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The print and eBooks in our portfolio number in the hundreds, and all are full of relevant, expert insight from international authors and editors. The information required to take a vital next step – whether in study, research or teaching technique – could come from any one of them. So for 2021, we wanted to highlight recently published titles, as well as giving you advanced notice of the books coming in the next six months.

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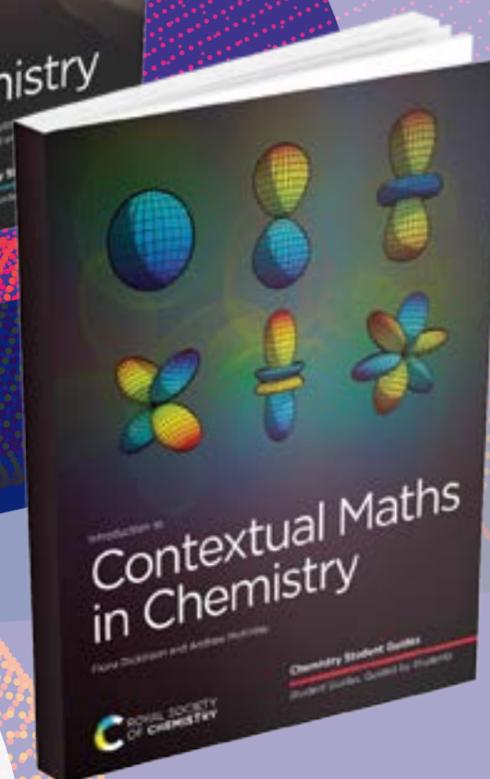
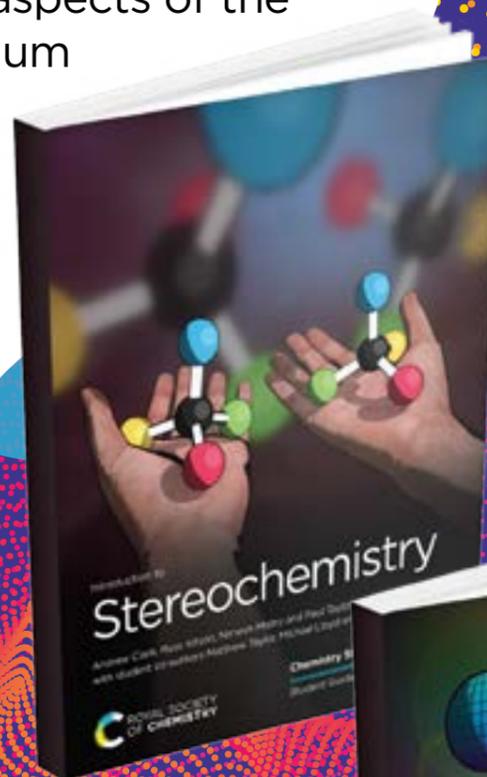
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Addressing the hottest topics in biomaterials science, these authoritative texts provide in-depth overviews and analysis for graduates, academics and practitioners requiring a deeper understanding of the subject. Emphasising a physical science and engineering approach, titles address physicochemical properties and structure-property relationships to inform function and design. Capturing underpinning principles applied to biomaterials science, as well as emerging technological advances and applications, this series is a high quality resource for those studying and conducting research in biomaterials science and engineering.

Biomimetic Protein Based Elastomers

Emerging Materials for the Future

Namita Roy Choudhury University of Adelaide, Australia | **Julie C Liu** Purdue University, USA | **Naba K Dutta** RMIT University, Australia

Elastomeric proteins are ubiquitous in nature and exhibit an exceptionally broad range of material properties which are necessary for many biological functions including normal cardiac development and function, elasticity in human arterial walls as well as jumping and flying mechanisms of arthropods. Edited by active researchers in the field, the book provides a timely overview of the materials, along with synthesis techniques, responsive behaviour and health applications.



