

# Handbook of Materials Characterization

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# Handbook of Materials Characterization

 Springer

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# Preface

One of the significant aspects of materials-based research is the characterization tools. Today, there is an immense range of scientific techniques available that enables us to study physiochemical properties of the materials. This book focuses on the utmost effective and widely used techniques available for structural, morphological, and spectroscopic characterizations of materials. Three important aspects of characterization namely materials structures, morphology, and chemical analysis are included in the present volume. The developments in wide range of techniques and their application to the quantification of the materials properties are essential sides of the book.

The principal objective is to provide a concise reading material on both practical and theoretical description of the techniques used to characterize a wide variety of materials. Our approach is focused on fundamental understanding, basic instrumentation, experimental strategy, analyses, and application part. Most of the characterization techniques are used throughout undergraduate courses; however, the background of these methods will not be provided in the standard textbooks. This book will serve as an overview of characterization of materials for a wide audience: from beginners and graduate-level students up to advanced specialists in both academic and industrial sectors. The authors of each chapter have been encouraged to present the highlights from the extensive literature on the topic including latest cutting-edge research using both conventional and nonconventional characterization tools.

São Luis, Brazil

Surender Kumar Sharma

# Contents

<b>1</b>	<b>Neutron Diffraction: A tool for the Magnetic Properties</b> .....	<b>1</b>
	Pablo Leite Bernardo and Helio Salim de Amorim	
<b>2</b>	<b>Small-Angle X-Ray Scattering to Analyze the Morphological Properties of Nanoparticulated Systems</b> .....	<b>37</b>
	Oscar Moscoso Londoño, Pablo Tancredi, Patricia Rivas, Diego Muraca, Leandro M. Socolovsky, and Marcelo Knobel	
<b>3</b>	<b>Dynamic Light Scattering: Effective Sizing Technique for Characterization of Magnetic Nanoparticles</b> .....	<b>77</b>
	Sim Siong Leong, Wei Ming Ng, JitKang Lim, and Swee Pin Yeap	
<b>4</b>	<b>Scanning Electron Microscopy: Principle and Applications in Nanomaterials Characterization</b> .....	<b>113</b>
	Kalsoom Akhtar, Shahid Ali Khan, Sher Bahadar Khan, and Abdullah M. Asiri	
<b>5</b>	<b>TEM for Atomic-Scale Study: Fundamental, Instrumentation, and Applications in Nanotechnology</b> .....	<b>147</b>
	Yasir Javed, Khuram Ali, Kanwal Akhtar, Jawaria, M. Irfan Hussain, Gulzar Ahmad, and Taskeen Arif	
<b>6</b>	<b>Materials Characterization Using Scanning Tunneling Microscopy: From Fundamentals to Advanced Applications</b> .....	<b>217</b>
	Suryakanti Debata, Trupti R. Das, Rashmi Madhuri, and Prashant K. Sharma	
<b>7</b>	<b>Atomic and Magnetic Force Studies of Co Thin Films and Nanoparticles: Understanding the Surface Correlation Using Fractal Studies</b> .....	<b>263</b>
	Indra Sulania, R. P. Yadav, and Ranjeet Kumar Karn	

<b>8</b>	<b>Optical Spectroscopy and Its Applications in Inorganic Materials ...</b>	<b>293</b>
	Marcio Aurélio Pinheiro Almeida and Adeilton Pereira Maciel	
<b>9</b>	<b>Fourier Transform Infrared Spectroscopy: Fundamentals and Application in Functional Groups and Nanomaterials Characterization .....</b>	<b>317</b>
	Shahid Ali Khan, Sher Bahadar Khan, Latif Ullah Khan, Aliya Farooq, Kalsoom Akhtar, and Abdullah M. Asiri	
<b>10</b>	<b>Rare Earth Luminescence: Electronic Spectroscopy and Applications .....</b>	<b>345</b>
	Latif Ullah Khan and Zahid U. Khan	
<b>11</b>	<b>Raman Spectroscopy: A Potential Characterization Tool for Carbon Materials .....</b>	<b>405</b>
	Padmnabh Rai and Satish Kumar Dubey	
<b>12</b>	<b>Photoelectron Spectroscopy: Fundamental Principles and Applications .....</b>	<b>435</b>
	Jagdish Kumar	
<b>13</b>	<b>Introduction to X-Ray Absorption Spectroscopy and Its Applications in Material Science .....</b>	<b>497</b>
	Aditya Sharma, Jitendra Pal Singh, Sung Ok Won, Keun Hwa Chae, Surender Kumar Sharma, and Shalendra Kumar	
<b>14</b>	<b><sup>31</sup>P Solid-State NMR Spectroscopy of Adsorbed Phosphorous Probe Molecules: Acidity Characterization of Solid Acid Carbonaceous Materials for Catalytic Applications .....</b>	<b>549</b>
	Bhaskar Garg	
	<b>Index .....</b>	<b>597</b>