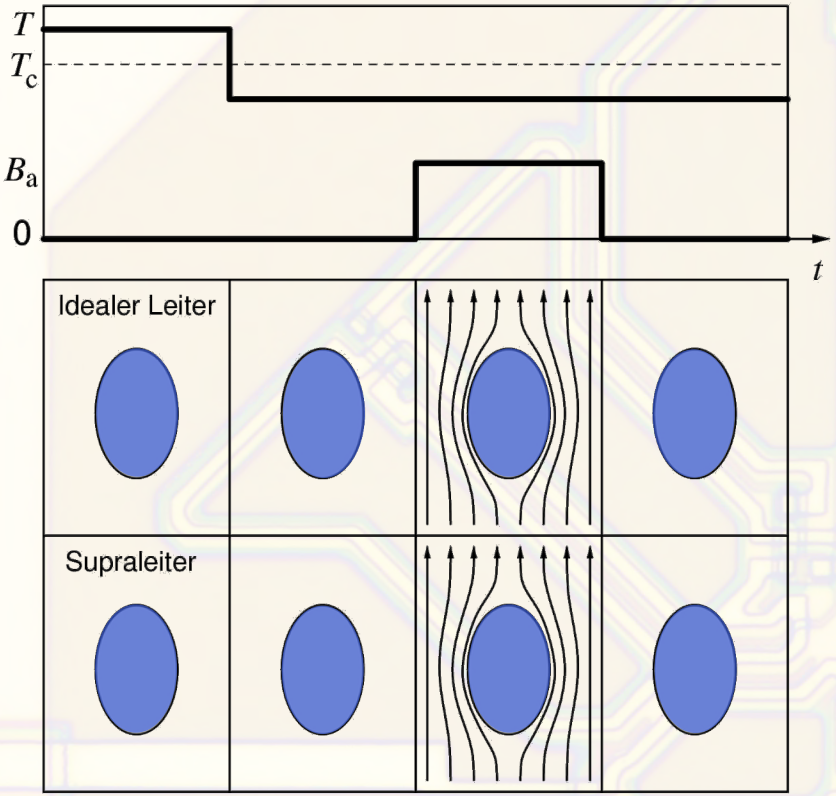


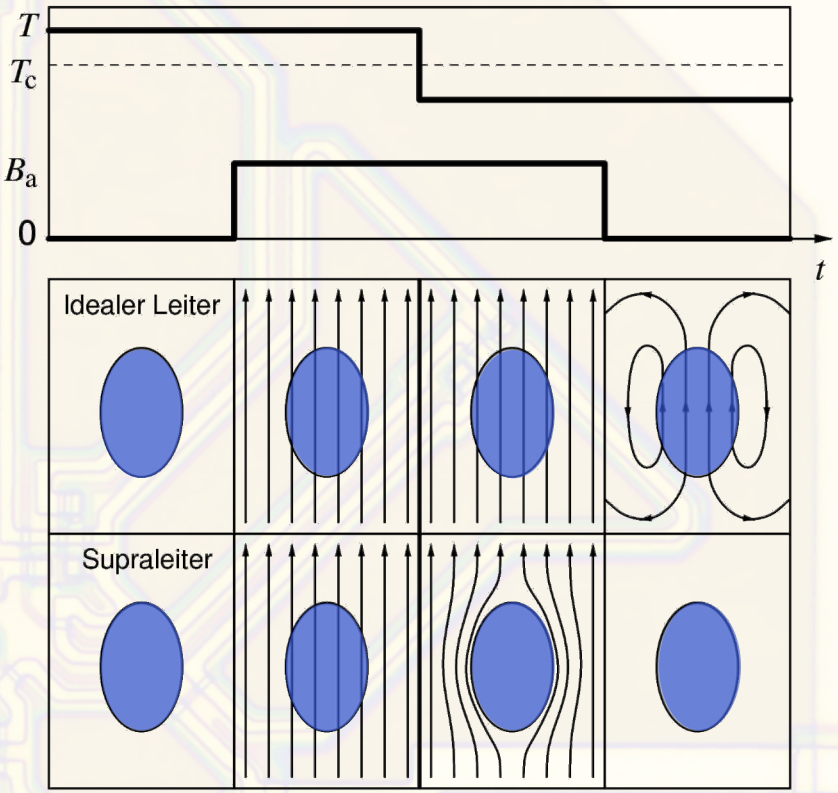


Critical Field of Type I SC as a Function of Temperature

