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Nota di contenuto	Chapter 1.Neutron Diffraction: a tool for the characterization of the magnetic structures -- Chapter 2.Small angle X-ray scattering to analyze the morphological properties of nanoparticulate systems -- Chapter 3.Dynamic Light Scattering: Effective Sizing Technique for Characterization of Magnetic Nanoparticles -- Chapter 4.Scanning Electron Microscopy: Principle and Applications in Nanomaterials Characterization -- Chapter 5.TEM for atomic scale study: fundamental, instrumentation and applications in nanotechnology -- Chapter 6. Materials Characterization using Scanning Tunneling Microscopy: From Fundamentals to Advanced Applications -- Chapter 7.Atomic and magnetic force microscopic studies of Co thin films and nanoparticles: understanding the surface correlation using fractal studies -- Chapter

8. Optical spectroscopy and its applications in inorganic materials --  
Chapter 9. Fourier Transform Infrared Spectroscopy: Fundamentals and  
application in functional groups and nanomaterials characterization --  
Chapter 10. Rare Earths Luminescence: Electronic Spectroscopy and  
Applications -- Chapter 11. Raman Spectroscopy: A Potential  
Characterization Tool for Carbon Materials -- Chapter 12. Photoelectron  
Spectroscopy: Fundamental Principles and Applications -- Chapter 13.  
Introduction to X-Ray Absorption Spectroscopy and its applications in  
material science -- Chapter 14.  $^{31}\text{P}$  Solid-state NMR spectroscopy of  
adsorbed phosphorous probe molecules: Acidity characterization of  
solid acid carbonaceous materials for catalytic applications.

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Sommario/riassunto

This book focuses on the widely used experimental techniques available for the structural, morphological, and spectroscopic characterization of materials. Recent developments in a wide range of experimental techniques and their application to the quantification of materials properties are an essential side of this book. Moreover, it provides concise but thorough coverage of the practical and theoretical aspects of the analytical techniques used to characterize a wide variety of functional nanomaterials. The book provides an overview of widely used characterization techniques for a broad audience: from beginners and graduate students, to advanced specialists in both academia and industry.

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