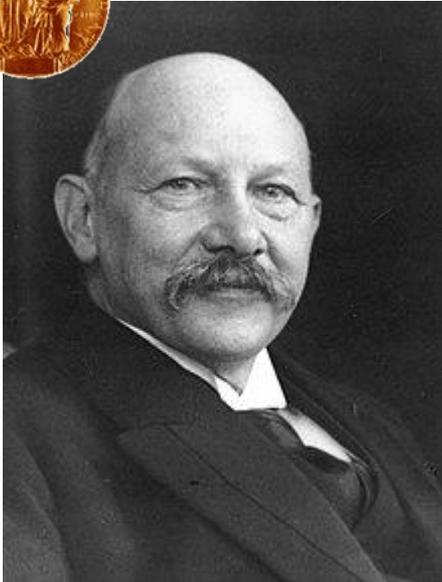


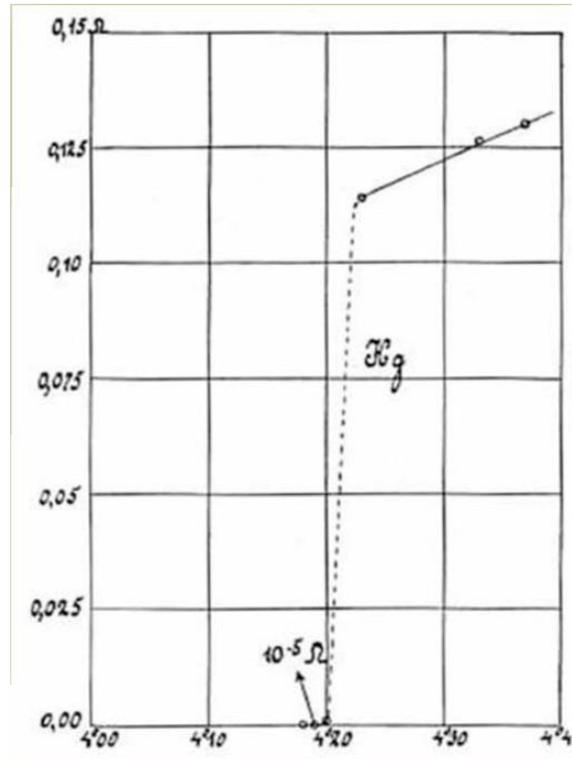
Condensed Matter

Investigating of the superconducting properties of the thin films of Al, In, Sn, Pb etc.

Lab logo:
Superconductivity



Kamerlingh Onnes
1853-1926



Superconductivity was discovered in Hg by Heike Kamerlingh Onnes in 1911 by investigation of the conductivity of metals at very low temperature

Onnes, H.K. (1911) The Superconductivity of Mercury. Comm. Phys. Lab. Univ., Leiden, 122-124.

Condensed Matter

Investigating of the superconducting properties of the thin films of Al, In, Sn, Pb etc.