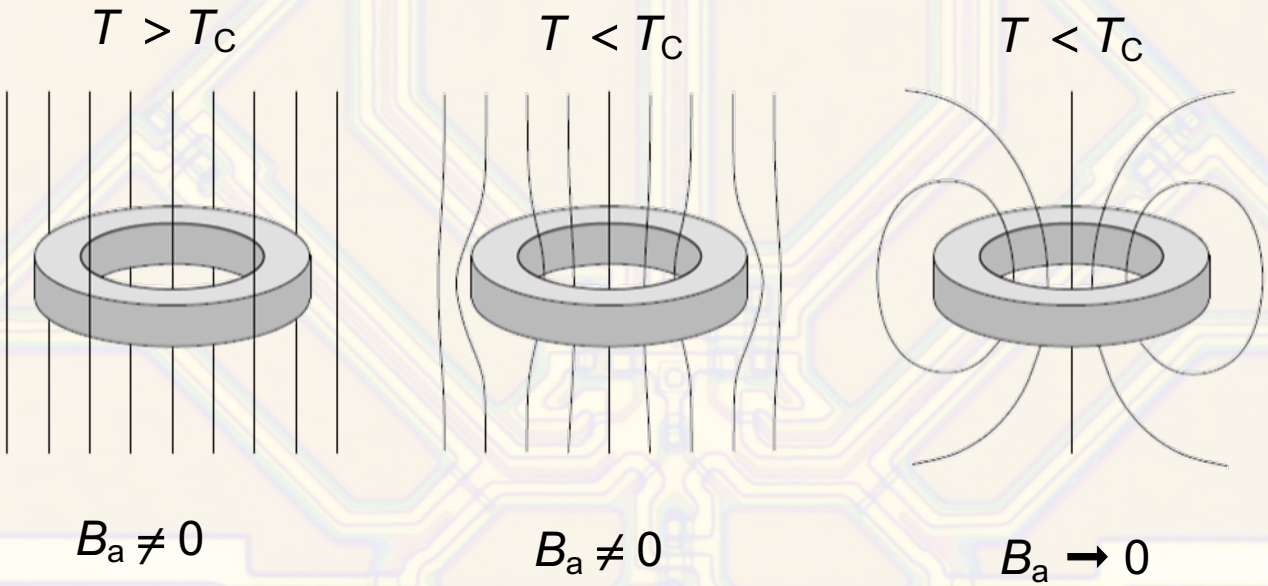


Comparison: Superconductors – Ideal Conductor

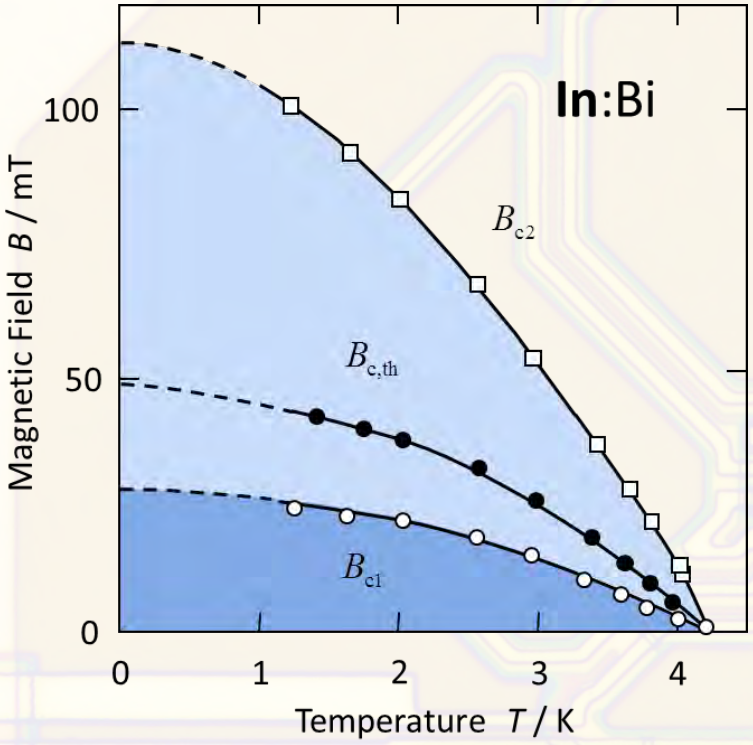


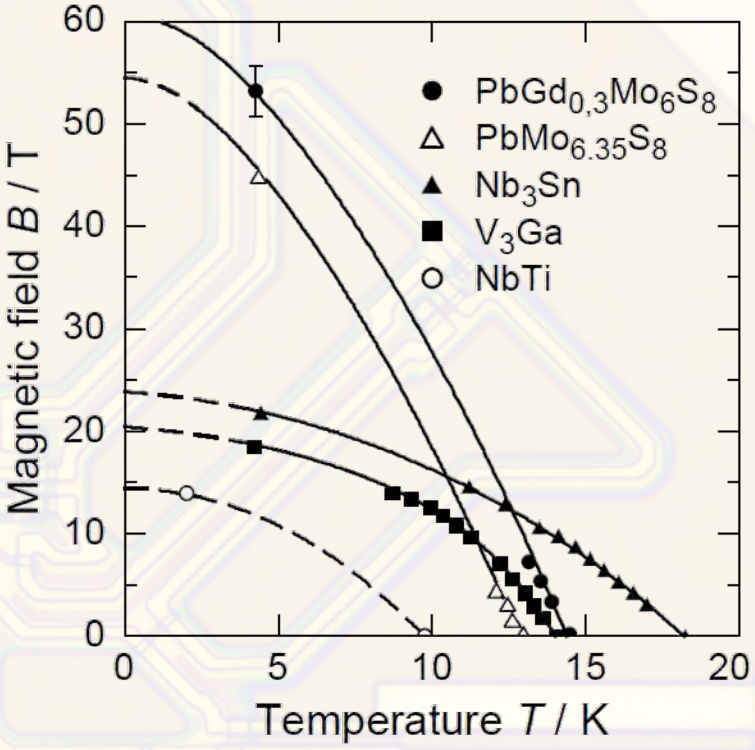


