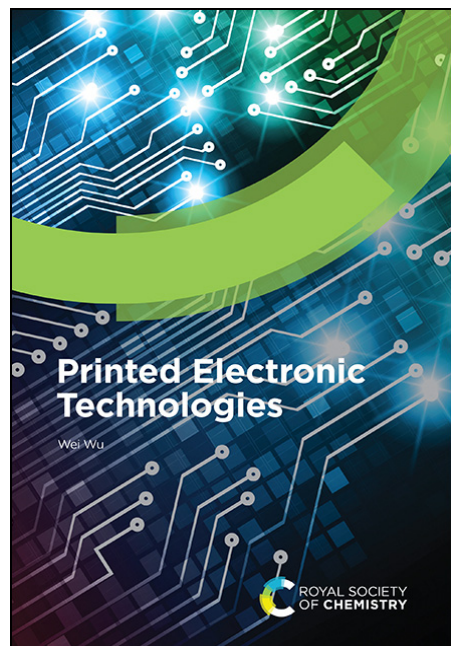


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Printed Electronic Technologies

Wei Wu Wuhan University, China

Synopsis

Modern printing technology has paved the way for the fabrication of thin, inexpensive electronics, with applications including wearable devices, smart packaging, healthcare, and in the automotive industry. This book describes the key technologies for printed electronics, including explanations of the materials, mechanisms, printing methods and processes, along with examples of printed devices and their applications. This title will be essential reading for students on courses across materials science, electronic science, manufacturing and engineering, as well as those with an interest in printed electronics.

Brief Contents

- Introduction to Printed Electronics
- Principle and Mechanism of Printed Electronics
- Printing Techniques with a Printing Master
- Inkjet Printed Electronics Technology
- Printable Inorganic Materials for Printed Electronics
- Printable Organic Materials for Printed Electronics
- Conventional Substrates for Printed Electronics
- Post-treatment for Printed Electronics
- Printed Electronics Applications: Conductive Tracks and Patterns, Printed Circuits, Functional Electrodes and Flexible Heaters
- Printed Electronics Applications: Microelectronic, Optoelectronic Devices and Displays
- Printed Electronics Applications: Energy Conversion and Storage Devices
- Printed Electronics Applications: Sensors, Actuators and Biosensor Applications
- Integrated Printed Electronics Systems and Applications
- Fully-printed Electronics Technologies
- Outlooks and Perspectives

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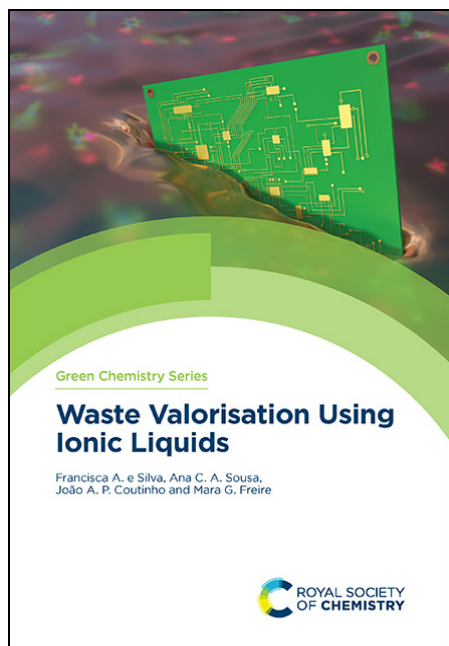
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Series: Green Chemistry Series

ISSN: 1757-7039

Publisher: Royal Society of Chemistry

ISBN: 978-1-83916-399-9

Price: £149.00 | \$205.00

Publishing date: 08/07/2022

Target Audience: Professional and scholarly

Format: Hardback

Size: 234 x 156 (Royal 8vo) mm

Pages: 191

BIC: RNH, RNU, TDC

THEMA: RNH, RNU, TDC

BISAC: SCIO13060, TEC010020

Waste Valorisation Using Ionic Liquids

Francisca e Silva University of Aveiro, Portugal

Ana Sousa University of Évora, Portugal

Mara Freire University of Aveiro, Portugal

João Coutinho University of Aveiro, Portugal

Synopsis

Modern societies produce high loads of waste, which may cause environmental contamination, valuable resources loss and disposal problems. In the circular economy concept nothing would ever become waste and everything can be re-usable or recoverable. Ionic liquids provide a potential route for valorisation of different waste types. Covering different types of waste, including municipal, industrial, electronic, and medical waste, this book aims to deliver a comprehensive perspective on the application and commercialization of ionic liquids towards waste valorisation.