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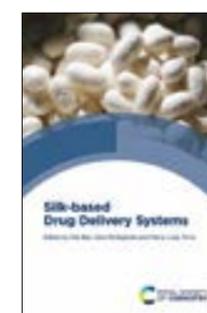
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Professional Reference

Silk-based Drug Delivery Systems

Elia Bari University of Pavia, Italy | **Sara Perteghella** University of Pavia, Italy | **Maria Luisa Torre** University of Pavia, Italy

Covering spider silk and silk worm cocoons, the editors elucidate the extraction, structure and properties of silk sericin and silk fibroin. Showing how these proteins are employed in micro and nano drug delivery systems, their use in pre-clinical and clinical trials, and closing with a chapter on sustainability-driven innovation in the pharma industry, this book is ideal for graduates and researchers in biomaterials science and pharmaceutical science.



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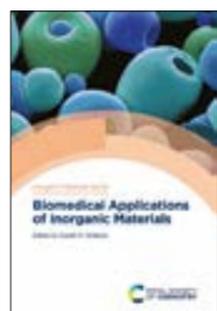
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Gareth R Williams University College London, UK

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Kim Jelfs Imperial College London, UK

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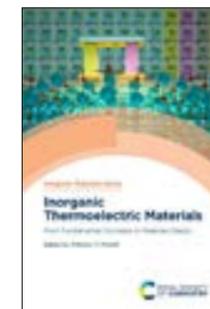
Inorganic Materials Series

Inorganic Thermoelectric Materials

From Fundamental Concepts to Materials Design

Anthony V Powell University of Reading, UK

Thermoelectric devices convert a heat flux directly into electrical power. They afford opportunities to achieve efficiency savings in a variety of applications, through the conversion of otherwise waste heat into useful electrical energy. Implementation of this technology requires new materials that offer better performance and stability and contain readily available and inexpensive elements. Inorganic Thermoelectric Materials reviews the important new families of advanced materials that have emerged and taken the field beyond the long-standing focus on traditional thermoelectric materials. With contributions from global experts, this title will be of interest to advanced undergraduates, postgraduates and researchers.



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The Chemistry of Inorganic Biomaterials

Christopher Spicer University of York, UK

Biomaterials offer the potential to restore and supplement the function of tissues and organs following injury or disease. The use of inorganic materials in the clinic to date has been widespread, in the form of metallic joint replacements and ceramic implants. The Chemistry of Inorganic Biomaterials overviews the underlying chemistry behind the most common and cutting-edge inorganic materials in current use, or approaching use, in vivo. Written in an accessible style, this book will be of interest to advanced undergraduates, postgraduates and researchers in biomaterials, inorganic materials and materials chemistry.



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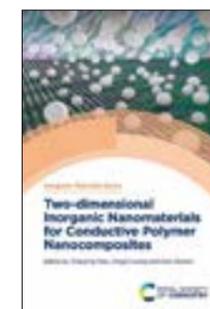


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Two-dimensional Inorganic Nanomaterials for Conductive Polymer Nanocomposites

Chaoying Wan University of Warwick, UK | **Xingyi Huang** Shanghai Jiao Tong University, China | **Chris Bowen** University of Bath, UK

Functional, flexible and lightweight products are in high demand for modern technologies ranging from microelectronics to energy storage devices. The majority of polymers are thermal and electrical insulators, which hinder their use in these applications. This book highlights the synthesis, chemistry and applications of two-dimensional (2D) inorganic nanoplatelets in polymer nanocomposites. Chapters cover technical challenges, such as surface functionalisation, compatibilization, interfacial interaction, dispersion, and manufacturing technologies of the polymer nanocomposites. This title provides a much-needed overview of the field, giving advanced undergraduates, postgraduates and other researchers a convenient introduction to the topic.



