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## The Medicinal Chemist's Guide to Solving ADMET Challenges

Patrick Schnider Roche, Switzerland

### Synopsis

Medicinal chemistry is a complex science that lies at the very heart of drug discovery. Poor solubility, complex metabolism, tissue retention and slow elimination are just some of the properties of investigational compounds that present a challenge to the design and conduct of ADMET studies. Medicinal chemistry experience and knowledge relating to how a lead structure was modified to solve a specific problem is generally very challenging to retrieve. Presented in a visual and accessible style, this book provides rapid solutions to overcome the universal challenges to optimizing ADMET.

**Series:** Drug Discovery

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**Pages:** 574

**BIC:** PNN, PSB

**THEMA:** MKGT, PNN, PSB

**BISAC:** SCI007000, SCI013020

### Brief Contents

- Overview of Strategies for Solving ADMET Challenges
- Tactics to Improve Solubility
- Optimisation of Passive Permeability for Oral Absorption
- Targeting Gastrointestinal Uptake Transporters
- Drug Efflux Transporters: P-gp and BCRP
- OATs and OCTs: The SLC22 Family of Organic Anion and Cation Transporters
- OATPs: The SLCO Family of Organic Anion Transporting Polypeptide Transporters
- Bile Salt Export Pump (BSEP) Inhibition
- Cytochrome P450 Metabolism
- Cytochrome P450 Induction
- Strategies to Mitigate CYP450 Inhibition
- Aldehyde and Xanthine Oxidase Metabolism
- Glucuronidation
- Sulfation
- Reactive Metabolites
- Genotoxicity
- Drug-induced Photosensitivity
- Drug-induced Phospholipidosis
- Cardiac Ion Channel Inhibition

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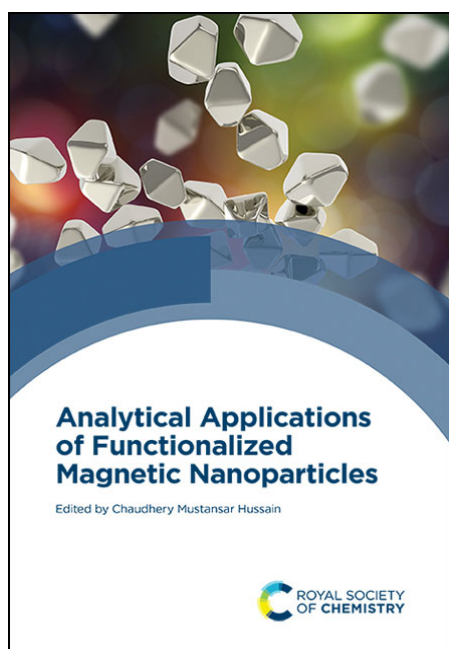
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# Advance Book Information



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## Analytical Applications of Functionalized Magnetic Nanoparticles

Chaudhery Mustansar Hussain New Jersey Institute of Technology, USA

### Synopsis

This book provides quality research and practical guidance to analytical scientists, researchers, engineers, quality control experts and laboratory specialists. It covers applications of functionalized MNPs in all stages of analytical procedures. The book provides an integrated approach for advanced analytical methods and techniques for postgraduates and researchers looking for a reference outlining new and advanced techniques surrounding the applications of functionalized nanomaterials in analytical chemistry.

### Brief Contents

- Analytical Applications of Functionalized MNPs
- Improving Stabilization, Biocompatibility and/or Uptake Efficiency
- Improvement of Adsorbing Properties of MNPs by Bioorganic Substrate-mediated Synthesis
- Sample Pre-treatment
- Application of Functionalized MNPs for Organic Analyte Extraction
- Graphene-based Sorbents for Modern Magnetic Solid-phase Extraction
- MNPs as an Efficient Tool for Analyte Extraction
- Functionalized MNPs for Solid-phase Extraction
- Use of Functionalized MNPs in Modern Separation Techniques
- Chromatographic Applications of MNPs
- Functionalized MNPs in Detection Stage of Analysis/Miniaturization Devices
- MNP-based Sensor Development to Evaluate Food Quality and Safety
- Functionalized MNP-based Biosensors
- Sensing Applications by Functionalized MNPs
- Magnetoresistance-based Biosensors
- Analytical Applications of Molecularly Imprinted Polymer-decorated MNPs
- Characterization of Functional MNP-modified Polymeric Composites by Computer Modeling
- Functionalized MNP-based Sensors for Point-of-care Applications
- Fourth Industrial Revolution (4IR) and Functionalized MNPs
- Important Aspects of Safety, Risk and ELSI
- Toxicity, Safety and Legal Aspects of Functionalized MNPs
- Functionalization of MNPs for Tomorrow's Applications
- Future of Functionalized MNPs in Analytical Chemistry