Superconducting Torus in Magnetic Field

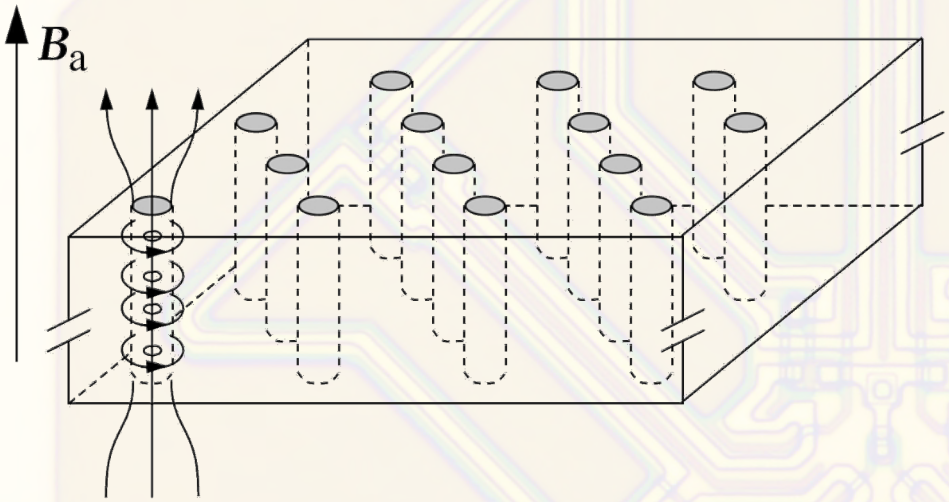


Critical Field of Type II Superconductors

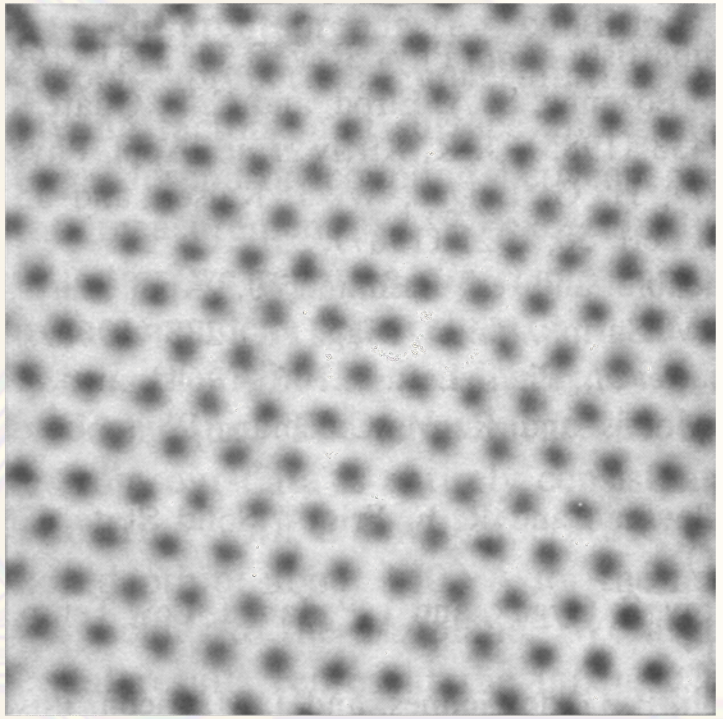