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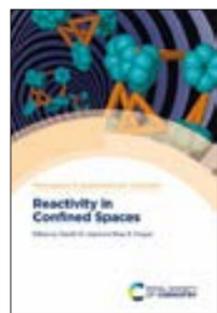
Jonathan Steed Durham University, UK | **Philip Gale** The University of Sydney, Australia

Supramolecular chemistry concerns the structure and function of molecular assemblies formed through weak interactions. These complexes have found diverse applications in materials chemistry, nanoscience, catalysis, food sciences, and medicine, and this has led to a rapid expansion in supramolecular chemistry research. With contributions from high profile international scientists working within the field, each book in the series covers a key concept for graduate-level students and above interested in supramolecular chemistry and its diverse applications. The books are ideal for reference and as state-of-the-art guides, and they aim to enable further developments of new applications through an understanding of the fundamentals and a comprehensive overview of the latest research.

Reactivity in Confined Spaces

Gareth Lloyd Lincoln University, UK | **Ross S Forgan** Glasgow University, UK

The chemistry that occurs within confined spaces is a product of the collective forces that go beyond singular factors. Chapters in this book combine the classical host-guest chemistry with catalysis, reactivity and modern supramolecular chemistry. With contributions from key authors in the field, *Reactivity in Confined Spaces* will be of interest to graduate students and researchers working in supramolecular chemistry, homogeneous catalysis, organic chemistry, materials science and polymer chemistry.



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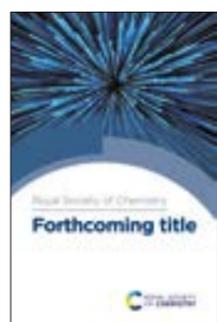


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Structure and Dynamics in Solid-state Inclusion Compounds

Leonard J Barbour Stellenbosch University, South Africa | **Luigi R Nassimbeni** University of Cape Town, South Africa

Recent advances in structural methods and in situ techniques have greatly facilitated the elucidation of crystal and molecular structures. Concurrent advances have also occurred in the development of complementary techniques. This book describes the methods used to elucidate structure–property relationships of solid-state inclusion compounds. In particular, it focuses strongly on structural chemistry and the physical methods used to determine bulk properties. Written by world leaders in the field, this title will appeal to students and researchers working in solid-state organic chemistry, crystal engineering and supramolecular chemistry.



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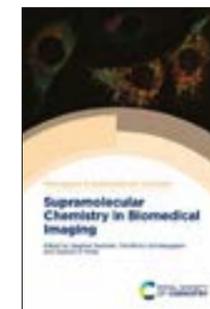
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Monographs in Supramolecular Chemistry

Supramolecular Chemistry in Biomedical Imaging

Stephen Faulkner University of Oxford, UK | **Thorfinnur Gunnlaugsson** Trinity College Dublin, Ireland | **Gearóid Ó Máille** Trinity College Dublin, Ireland

There have been great advances in biomedical imaging techniques in recent years, with supramolecular interactions playing a key role. This book clarifies the current understanding of the techniques used in imaging and the molecular and supramolecular systems used. It caters for academics coming to the field from mainstream supramolecular chemistry and graduate students interested in supramolecular chemistry, imaging agents and imaging techniques for biomedical applications.



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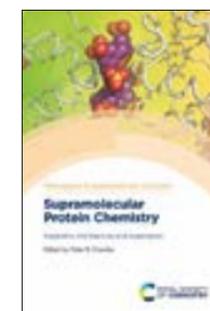
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Supramolecular Protein Chemistry

Assembly, Architecture and Application

Peter B Crowley NUI Galway, Ireland

Building on decades of “host-guest” research, recent years have seen a surge of activity in water-soluble supramolecular receptors for protein recognition and assembly. This book addresses the exciting interface of supramolecular chemistry and protein science. Chapters cover supramolecular approaches to protein recognition, assembly and regulation. Principles outlined will highlight the opportunities that are readily accessible to collaborating chemists and biochemists. *Supramolecular Protein Chemistry* will be of particular interest to graduate students and researchers working in supramolecular chemistry, protein science, self-assembly, biomaterials, biomedicine and biotechnology.