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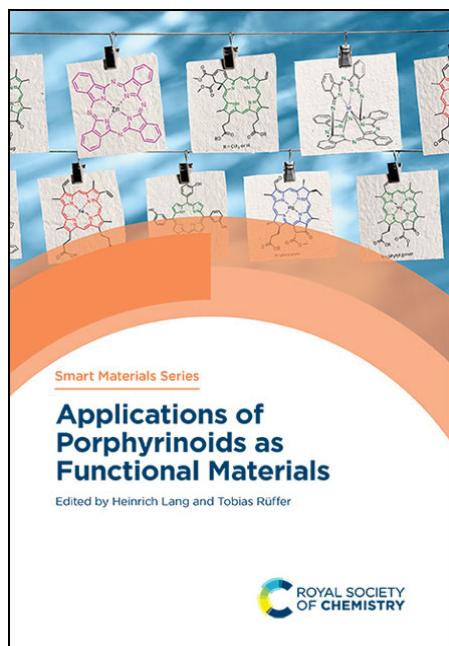
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## Applications of Porphyrinoids as Functional Materials

Heinrich Lang Technische Universität Chemnitz, Germany  
Tobias Rüffer Technische Universität Chemnitz, Germany

### Synopsis

Porphyrinoids are pyrrole-containing macrocycles with varied core sizes, which have found many applications beyond the original chemical and biological aspects. This book gives an overview of the applications and potential applications of porphyrins and related macrocycles as smart or functional materials. With contributions from leading global researchers, this title will be of interest to graduate students and researchers across materials science, chemistry, physics and medicine.

### Brief Contents

- Fundamentals and Applications in Solution-phase Electrochemistry and Electrocatalysis
- Electrochemistry-driven Electron-transfer Processes in Porphyrinoids
- Porphyrinoids as Active Masses in Electrochemical Energy Storage
- Self-assembly on Crystalline Surfaces: From Phthalocyanines to Porphyrins
- Chemical Vapour Deposition of Porphyrins
- Liquid Crystalline Phthalocyanines
- Recent Progress in Porphyrin Derivatives Used in Organic Thin-film Solar Cells
- Photophysical Characterization of Porphyrinoids
- Porphyrinoids for Photodynamic Therapy
- Porphyrins and Hydroporphyrins for In Vivo Bioimaging
- Porphyrinoids in Association with Nanomaterials for Water Purification
- Porphyrinoids Used for Photodynamic Inactivation against Bacteria
- Applicability of Highly Functional Phthalogens

**Series:** Smart Materials Series

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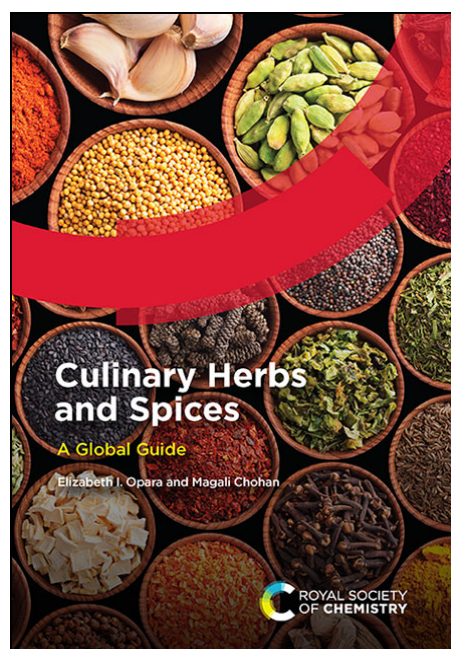
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**BIC:** TDCT, VXHT, WBTH  
**THEMA:** PND, TDCT, VXHT, WBTH  
**BISAC:** CKB040000, HEA011000, TEC012000

