1. Record Nr. UNINA9910366576803321

Titolo	Superconductivity : From Materials Science to Practical Applications / / edited by Paolo Mele, Kosmas Prassides, Chiara Tarantini, Anna Palau, Petre Badica, Alok K. Jha, Tamio Endo
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-23303-0
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (379 pages)
Disciplina	537.623
Soggetti	Engineering—Materials Magnetism Magnetic materials Nanotechnology Materials Engineering Magnetism, Magnetic Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Targeted selection and characterisation of contemporary HTS wires for specific applications -- Pinning efficiency of artificial pinning centers in superconductor nanocomposite films -- Control of vortex pinning in YBCO thin films by incorporating APCs through surface modified target approach -- Progress in thick film 2G-HTS development -- Superconducting YBa2Cu3O7- Nanocomposite Films Using Preformed ZrO2 Nanocrystals via Chemical Solution Deposition -- High vortex activation energies in the AC magnetic response of superconductors close to the DC irreversibility line -- An atomic-scale perspective of the challenging microstructure of YBa2Cu3O7-x thin films -- Growth, properties, and device fabrication of iron-based superconductor thin-films -- Future potentials of new high Tc iron based superconductors -- Grain boundaries in Fe-based superconductors -- Control of the critical current density through microstructural design by Ho2O3 and Te co-addition into MgB2 processed by ex situ spark plasma sintering -- Superconductivity in the two dimensional electron gas at transition

metal oxide interfaces -- Prospects of superconducting magnet technology in the medical field: a new paradigm on the horizon?.

Sommario/riassunto

This book provides readers with a comprehensive overview of the science of superconducting materials. It serves as a fundamental information source on the actual techniques and methodologies involved in superconducting materials growth, characterization and processing. This book includes coverage of several categories of medium and high-temperature superconducting materials: cuprate oxides, borides, and iron-based chalcogenides and pnictides. Provides a single-source reference on superconducting materials growth, characterization and processing; Bridges the gap between materials science and applications of superconductors; Discusses several categories of superconducting materials such as cuprate oxides, borides, and iron-based chalcogenides and pnictides; Covers synthesis, characterization, and processing of superconducting materials, as well as the nanoengineering approach to tailor the properties of the used materials at the nanoscale level.