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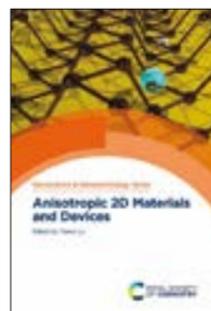
Gabriel Caruntu Central Michigan University, USA | **Shinya Maenosono** Japan Advanced Institute of Science and Technology, Japan | **Neerish Revaprasadu** University of Zululand, South Africa

The possible uses of nanotechnology span many fields from health to the environment and energy; as a result there is a wealth of scientific nanoscience research taking place all over the world. When there is so much information available on the topic, it can be difficult to get a complete overview of the latest developments. The Nanoscience and Nanotechnology Series provides a comprehensive resource of books covering key topics such as the synthesis, characterisation, performance and properties of nanostructured materials and technologies and their applications. With contributions from leading experts in nanoscale research, the books are suitable for graduate student level and above in chemistry, physics, biology, materials science, engineering and medicine wanting to know more about nanoscience.

Anisotropic 2D Materials and Devices

Yuerui Lu Australian National University, Australia

Presenting recent progress in exploring anisotropic 2D materials, the reader will be introduced to phosphorene and its arsenic alloys, monochalcogenides of group IV elements in the form of MX (M = Ge, Sn and X = S, Se, Te), low-symmetry transition-metal dichalcogenide (TMD) materials such as rhenium disulphide (ReS₂) and rhenium diselenide (ReSe₂), and organic 2D materials. Covering many aspects of anisotropic 2D materials, including recent research progress, major obstacles, and future direction, this book will be a useful reference to the scientific communities working in related research fields, especially for materials scientists, chemists, physicists and engineers. This book may also be of use to those in chemical academia and industry more broadly.



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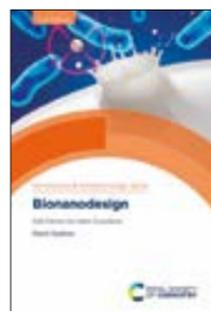
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Old Forms for New Functions 2nd Edition

Maxim Ryadnov National Physical Laboratory, UK

Bionanodesign has been fully revised and updated to bring together contemporary approaches for designing nanostructures that employ naturally-derived self-assembling motifs as synthetic platforms. The overall aim is to compile the existing understanding of rules that govern biomolecular self-assembly into a practical guide to molecular nanotechnology. Written by a world recognised expert, this book provides an authoritative guide to those working in design and development of nanomaterial research in industry and academia, from postgraduate researchers upwards.



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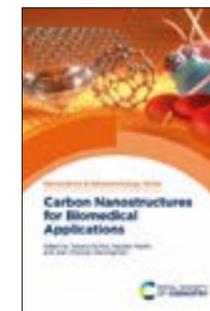
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Carbon Nanostructures for Biomedical Applications

Tatiana Da Ros Trieste University, Italy | **Nazario Martin** Universidad Complutense Madrid | **Jean-Francois Nierengarten** University of Strasbourg, France

Edited by renowned experts in the subject, this book collects and delineates the most notable advances within the growing field surrounding carbon nanostructures for biomedical purposes. Exploration ranges from fundamentals around classifications to toxicity, biocompatibility and the immune response. Emerging classes of materials, such as carbon dots and nanohorns are discussed, with chapters devoted to applications across imaging, drug delivery and tissue scaffolding.



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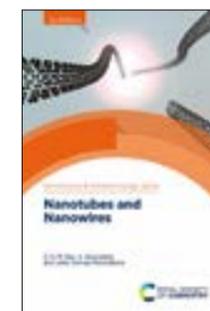
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Nanotubes and Nanowires

3rd Edition

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Nanotubes demonstrate a range of fascinating properties, many of which relate directly to potential applications. Nanowires have been made from a vast array of inorganic materials and provide great scope for further research into their properties and possible applications. Chapters in this book provide a comprehensive and up-to-date survey of the research area, including synthesis, characterisation, properties and applications. This new edition of Nanotubes and Nanowires is ideal both for graduates needing an introduction to the field, as well as for professionals and researchers in academia and industry.