Brief Contents

- Waste and Circular Economy
- Ionic Liquids as Technological Solutions in Waste Valorisation
- Municipal Waste
- Industrial Waste
- E-waste
- Medical and Biological Samples Waste
- Patented and Commercialized Ionic-liquid-based Processes for Waste Valorisation
- Critical Considerations for Developing Sustainable Ionic-liquid-based Valorisation Strategies for Waste
- Future Perspectives and Concluding Remarks

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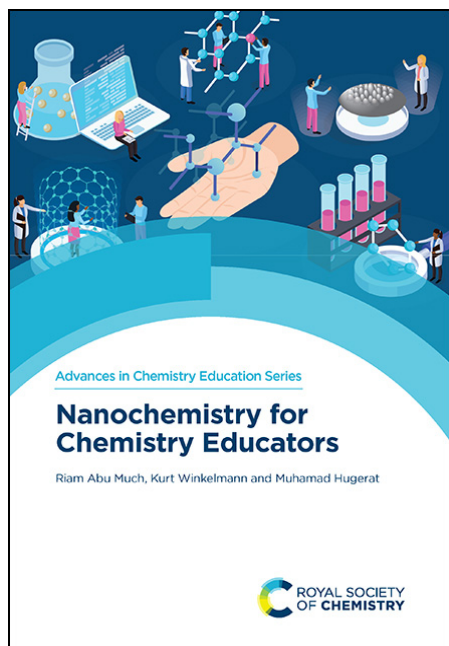
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Series: Advances in Chemistry Education Series

ISSN: 2056-9335

Publisher: Royal Society of Chemistry

ISBN: 978-1-78801-886-9

Price: £99.99 | \$140.00

Publishing date: 15/06/2022

Target Audience: Professional and scholarly

Format: Hardback

Size: 234 x 156 (Royal 8vo) mm

Pages: 172

BIC: JNA, JNT, JNU, PN

THEMA: JNA, JNT, JNU, PN

BISAC: EDU037000, EDU046000, SCIO13000

Nanochemistry for Chemistry Educators

Riam Abu Much The Academic Arab College for Education, Israel

Kurt Winkelmann Florida Institute of Technology, USA

Muhamad Hugerat The Academic Arab College for Education, Israel

Synopsis

For the first time, this book sets out ways to teach the science of nanochemistry at a level suitable for pre-service and in-service teachers in middle and secondary school. The authors draw upon peer-reviewed science education literature for experiments, activities, educational research, and methods of teaching the subject.

Brief Contents

- Nanotechnology and Chemistry: The Unseen Scale with Magnificent Impact
- Teachers' and Students' Awareness of and Attitudes toward Nanoscience and Nanotechnology
- Sharing Nanotechnology with Students
- Incorporating Nanochemistry in the Chemistry Curriculum
- Activities for Teaching Nanochemistry
- Nanochemistry as a Relevant Concept in Teaching Chemistry
- Nanoliposomes as a Model for Teaching Nanochemistry
- Social and Ethical Issues of Nanotechnology

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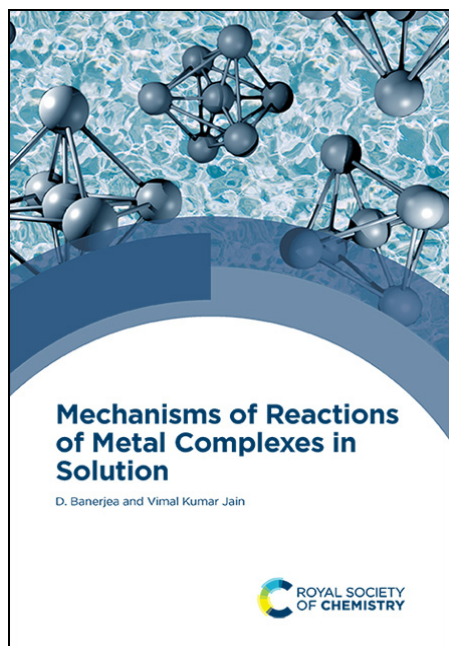
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Publisher: Royal Society of Chemistry