Lab logo:
Superconductivity



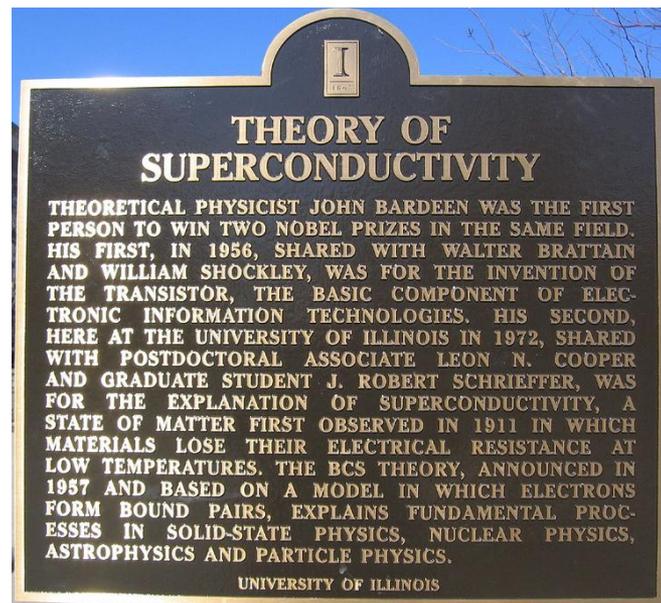
John Bardeen
1908-1991



Leon N. Cooper
1930-2024



John Robert Schrieffer
1931 -2019



PHYSICAL REVIEW

VOLUME 108, NUMBER 5

DECEMBER 1, 1957

Theory of Superconductivity*

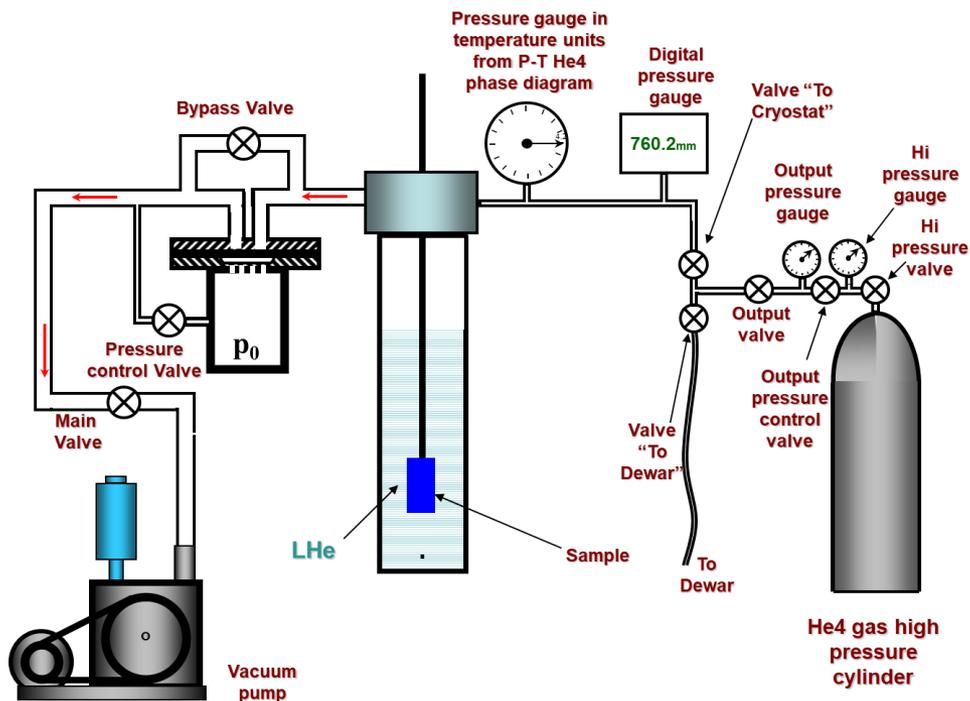
J. BARDEEN, L. N. COOPER,[†] AND J. R. SCHRIEFFER[‡]
Department of Physics, University of Illinois, Urbana, Illinois
(Received July 8, 1957)

Condensed Matter

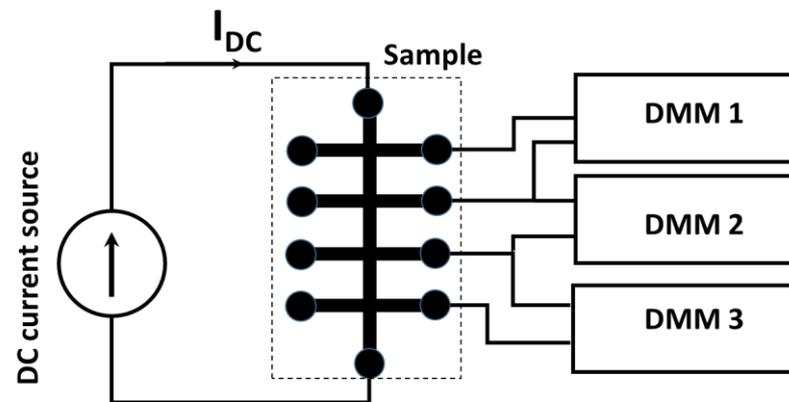
Investigating of the superconducting properties of the thin films of Al, In, Sn, Pb etc.