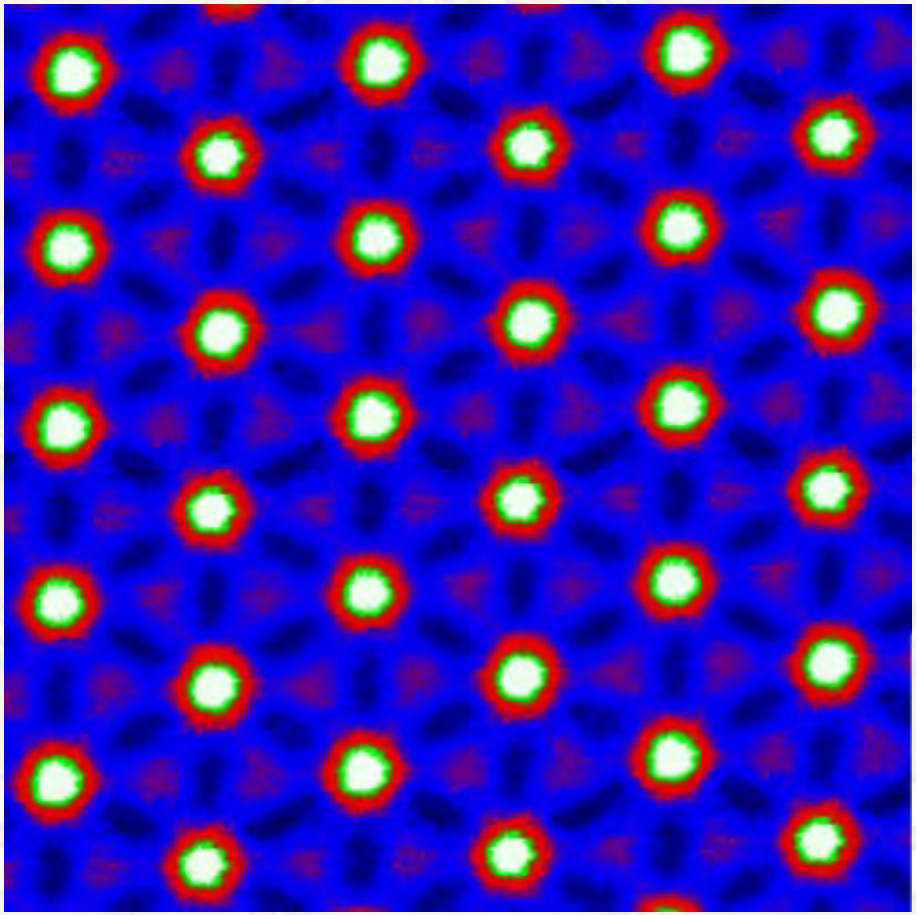
Abrikosov Lattices



$NbSe_2$

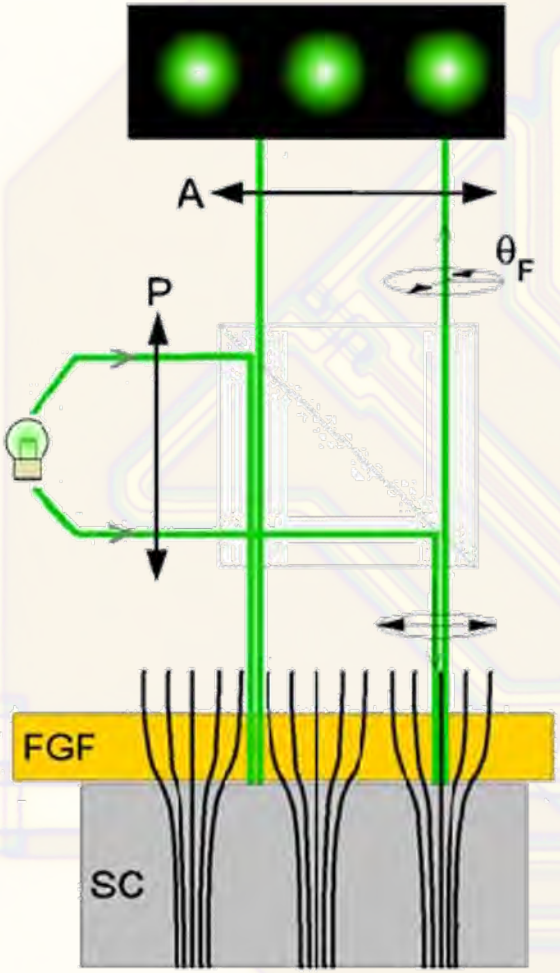


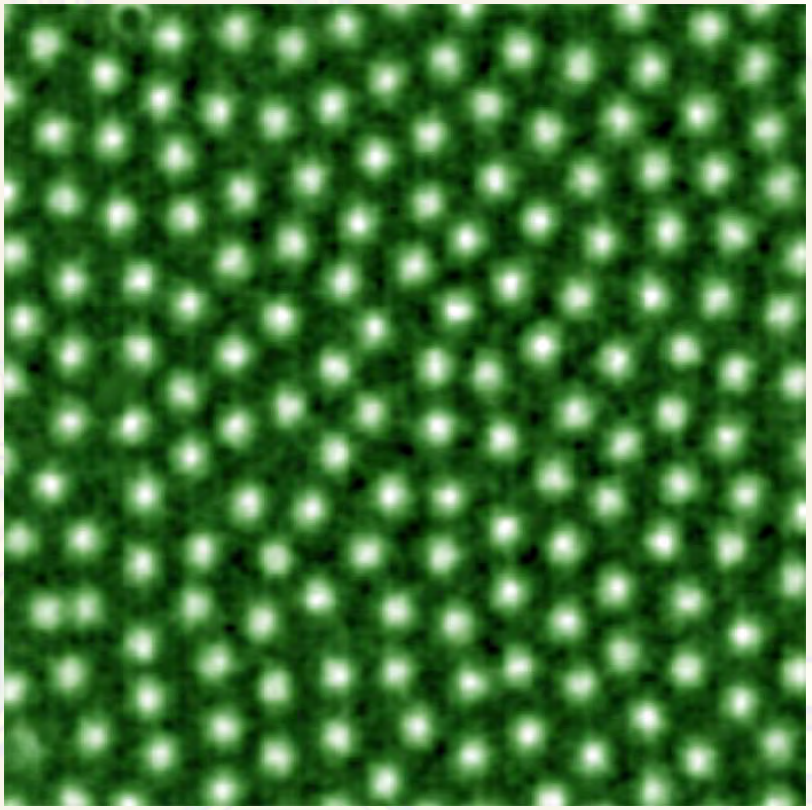