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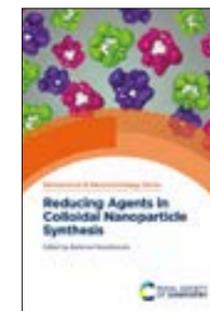


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Reducing Agents in Colloidal Nanoparticle Synthesis

Stefanos Mourdikoudis University College London, UK

Nanoparticles can be synthesised via a number of methods, including laser ablation, thermal decomposition, chemical reduction and polyol synthesis. This book will highlight the role of reducing agents in the chemical synthesis of nanoparticle systems, presenting the main categories of reducing agents, which vary on reactivity, selectivity, availability and toxicity. With contributions from global experts, this title will be appropriate for graduate students and researchers in nanochemistry, colloidal synthesis, inorganic chemistry, organometallic chemistry, chemical engineering, physical chemistry, materials science, biology and physics.



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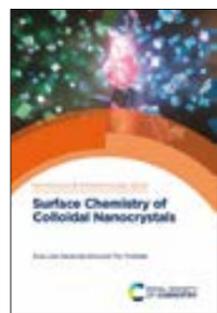
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Surface Chemistry of Colloidal Nanocrystals

Ana Luísa Daniel-da-Silva University of Aveiro, Portugal | **Tito Trindade** University of Aveiro, Portugal

The chemistry of nanomaterials has developed considerably in the past two decades. This book provides insights on the chemistry of inorganic nanoparticles of colloidal nature, with fundamentals on the topic for a broad audience as well as information on the chemical modification of surfaces of several different nanocrystal systems. Written by prestigious scientists, it will be a useful resource for students and researchers working in surface science, nanoscience and materials science as well as those interested in the applications of the nanomaterials.



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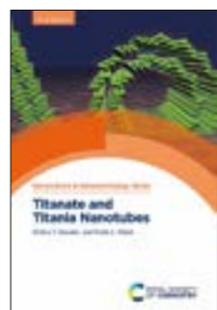
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Titanate and Titania Nanotubes

2nd Edition

Dmitry Bavykin University of Southampton, UK | **Frank Walsh** University of Southampton, UK

While titanium oxides are less popular than carbon nanostructures, they have the marked advantages of low cost and facile synthesis routes that use conventional laboratory techniques and scalable technology; a variety of techniques allow processing of thin and templated layers. The second edition of Titanate and Titania Nanotubes consolidates knowledge of the synthesis, properties and application of nanostructured titanates having various morphologies, including tubular and lamellar forms. The book identifies common principles that can be useful in developing approaches to the synthesis of unknown inorganic nanotubes. Written by leaders in the field, this title will be of interest to students and researchers who experimentally study nanomaterials.



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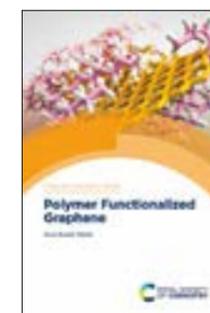
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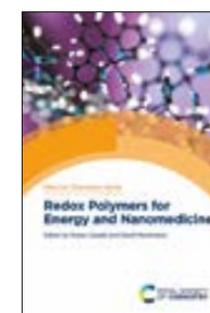


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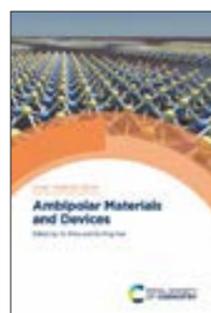
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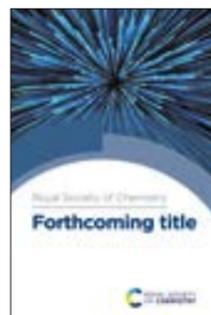


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Bo Wang Beijing Institute of Technology, China