ISBN: 978-1-83916-186-5

Price: £179.00 | \$250.00

Publishing date: 22/06/2022

Target Audience: College/higher education, Professional and scholarly

Format: Hardback

Size: 234 x 156 (Royal 8vo) mm

Pages: 518

BIC: PNK, PNR

THEMA: PNK, PNR

BISAC: SCIO13030, SCIO13050

Mechanisms of Reactions of Metal Complexes in Solution

Debabrata Banerjee University of Kolkata, India
M K Bharty Banaras Hindu University, India

Synopsis

The study of the mechanism of metal complex reactions is a thriving research field in inorganic chemistry. This book outlines the key principles of determining kinetics and mechanisms of metal complex reactions in solution as well as techniques and challenges for studying reaction rates. Proceeding logically through the following chapters, the principles are then extensively used in a comprehensive account of different reactions of metal complexes from ligand replacement reactions and isomerisation to electron transfer and photochemical reactions. This book is an ideal single resource on the principles and most up to date research in the area for postgraduates and researchers in inorganic chemistry, coordination chemistry, catalysis, supramolecular chemistry and related aspects of biochemistry.

Brief Contents

- Reactions of Metal Complexes
- Techniques for Following Reactions and Factors Affecting Rates
- Ligand Replacement Reactions of Metal Complexes of Coordination Number Four and Higher
- Ligand Replacement Reactions of Octahedral Complexes
- Catalysed Reactions and Formation Reactions
- Isomerization, Optical Inversion and Racemization Reactions
- Electron Transfer Reactions
- Activation of Molecules by Coordination and Reactivity of Coordinated Ligands
- Photochemical Reactions of Metal Complexes

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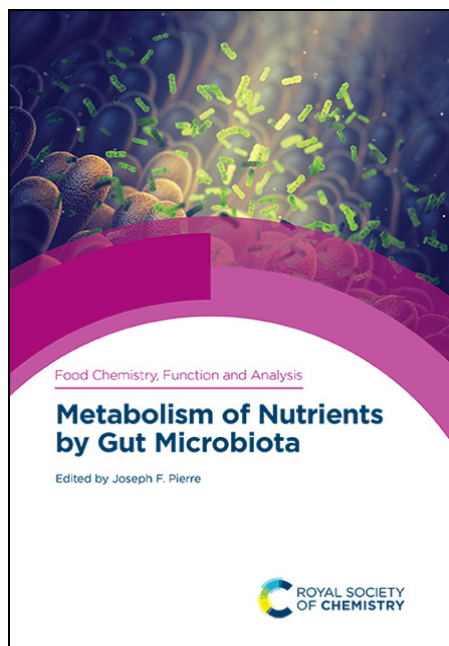
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Series: Food Chemistry, Function and Analysis

ISSN: 2398-0656

Publisher: Royal Society of Chemistry

ISBN: 978-1-78801-748-0

Price: £123.00 | \$170.00

Publishing date: 01/07/2022

Target Audience: Professional and scholarly

Format: Hardback

Size: 234 x 156 (Royal 8vo) mm

Pages: 213

BIC: MBNH3, PNF, PSB

THEMA: MBNH3, PNF, PSB

BISAC: MED060000, SCIO07000, SCIO13010

Metabolism of Nutrients by Gut Microbiota

Joseph F Pierre University of Wisconsin-Madison, USA

Synopsis

This book highlights emerging functional and mechanistic research findings that illustrate the inner workings of the dietary-microbial-host relationship to metabolic regulation. Discussing how diet regulates microbial function with metabolic implications for human health, the chapters are designed to cover the broad concepts of microbial-host interactions under the dietary influences of specific macronutrients, micronutrients, small molecule generation, bile acid circulation, with inclusion of later clinical chapters encompassing topics like bariatric surgery and current understanding of probiotics, prebiotics, and synbiotics. In a nutshell, different micronutrients affect the gut and are absorbed in different ways, a better understanding of this relationship is one of the most exciting parts of functional food research.

Brief Contents

- Introduction and Background to Microbiome Research
- Metabolism of Dietary Carbohydrates by Intestinal Bacteria
- The Microbiome and Amino Acid Metabolism
- Fat Absorption, Metabolism, and Global Regulation
- Probiotics, Prebiotics, and Synbiotics in Human Health
- Microbial Drug Interactions and Human Health
- Early Life Microbiome Colonization and Human Health
- The Gut Microbiome and Metabolic Surgery