Details of a Abrikosov Lattice



STM Image $NbSe_2$

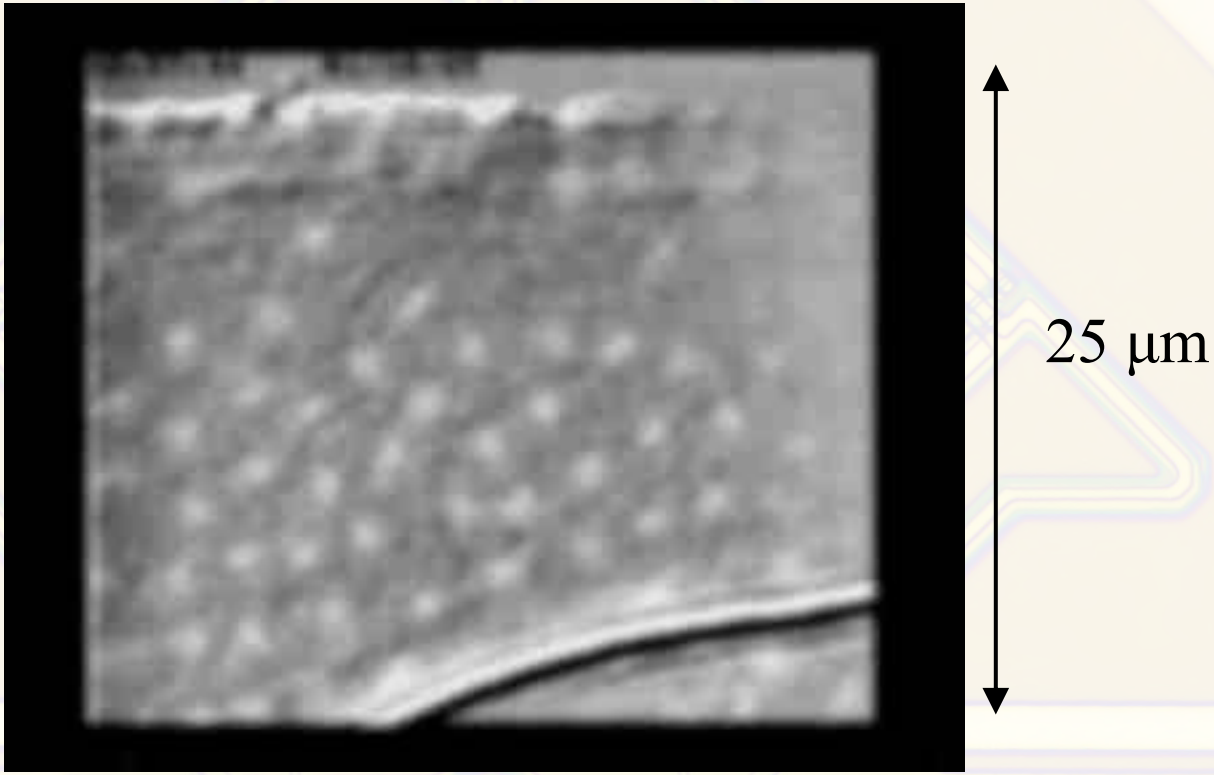
Magneto-optical Imaging of Vortices





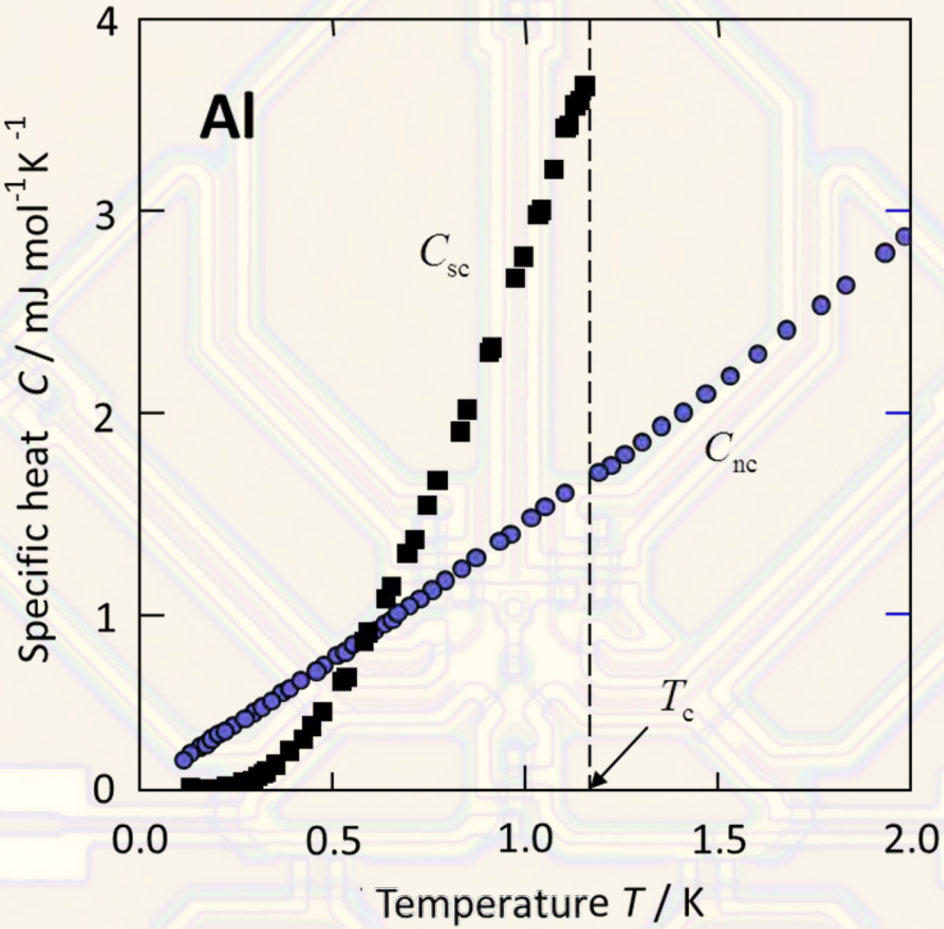