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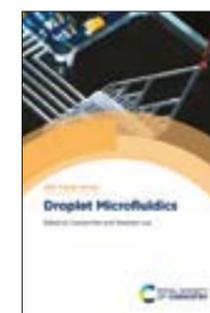
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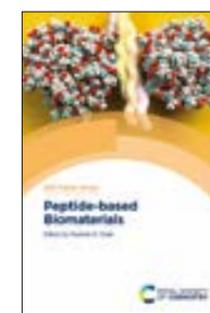


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Mustafa O. Guler The University of Chicago, USA

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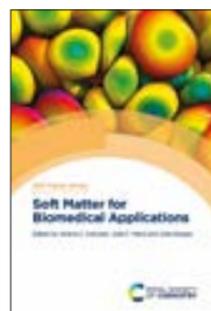
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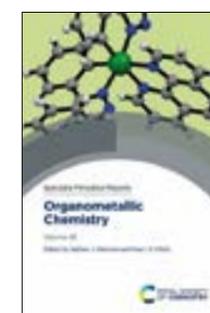
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Volume 43

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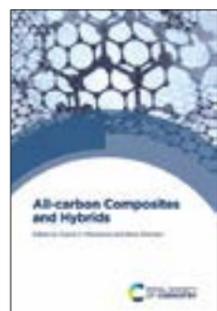
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All-carbon Composites and Hybrids

Oxana V. Kharissova Universidad Autónoma de Nuevo León, Mexico | **Boris Kharisov** Universidad Autónoma de Nuevo León, Mexico

All-carbon composites are carbon materials reinforced with other carbon materials, typically nanostructures such as carbon fibres. There are a large number of all-carbon materials, many of which demonstrate unique and useful sets of properties. Combining and hybridising different carbon materials and nanomaterials together also opens up a number of possibilities to fine-tune the materials for desirable combinations of these properties. This book provides a broad overview of these materials and their uses.



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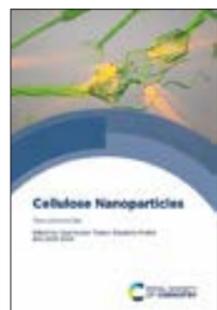
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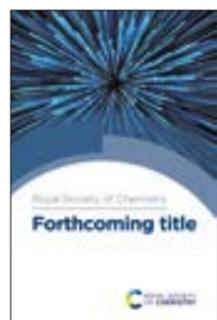
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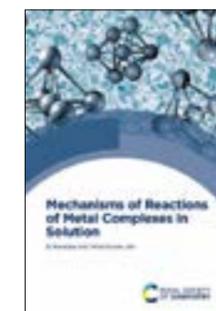
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Professional Reference

Mechanisms of Reactions of Metal Complexes in Solution

D Banerjea Calcutta University, India, University of Kolkata, India | **Sanchita Goswami** Calcutta University, India

Mechanisms of Reactions of Metal Complexes in Solution provides a comprehensive overview of an often-overlooked research area. Despite its importance and recent reshaping of the field, many inorganic chemists have lost an appreciation for the significance of stability constants and the thermodynamic aspects of complex formation. Ideal for newcomers and established researchers in the field this book is a complete treatment of the area covering advanced topics with relevance to biomedical applications, extraction metallurgy, food chemistry and a wealth of other industrial processes and research areas. The book will be of particular interest to postgraduates with an interest in coordination chemistry, catalysis, supramolecular chemistry, metallobiology and related aspects of biochemistry.



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Antonio Sgamellotti Accademia Nazionale dei Lincei, University of Perugia, Italy | **Brunetto Giovanni Brunetti** INSTM, University of Perugia, Italy | **Costanza Miliani** CNR-ISTM, Perugia, Italy

Science and art are increasingly linked to the study and conservation of works of art. With an emphasis on current artists, the reader will learn about how these protagonists developed new and meaningful techniques, innovative methodologies and artistic languages. With contributions from art historians, curators, scientists and artists, this book will appeal to those scientifically interested in the area, students studying art conservation as well as those actively working in conservation science of contemporary art.



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