## Culinary Herbs and Spices A Global Guide

Elizabeth I Opara Kingston University, UK  
Magali Chohan St Mary's University, London, UK

### Synopsis

Culinary herbs and spices have been recognised for their dietary and medicinal uses for centuries. Research is acknowledging their health-promoting properties as well as their therapeutic potential. This book brings together current knowledge of commonly used culinary herbs and spices. The book is a central source of information for those who have a general interest in these foods, are studying plant and food science and nutrition, and who have an interest in the culinary arts.

### Brief Contents

- An Introduction to Culinary Herbs and Spices: A Global Guide
- Allspice
- Basil
- Bay Leaf
- Black Pepper
- Caraway
- Cardamom
- Chives
- Cinnamon
- Clove
- Coriander or Cilantro Coriander/Chinese Parsley
- Cumin
- Dill
- Fennel
- Fenugreek
- Ginger
- Lemon Grass
- Mint
- Nutmeg
- Oregano
- Paprika
- Parsley
- Rosemary
- Saffron
- Sage/Common Sage
- Star Anise/Chinese Anise
- Sumac
- Sweet Marjoram
- Tarragon
- Thyme
- Turmeric

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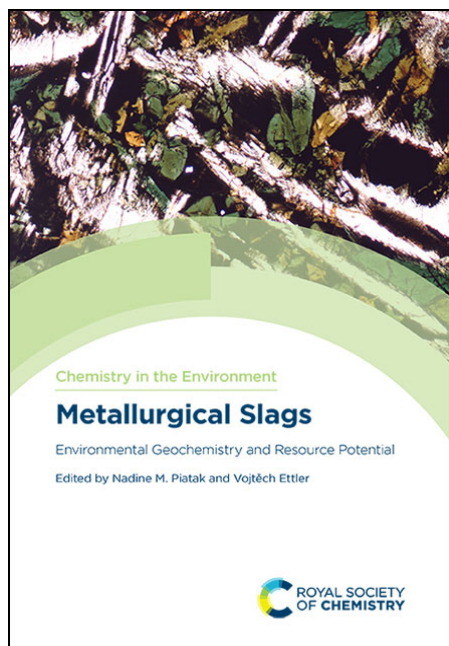
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**Series:** Chemistry in the Environment  
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**ISBN:** 978-1-78801-887-6  
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**Publishing date:** 13/08/2021  
**Target Audience:** Professional and scholarly  
**Format:** Hardback  
**Size:** 234 x 156 (Royal 8vo) mm  
**Pages:** 301  
**BIC:** RBGK, RNH, RNP, RNU  
**THEMA:** RBGK, RNH, RNP, RNU  
**BISAC:** SCIO13080, SCIO26000

## Metallurgical Slags Environmental Geochemistry and Resource Potential

Nadine M. Piatak United States Geological Survey, USA  
Vojtěch Ettler Charles University, Czech Republic

### Synopsis

Metallurgical slags are generated as a by-product of smelting during ironmaking, steelmaking, and the production of ferroalloys and non-ferrous metals. The formation conditions result in complex chemical and mineralogical characteristics unique to slags alone. Historically slags have been discarded as a waste product and, through release of potentially toxic trace elements, represent a hazard to the environment and human health. However, increasingly we are realizing the resource potential of what was previously thought of as waste, thus reducing the environmental impact and taking a step closer to a circular economy. This book is a definitive reference on the environmental geochemistry and resource potential of metallurgical slags

### Brief Contents

- Introduction: Metallurgical slags - Environmental Liability or Valuable Resource?
- Metallurgical Overview and Production of Slags
- Geochemistry and Mineralogy of Slags
- Weathering of Slags
- Slag Leaching Properties and Release of Contaminants
- Environmental Impact of Slag Particulates
- Diverse Applications of Slag in the Construction Industry
- Environmental Applications of Slag
- Secondary Metal Recovery from Metallurgical Slags