$NbSe_2$ T= 4.3 K, B = 0.3 mT

Penetration of Magnetic Flux in Type Two Superconductors

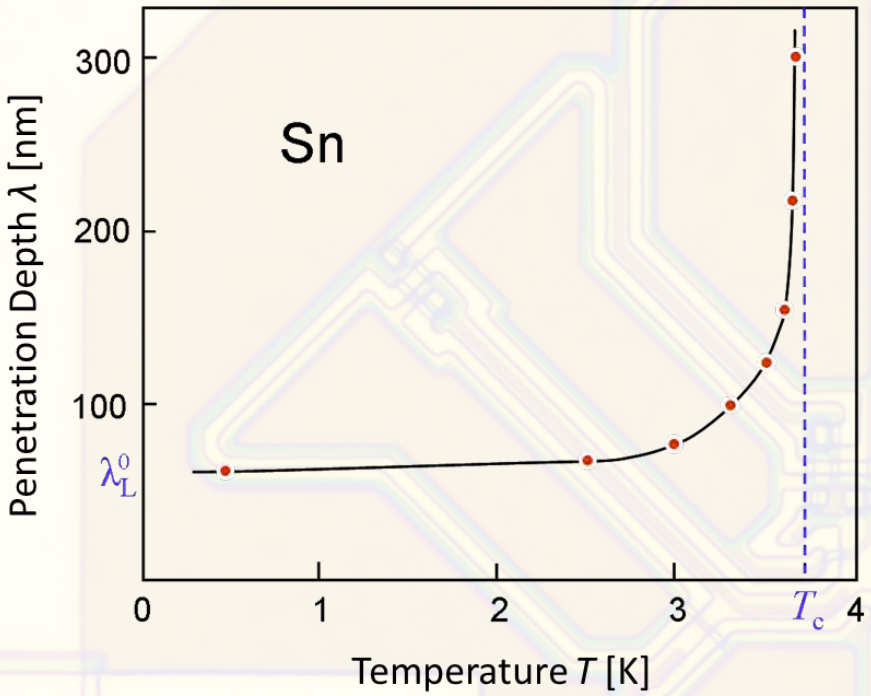


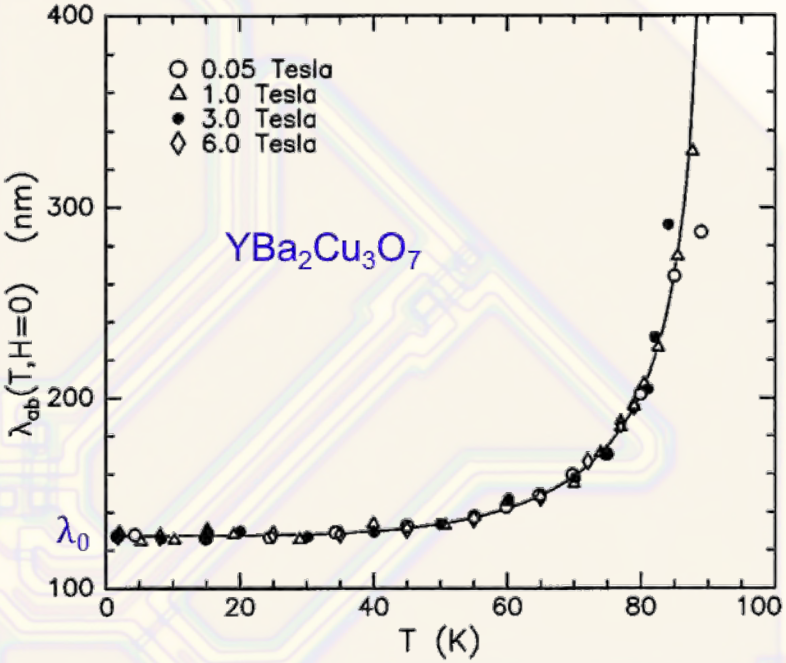
$NbSe_2$

Specific Heat of Aluminum



Temperature Dependence of London Penetration Depth





Temperature Dependence of London Penetration Depth