

THE UNIVERSITY OF HONG KONG
Introduction to Superconductivity
Sir Anthony J. Leggett

University of Illinois at Urbana-Champaign, USA

Abstract:

This series of lectures are intended for interested undergraduate and graduate students. They cover the fundamental aspects of classic superconductors and their explanations in terms of the BCS theory of superconductivity. No particular background will be assumed except elementary quantum mechanics, statistical mechanics and rudimentary solid-state physics.

Biography:

Sir Anthony J. Leggett was born in March 1938 in London, United Kingdom. He is a professor emeritus at the Department of Physics, University of Illinois Urbana-Champaign. Professor Leggett obtained his Ph.D. in physics from the University of Oxford in 1964 and was awarded the Nobel Prize in Physics in 2003 for his contributions to theory of superfluid Helium three. Professor Leggett is a member of the National Academy of Sciences, the American Philosophical Society, the American Academy of Arts and Sciences, the Russian Academy of Sciences (foreign member), and is a Fellow of the Royal Society (U.K.), the American Physical Society, and the American Institute of Physics. He is an Honorary Fellow of the Institute of Physics (U.K.) and was knighted (KBE) by Queen Elizabeth II for his contributions to physics.

10 lectures via Zoom, from 9 April 2024, 8:00-9:00 pm

9 April 2024, Tuesday Generalities about superconductivity	10 April 2024, Wednesday Vector potential in quantum mechanics
15 April 2024, Monday Bose-Einstein condensation; the problem of the supercurrent metastability	17 April 2024, Wednesday Ginzburg-Landau (GL) theory
22 April 2024, Monday Normal state and electron-electron interactions	24 April 2024, Wednesday BCS theory ($T=0$)
29 April 2024, Monday BCS theory at finite temperatures	1 May 2024, Wednesday Relation of BCS and GL theories
6 May 2024 Monday The Josephson effect	8 May 2024, Wednesday Dirty superconductors and exotic superconductivity

Zoom Link: <https://hku.zoom.us/j/97061852202?pwd=OUNhc0RZc01GV28wUkxVeIN4K2xxZz09>

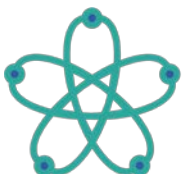
Meeting ID: 970 6185 2202 Passcode: 351591

Room 522, 5/F, Chong Yuet Ming Physics Building,
The University of Hong Kong



Registration Required: Please send a message to Dr. Mingyang Liu (mingyliu@hku.hk) and indicate the mode of attendance (onsite or zoom).

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