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Series: Chemical Biology

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**Pages:** 668

BIC: PGZ, PNN, PSB, PSD THEMA: PGZ, PNN, PSB, PSD

**BISAC:** SCI007000, SCI013040, SCI066000

# Chronobiology and Chronomedicine From Molecular and Cellular Mechanisms to Whole Body Interdigitating Networks

**Germaine Cornelissen** University of Minnesota, USA **Tsuyoshi Hirota** Nagoya University, Japan

# **Synopsis**

This book reviews the mechanisms underlying circadian rhythms and illustrate the role of the brain's suprachiasmatic nuclei in the 'pacemaking' process and the effects caused by 'clock genes' present in almost all cells. It is organised to be an ideal introduction for postgraduates in various fields, reviewing developments and outlining methods to show the depth and breadth of chronobiology and chronomedicine. It is also an invaluable companion to researchers and healthcare professionals working in the field with an interest in developing novel therapeutic approaches.

# **Brief Contents**

- Circadian Clocks in Mammals
- Synchronizers of Circadian Rhythms
- Inter-modulating Multi-frequency Rhythms
- The Nervous System
- The Circadian-Hypoxia Link
- The Respiratory System
- Chronobiology and the Kidney
- Circadian Rhythms and the Gastrointestinal System
- Circadian Clock Signals in Endocrine Glands
- Clock Proteins and Circadian Rhythms in Immunity
- Haematopoietic System
- Circadian Aspects of Skeletal Muscle Biology
- Integumentary System
- Interplay Between Female Reproductive Function and Circadian System
- Growth: Emergence of the Circadian Clock
- Disease Conditions
- Circadian Clocks and Metabolism
- Circadian Clocks in Ageing
- Chronotherapeutic Approaches
- Chronobiologic Study Designs
- Identifying and Interpreting Rhythms in Biological Data

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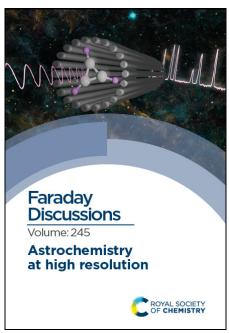
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Series: Faraday Discussions

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Target Audience: Professional and scholarly

Format: Hardback

**Size:** 234 x 156 (Royal 8vo) mm

Pages: 652

BIC: PGG, PNF, PNRS, PNRX, UYM THEMA: PGG, PNF, PNRA, PNRS, PNRX BISAC: SCI013010, SCI013050, SCI013070

# Astrochemistry at High Resolution Faraday Discussion 245

# **Synopsis**

There is much speculation about the chemistry occurring in astronomical environments, but without observation of such environments, speculation is without foundation. Observational astrochemistry is the foundation on which astrochemistry is built. It offers us a window into a world that would otherwise be beyond our reach. Chemical spectroscopy helps identify chemical species and probe their environments; gas-phase, surface, solid-state and photochemically-induced chemical processes drive the evolution of our galaxy and others; chemical evolution controls the formation of stars and planets; chemistry is the forerunner that brings us to the edge of biology and of life itself. This window to our universe is being opened more widely as a revolution in the observational capabilities available to astronomers is expected to continue through the 2020s and beyond. Join internationally leading experimental and theoretical scientists from across the fields of astronomy, chemistry and physics to explore and exchange ideas about our chemical understanding of the universe.

# **Brief Contents**

- Observational astrochemistry in the age of ALMA, NOEMA, JWST and beyond
- Laboratory astrochemistry of the gas phase
- Laboratory astrochemistry of and on dust and ices
- Computational astrochemistry

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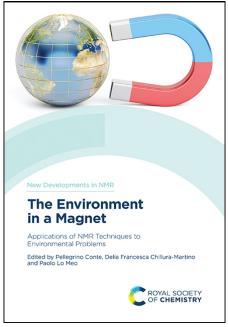
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Series: New Developments in NMR

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Target Audience: Professional and scholarly

Format: Hardback

**Size:** 234 x 156 (Royal 8vo) mm

Pages: 537 BIC: PNFR, TQD

THEMA: PNC, PNFR, TQD BISAC: SCI013010, SCI013080

# The Environment in a Magnet Applications of NMR Techniques to Environmental Problems

Pellegrino Conte University of Palermo, Italy Delia Francesca Chillura-Martino University of Palermo, Italy

Paolo Lo Meo University of Palermo, Italy

# **Synopsis**

Global climate change is the most important challenge humankind is facing today. This book discusses the present and the future perspectives of NMR techniques for environmental evaluations. Filling a gap in the literature, the book is for researchers explaining how to apply their knowledge of NMR techniques to solve environmental problems and for students who want to deepen their understanding of this topic.

