1. Record Nr. UNINA9910830028803321

Autore	Ireson Gren
Titolo	Discovering superconductivity [[electronic resource]] : an investigative approach / / Gren Ireson
Pubbl/distr/stampa	Chichester, West Sussex, : Wiley, 2012
ISBN	1-283-64508-4 1-118-34318-2 1-118-34321-2 1-118-34319-0
Descrizione fisica	1 online resource (187 p.)
Classificazione	TEC039000
Disciplina	537.6/23076 537.623076 621.35
Soggetti	Superconductivity - Study and teaching (Higher) - Activity programs Superconductors
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Discovering Superconductivity; Contents; List of Figures; List of Tables; Preface; Acknowledgements; To the Teacher; To the Student; SECTION I Introduction; 1 Resistivity and Conduction in Metals; 1.1 Introduction; 1.2 Resistivity; 1.3 Conduction in Metals; 1.4 Revisiting Ohm's Law; References; 2 A Brief History of Superconductivity; 2.1 Introduction; 2.2 The Beginning: Kwik Nagenoeg Nul; 2.3 1933 - Perfect Diamagnetism?; 2.4 The London Brothers; 2.5 1957 - The BCS Theory; 2.6 1962 - The Josephson Effect; 2.7 1986 - Bednorz and Muller and Oxide Superconductors 2.8 2003 - Abrikosov, Ginzburg and Leggett - and the Future2.9 Getting Cold Enough; References; SECTION II Superconductivity; 3 An Explanation of Superconductivity?; 3.1 Transition Temperature; 3.2 Two-Fluid Model; 3.3 Critical Field, Critical Current; 3.4 Schawlow and Devlin; 3.5 The London Equation; 3.6 BCS Theory; 3.6.1 The Isotope Effect; 3.6.2 The Energy Gap; 3.7 An Alternative Approach to the Energy Gap; 3.7.1 Electron-Electron Attraction; References; 4 The Meissner-Ochsenfeld Effect; References; 5 Diamagnetic Effects; 5.1

Diamagnetism, Paramagnetism and Ferromagnetism; References
6 Persistence of Current6.1 Quinn and Ittner; References; 7 Type I and Type II Superconductors; 7.1 Critical Magnetic Field; References; 8 Flux Pinning; 8.1 Vortex and Flux Lines; 8.2 The Original Abrikosov; References; SECTION III Superconducting Materials; 9 Low-Temperature Superconductors; 10 Organic Superconductors; References; 11 High-Temperature Superconductors; 11.1 Magnesium Diboride; 11.2 Transition Temperature of High-Tc Superconductors; References; SECTION IV Applications; 12 Superconducting Wire; 13 Medical Imaging; 13.1 Magnetic Resonance Imaging (MRI)
13.2 Magnetoencephalography13.2.1 The Josephson Junction Revisited; 13.2.2 Neuronal Currents; References; 14 CERN and the LHC; References; 15 Maglev Trains; Appendices; A The BCS Theory; B Flux Penetration; C The Josephson Junction and the SQUID; D MRI; Generating the MRI Signal; References; E A Note on Superfluidity; F A Note on Safety; Index

Sommario/riassunto

Superconductivity is a quantum phenomenon that manifests itself in materials showing zero electrical resistance below a characteristic temperature resulting in the potential for an electric current to run continually through such a material without the need for a power source. Such materials are used extensively in medical and power applications, e.g. MRI and NMR machines. Discovering Superconductivity uses a series of practical and investigative activities, which can be used as tutor demonst

2. Record Nr. UNISA996205224003316

Titolo	Theoretical and experimental plant physiology
Pubbl/distr/stampa	[Cham] : , : Springer
Descrizione fisica	1 online resource
Soggetti	Plant physiology Physiologie végétale Periodicals.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Periodico
Note generali	Refereed/Peer-reviewed