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Titolo	Local structural characterisation [[electronic resource] /] / edited by Duncan W. Bruce, Dermot O'Hare, Richard I. Walton
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Descrizione fisica	1 online resource (474 p.)
Collana	Inorganic materials series
Altri autori (Persone)	BruceDuncan W O'HareDermot WaltonRichard I
Disciplina	543/.5
Soggetti	Chemical structure Materials
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	Cover; Series Page; Title Page; Copyright; Inorganic Materials Series Preface; Preface; List of Contributors; Chapter 1: Solid-State Nuclear Magnetic Resonance Spectroscopy; 1.1 Overview; 1.2 Theoretical Background; 1.3 Basic Experimental Methods; 1.4 Calculation of NMR Parameters; 1.5 Applications of Solid-State NMR Spectroscopy; 1.6 Commonly Studied Nuclei; 1.7 NMR of Materials; 1.8 Conclusion; References; Chapter 2: X-ray Absorption and Emission Spectroscopy; 2.1 Introduction: What is Photon Spectroscopy?; 2.2 Electronic Structure and Spectroscopy; 2.3 Calculation of Inner-shell Spectra 2.4 Experimental Techniques2.5 Experimental Considerations; 2.6 Conclusion; Acknowledgements; REFERENCES; Chapter 3: Neutrons and Neutron Spectroscopy; 3.1 The Neutron and How it is Scattered; 3.2 Why Neutrons?; 3.3 Molecular Hydrogen (Dihydrogen) in Porous Materials; 3.4 Ins and Catalysis; 3.5 CO2 and SO2 Capture; 3.6 What Could be Next?; 3.7 Conclusion; References; Chapter 4: Electron Paramagnetic Resonance Spectroscopy of Inorganic Materials; 4.1 Introduction; 4.2 Electron Spin in a Magnetic Field; 4.3 Spin Hamiltonian and symmetry

	4.4 Principal Types of EPR Spectrum and Their Characteristic Features4. 5 Advanced EMR Techniques; REFERENCES; Chapter 5: Analysis of Functional Materials by X-ray Photoelectron Spectroscopy; 5.1 Introduction; 5.2 Imaging XPS; 5.3 Time-resolved High-resolution XPS; 5.4 High- or Ambient-pressure XPS; 5.5 Applications to Inorganic Materials; 5.6 Conclusion; References; Index
Sommario/riassunto	Inorganic materials are at the heart of many contemporary real-world applications, in electronic devices, drug delivery, bio-inspired materials and energy storage and transport. In order to underpin novel synthesis strategies both to facilitate these applications and to encourage new ones, a thorough review of current and emerging techniques for materials characterisation is needed. Examining important techniques that allow investigation of the structures of inorganic materials on the local atomic scale, Local Structural Characterisation discusses: Solid-State NMR S

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Autore	Talebizadeh Sardari Pouyan
Titolo	Computational Heat Transfer and Fluid Mechanics
Pubbl/distr/stampa	Basel, : MDPI - Multidisciplinary Digital Publishing Institute, 2022
Descrizione fisica	1 online resource (280 p.)
Soggetti	History of engineering and technology Technology: general issues
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Sommario/riassunto	With the advances in high-speed computer technology, complex heat transfer and fluid flow problems can be solved computationally with high accuracy. Computational modeling techniques have found a wide range of applications in diverse fields of mechanical, aerospace, energy, environmental engineering, as well as numerous industrial

systems. Computational modeling has also been used extensively for performance optimization of a variety of engineering designs. The purpose of this book is to present recent advances, as well as up-to-date progress in all areas of innovative computational heat transfer and fluid mechanics, including both fundamental and practical applications. The scope of the present book includes single and multiphase flows, laminar and turbulent flows, heat and mass transfer, energy storage, heat exchangers, respiratory flows and heat transfer, biomedical applications, porous media, and optimization. In addition, this book provides guidelines for engineers and researchers in computational modeling and simulations in fluid mechanics and heat transfer.