Lab logo:
Superconductivity

Cryogenic and Measuring setups

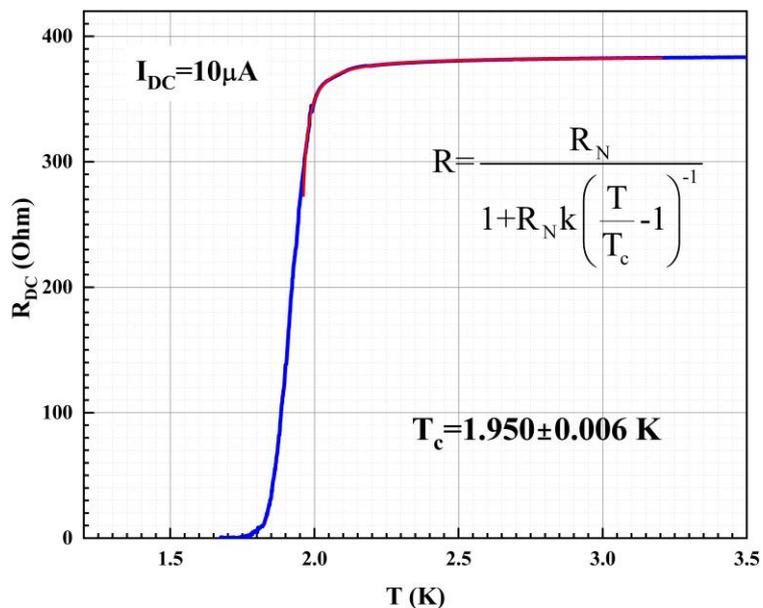


Cryogenic liquid ^4He setup

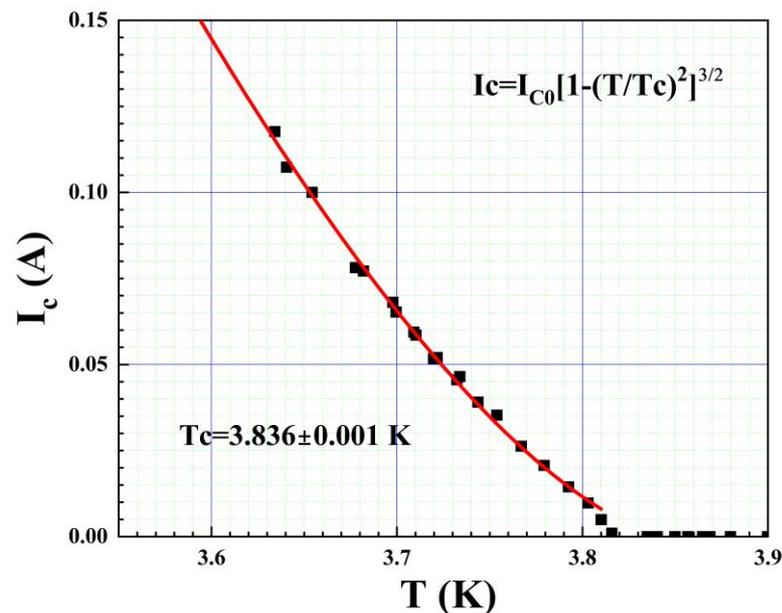


Electronics configuration for measurements of $R(T)$ and $I-V$ dependencies

Some experimental data.



Superconducting transition in thin (12 nm) Al film. Red line show the fitting of the data to Aslamazov-Larkin microscopic fluctuation theory



Temperature dependence of critical current of thin (~120 nm) Sn film. The results are fitted to Bardeen equation.