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Disciplina	530
Soggetti	Surfaces (Physics) Interfaces (Physical sciences) Thin films Optical materials Electronic materials Nanotechnology Materials—Surfaces Nanoscale science Nanoscience Nanostructures Surface and Interface Science, Thin Films Optical and Electronic Materials Nanotechnology and Microengineering Surfaces and Interfaces, Thin Films Nanoscale Science and Technology
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Note generali	Includes index.
Nota di contenuto	Principles of Electrochemistry in Materials Science -- Principles of Electrodeposition -- Electrodeposition of Mesocrystals and Small Structures -- Electrodeposition of Nanocrystalline Films and Coatings -- Template Electrodeposition of Nanowires -- Metal-Based Nanocomposite Films and Coatings -- Electrodeposition of Nanostructures on Semiconductors -- Electrodeposition of Compositionally Modulated Multilayers and Superlattices -- Miscellaneous Electrodeposited Nanostructures.

This book provides an overview of electrodeposition of nanomaterials from principles to modern concepts for advanced materials in science and technology. Electrochemical deposition or electrodeposition is explained for fabrication and mass production of functional and nanostructured device materials. The present book spans from principles to modern insights and concepts. It gives a comprehensive overview of the electrochemistry of materials, which is useful as basic information to understand concepts used for nanostructuring of electrodeposited materials, reviews the electrodeposition constituents, thermodynamics and kinetics of electrodeposition, electrochemical and instrumental assessment techniques and other physical factors affecting the electrodeposition mechanisms. A wide variety of nanostructured materials and related concepts and applications are explained with respect to nanocrystals, nanocrystalline films, template-based nanostructures, nanocomposite films, nanostructures on semiconductors, multilayers, mesoporous films, scanning microscopical probe assisted fabrication and galvanic replacement. This book is useful for researchers in materials science, engineering technologists and graduate students. It can also be used as a textbook for undergraduates and graduate students studying related disciplines.