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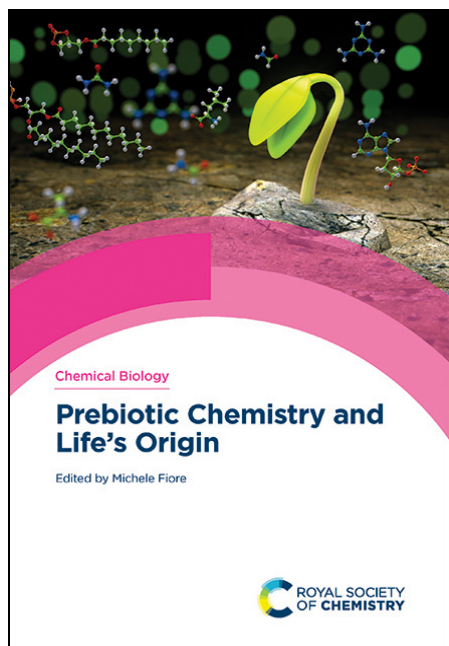
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Prebiotic Chemistry and Life's Origin

Michele Fiore University Claude Bernard Lyon 1, France

Synopsis

How life originated from an inanimate mixture of organic and inorganic compounds on the primordial Earth remains one of the great unknowns in science. This origin of life, or abiogenesis, continues to be examined theoretically and experimentally in the context of prebiotic conditions. This book provides a broad but in-depth analysis of the latest discoveries in prebiotic chemistry from the microscopic to the macroscopic scale, utilising experimental insight to provide a bottom up approach to provide a plausible explanation as to how life arose. With contributions from global leaders, this book is a reference for postgraduate students and a single source of comprehensive information on the latest technical and theoretical advancements for researchers.

Brief Contents

- Origin of the Universe and Planetary Systems
- Geoastronomy: Rocky Planets as the Lavosier-Lomonosov Bridge from the Non-living to the Living World
- First Steps of Prebiotic Chemistry Catalyzed by Minerals and Metals
- Prebiotic Condensing Agents
- Soft Matter Science in Prebiotic Chemistry and the Origins of Life
- The Miller-Urey Experiment's Impact on Modern Approaches to Prebiotic Chemistry
- From Amino Acids to Peptides Before the Coming of Ribosomes
- Prebiotic Chemistry of Nucleobases and Nucleotides
- Prebiotic Amphiphiles: The Systems Chemistry Perspective
- The Handy Formamide Model System for Prebiotic Chemistry
- How Did the Proteome Emerge from Pre-biotic Chemistry?
- Investigating Prebiotic Protocells for an Understanding of the Origin of Life: A Comprehensive Perspective Combining the Chemical, Evolutionary and Historical Aspects
- Toward Evolution in Chemical Reaction Networks
- New Directions for an Experimental Approach to the Chemistry of the Origin of Life

Series: Chemical Biology

ISSN: 2055-1975

Publisher: Royal Society of Chemistry

ISBN: 978-1-78801-749-7

Price: £169.00 | \$235.00

Publishing date: 29/06/2022

Target Audience: College/higher education, Professional and scholarly

Format: Hardback

Size: 234 x 156 (Royal 8vo) mm

Pages: 494

BIC: PNN, PSAJ, PSB, PSC

THEMA: PSAF, PSAJ, PSB, PSC, PSE

BISAC: SCIO07000, SCIO19000, SCIO27000, SCIO72000

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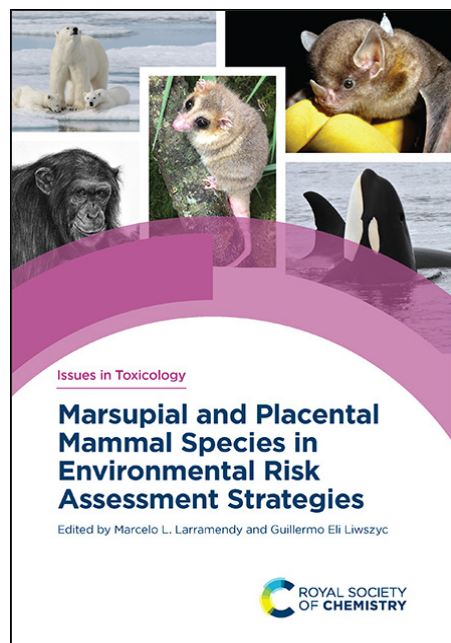
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Series: Issues in Toxicology

ISSN: 1757-7179

Publisher: Royal Society of Chemistry

ISBN: 978-1-83916-198-8

Price: £149.00 | \$205.00

Publishing date: 24/06/2022

Target Audience: Professional and scholarly, College/higher education

Format: Hardback

Size: 234 x 156 (Royal 8vo) mm

Pages: 234

BIC: PSAF, PSAK, PSBT, PSVW71

THEMA: PSAF, PSAK, PSB, PSVM1

BISAC: SCIO13090, SCIO20000, SCIO29000, SCIO70030

Marsupial and Placental Mammal Species in Environmental Risk Assessment Strategies