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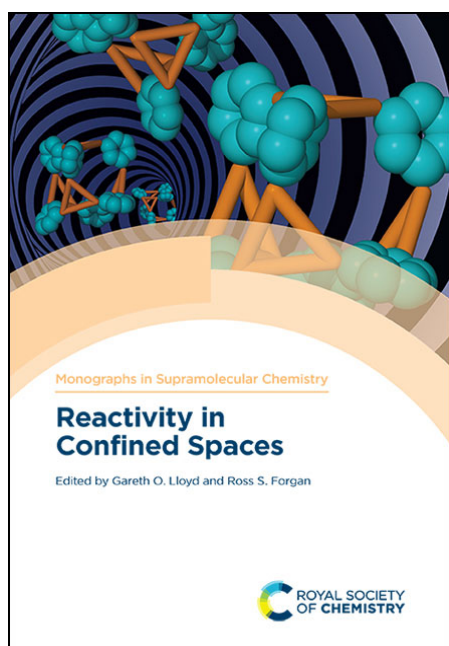
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**Target Audience:** College/higher education  
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**Pages:** 450  
**BIC:** PNN, PNRD, TGM  
**THEMA:** PNN, PNRD, TGM  
**BISAC:** SCIO13040, SCIO13050, TECO21000

## Reactivity in Confined Spaces

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

### Synopsis

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.

### Brief Contents

- Macrocycles, Catenanes and Rotaxanes
- Catalytic Strategies Within the Confined Spaces of Coordination Cages
- Light-induced Processes in Coordination Cages
- Stabilising Reactive Intermediates in Cages
- Reactivity in a Self-assembled Organic Host
- Properties and Reactivities of Metal Complexes Within Organic Nanocontainers
- Catalysis at the Confined Interface of Supramolecular Gels
- Catalysis in Confined Space: Relationship Between Metal–Organic Frameworks and Discrete Coordination Cages
- Solid/Gas Reactivity of Organometallic Species in Confined Spaces
- Topochemistry Meets Supramolecular Chemistry: Opportunities for Targeted Organic Synthesis in Molecular Crystals
- Stabilising and Characterising Homogeneous Catalysts in MOFs
- Biomimetic Metal–Organic Frameworks: Construction and Catalytic Performance
- Catalytic Nanoparticles in Metal–Organic Frameworks
- Atomically Precise Metal Clusters in Confined Spaces of Metal–Organic Frameworks

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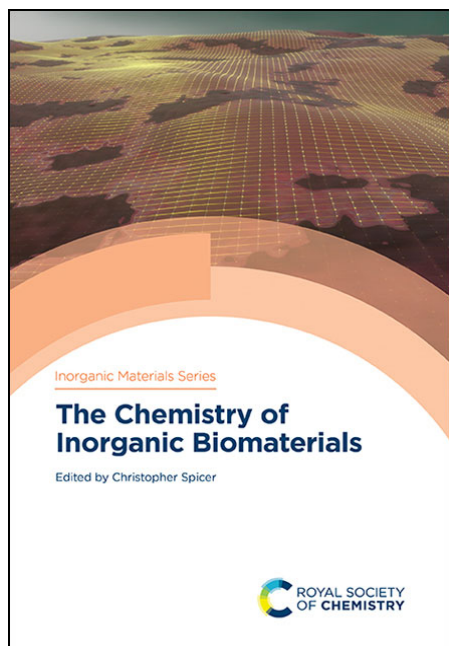
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## The Chemistry of Inorganic Biomaterials

Christopher Spicer University of York, UK

### Synopsis

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.

### Brief Contents

- Metallic Implants for Biomedical Applications
- Calcium Phosphate Cements: Structure Related Properties
- Inorganic-Organic Hybrids: Mimicking Native Bone
- Bioelectronics and Neural Interfaces
- The Effects of Surface Properties on the Antimicrobial and Biototoxicity of Biomaterial Metals and Metal Coatings

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