High temperature superconductivity

Lecture course for Ph.D. students by Dr. Alexander A. Kordyuk

Scope

This course gives a broad introduction to the phenomenon of superconductivity, starting from basic experimental facts and models for the conventional superconductors and then, through the discovery of high temperature superconductors, covering the modern view on their mechanism, properties and applications.

Topics (as taught in Spring 2005)

I. PHENOMENON OF SUPERCONDUCTIVITY


II. MATERIALS AND APPLICATIONS


III. HTSC problem


Assignments

Reading

Video Lectures

- Video Lectures on Superconductivity http://www.msm.cam.ac.uk/ascg/lectures/, University of Cambridge
- Nobel Lecture by Alexei A. Abrikosov http://nobelprize.org/mediaplayer/index.php?id=537