Marcelo L Larramendy National University of La Plata, Argentina

Guillermo Liwzyc University of Helsinki, Finland

Synopsis

With the expansion of human settlements and the environmental changes brought on by human activity and pollutants, toxicology and risk assessment of mammal species is becoming increasingly of interest to toxicologists involved in environmental research. This book focuses specifically on environmental risk assessment in marsupial and placental mammals. This book will be an ideal companion to toxicologists and ecologists interested in risk assessment in the environments of mammals. The book will be of interest to those with an interest in the impact introduced by human activity and workers in conservation biology, biological invasion, biocontrol and habitat management.

Brief Contents

- General Aspects – Current and Further Perspectives
- Cenozoic South American Metatherians (Mammalia, Theria) as Indicators of Climate–Environmental Changes
- *Didelphis virginiana* (Marsupialia, Didelphimorphia): A Proposal for Its Use as Biomonitor of Environmental Pollution
- An Arboreal Marsupial as an Indicator of Forest Degradation
- The Physiological Ecology of the Enigmatic Colocolo Opossum, the Monito Del Monte (Genus *Dromiciops*) and Its Role as a Bioindicator of the Broadleaf Biome
- Organochlorine Pesticides in Rivers from Riparian Cloud Forests: Prediction of Concentrations in the Fruit Bat *Sturnira hondurensis*
- Marine Mammals as Indicators of Environmental Pollution and Potential Health Effects
- Heavy Metal Impacts: An Evaluation of Toxicological Concern in Stranded Odontocetes in Southern South America
- Reproductive and Teratogenic Effects of Pesticides on Great Apes (Hominidae)
- Epilogue and Final Remarks

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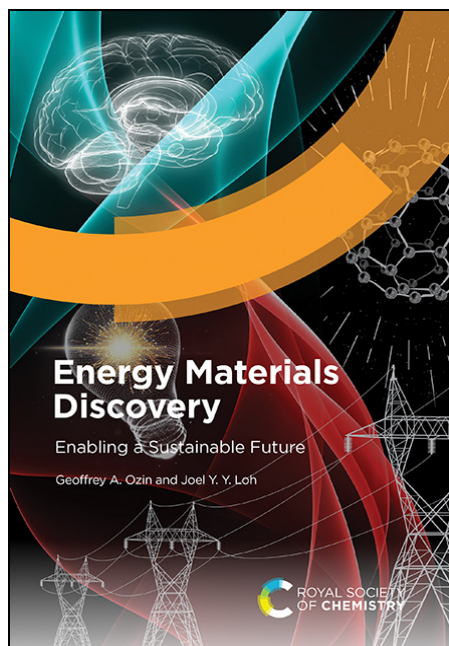
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ISBN: 978-1-83916-316-6
Price: £125.00 | \$175.00
Publishing date: 13/06/2022
Target Audience: Professional and scholarly, College/higher education
Format: Hardback
Size: 234 x 156 (Royal 8vo) mm
Pages: 475
BIC: PHF, RNU, THX
THEMA: 4TC, PHF, RNU, THV
BISAC: SC1024000, TEC010000, TEC021000

Energy Materials Discovery Enabling a Sustainable Future

Geoffrey A Ozin University of Toronto, Canada
Joel Y Y Loh University of Toronto, Canada

Synopsis

Documenting, through the eyes of a practicing materials chemist, an epic journey to make the energy transition from non-renewable to renewable forms possible, this unique book will crosscut the disciplines of chemistry, physics, materials science and engineering. It is mainly about a bottom-up synthetic chemistry approach to energy materials rather than a top-down engineering physics methodology. A distinctive feature of the book is the inclusion of the use of artificial intelligence, machine learning and robotic materials discovery. Helping many students and researchers, funding agencies and industries, media and investors to understand the story of energy materials, the book will be a unique addition to the literature.

Brief Contents

- Energy Makes the World Go Around
- How Does a Materials Chemist Think?
- Energy Conversion Materials, Parts I & II
- Energy Conversion Materials, Part III
- Energy Conversion Materials, Part IV
- Energy Storage Materials, Part I
- Energy Storage Materials, Part II
- Energy Storage Materials, Part III
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