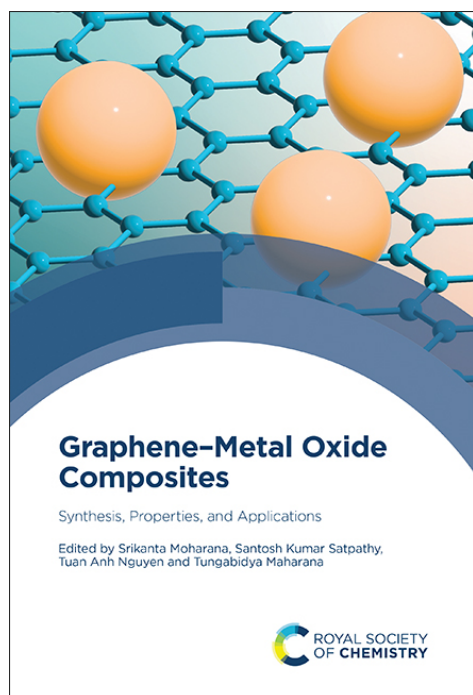


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Graphene–Metal Oxide Composites

Synthesis, Properties, and Applications

Srikanta Moharana Centurion University of Technology and Management, India

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Synopsis

Combining graphene with metal oxides offers new opportunities in areas such as biomedicine, renewable energy, and optoelectronics. This book discusses various approaches to the synthesis, processing, and characterisation of graphene–metal composites. Several chapters address the individual properties of composites while others focus on specific applications. Written with engineers and industrial researchers in mind, academic researchers will also benefit from this concise and contemporary resource.

Brief Contents

- Concepts and Recent Advancements of Graphene-based Metal Oxide Composites
- Graphene–Metal Oxide Composites: Structure, Properties and Applications
- Conventional Approaches to Synthesis and Deposition
- Graphene and Its Derivatives: Synthesis, Properties, and Applications
- Physical and Chemical Properties of Polymer Composites
- Magnetic Properties of Graphene-based Composites
- Effect of Rare-earth Impurities on the Structural, Dielectric and Electrical Properties
- Synthesis and Application of Graphene-based Composites
- Electrical and Chemical Properties of Polymer Percolative Composites
- Poly(Vinylidene Fluoride) Composites for Dielectric Applications
- Potential Candidates for Electronic and Optoelectronics
- Fabrication for Electromagnetic Shielding and Supercapacitor Applications
- Graphene/Transition Metal Oxide Nanocomposites for Oxygen Reduction Reaction
- Graphene–Metal Oxide Composite Electrode Materials for LIBs and SIBs
- Energy Storage Applications of Graphene–Metal Oxide Composites
- Graphene–Metal Oxide Composite Materials for Biomedical Applications
- Graphene–Metal Oxide-based Hybrid Materials for Fuel Cell Applications
- Application of Graphene–Metal Oxide Composites in Solar Cells
- Graphene–Metal Oxide Composite-based LEDs and Lasers
- Composites as Novel Adsorbents for Removal of Heavy Metals
- Composites for Electrochemical Energy Storage and Conversion
- Application of Composite Materials in Photocatalysis and Environment-related Areas
- Photoelectrochemical Applications of Graphene–Metal Oxide Composites
- Graphene–Metal Oxide Composite Materials for Supercapacitor Applications
- Therapeutic and Tissue Engineering Applications
- Promising Adsorbents for the Purification of Water
- Graphene and Its Metal Oxide Composites for Industrial Applications

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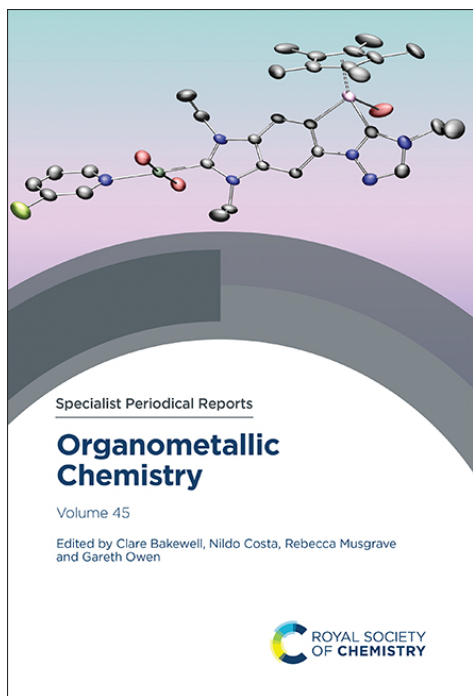
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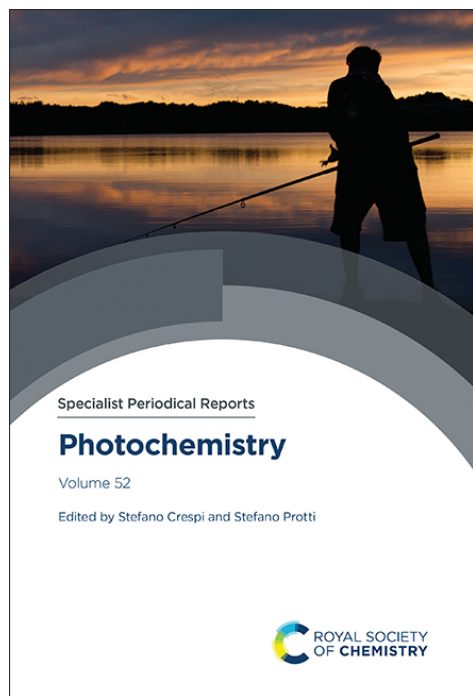
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Photochemistry

Volume 52

Stefano Crespi University of Groningen, The Netherlands

Stefano Protti University of Pavia, Italy

Synopsis

Reviewing photo-induced processes that have relevance to a wide number of academic and commercial disciplines, this volume reflects the current interests in chemistry, physics, biology and technology. Section one covers organic and computational aspects of photochemistry while Section two highlights topics like photomagnetism in Prussian blue and Prussian blue analogues, *in silico* photochemistry and delayed fluorescence in photosynthetic systems. The final section covers the SPR lectures on photochemistry. The volume continues to provide essential reading for postgraduates, academics and industrialists working in the field of photochemistry, enabling them to keep on top of the literature.

Brief Contents

- Part 1. Periodical Reports: Organic and Computational aspects (2022–2023)
 - Introduction of the year 2023
 - Computational photochemistry: advances in 2022–2023
 - Organic aspects: photochemistry of alkenes, dienes and polyenes (2022–2023)
 - Strategic use of light-driven transformations in recent total syntheses
 - Recent advances in photoorganocatalysis (2019–2023)
- Part 2. Highlights
 - Photomagnetism in Prussian blue and Prussian blue analogues: between coordination chemistry and solid state physics
 - Advances in 4- π -photocyclisation reactions
 - *In silico* photochemistry
 - Singlet oxygen in organic photochemistry
 - Delayed fluorescence in anoxygenic photosynthesis
 - Principles and recent developments in visible-light photoclick chemistry
 - Mechanistic investigation of light-driven catalysis for solar fuel formation
- Part 3. SPR Lectures on Photochemistry
 - Gold catalysis under visible light
 - Perfluoroalkylation of aliphatic substrates *via* photoinduced radical processes
 - Photocycloadditions of aromatic compounds with alkenes: the role of spin multiplicity

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