### **Brief Contents**

- The Meaning of Pollution and the Powerfulness of NMR Techniques
- The Importance of NMR as a Discovery Tool
- Sensitivity Enhancement in Environmental NMR
- Comprehensive Multiphase NMR
- Environmental In Vivo NMR
- Self Diffusion NMR for the Evaluation of Environmental Contamination
- Monitoring of Lubricating Oil Degradation
- MRI of Soil and Soil-Root Processes
- Using Magnetic Resonance Imaging to Study Contaminant Dynamics
- NMR Relaxation in Porous Media for Environmental Applications
- Characterization of Cyclodextrin Cross-Linked Polymers
- NMR Techniques for the Evaluation of Biochar Characteristics
- $\bullet$  The use of NMR Techniques in Cultural Heritage
- Detection of Adulterations and Contaminations in Food Products
- $\bullet$  MRI, Pollution, and Human Health: Recent Advances in Clinical Practice
- Basics of NMR Spectroscopy (for Novices)
- FFC NMR Theory and Models for Complex and Confined Fluids
- Genesis of the Signal in MRI

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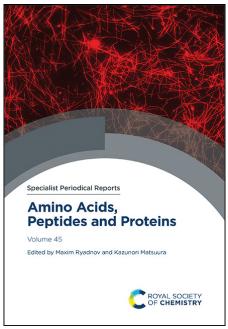
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Series: Specialist Periodical Reports

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Target Audience: Professional and scholarly

Format: Hardback

**Size:** 234 x 156 (Royal 8vo) mm

Pages: 112 BIC: PSB, PSD THEMA: PSB, PSD

BISAC: SCI007000. SCI049000

# Amino Acids, Peptides and Proteins Volume 45

Maxim Ryadnov National Physical Laboratory, UK Kazunori Matsuura University of Tottori, Japan

# **Synopsis**

Amino Acids, Peptides and Proteins comprises a selection of comprehensive and critical reviews of significant developments at the biology/chemistry interface. Compiled by leading researchers in their subject, this volume incorporates current trends and emerging areas. Appealing broadly to researchers in academia and industry, it will be of great benefit to any researcher wanting a succinct reference in the field.

# **Brief Contents**

- $\bullet$  Chemical protein synthesis  $\emph{via}$  one-pot multiple peptide ligation strategies
- Functionalization of microtubules by Tau-derived peptides: encapsulation, cell manipulation, and construction of superstructures
- Running rings around protein cages: A case study of artificial TRAP cages
- Intracellular artificial supramolecular architectures based on *de novo* designed peptides
- Self-assembly of cyclic peptides

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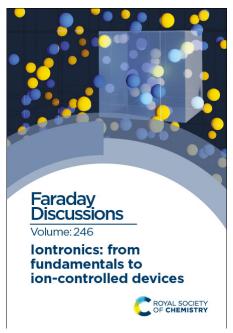
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**Series:** Faraday Discussions

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Target Audience: Professional and scholarly

Format: Hardback

**Size:** 234 x 156 (Royal 8vo) mm

Pages: 400 BIC: PHDF, PNR THEMA: PHDF, PNR BISAC: SCI013050

# Iontronics: From Fundamentals to Ioncontrolled Devices Faraday Discussion 246

# **Synopsis**

lontronics is a newly emerging field of research that studies the science and technology of electronic properties and functions controlled by the movement and arrangement of ions, such as Na<sup>+</sup>, Cl<sup>-</sup> or Ca<sup>2+</sup>. The driving forces in iontronics include electric, diffusive and convective forces due to the presence of fluid flows. This volume brings together internationally leading researchers in this new interdisciplinary field to explore and exchange ideas on the physical and chemical principles underlying these phenomena, and the advances in both fundamental research and industrial applications.

# **Brief Contents**

- Iontronic coupling
- Iontronic dynamics
- Iontronics under confinement
- Iontronic microscopy

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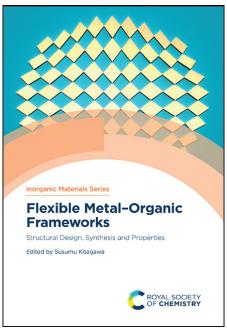
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Series: Inorganic Materials Series

ISSN: 2472-3819

Publisher: Royal Society of Chemistry

ISBN: 978-1-83916-452-1 Price: £99.99 | \$140.00 Publishing date: 18/03/2024

Target Audience: Professional and scholarly

Format: Hardback

**Size:** 234 x 156 (Royal 8vo) mm

Pages: 420 BIC: PNK, TGM THEMA: PNK, TGM

BISAC: SCI013030. TEC021000

# Flexible Metal-Organic Frameworks Structural Design, Synthesis and Properties

Susumu Kitagawa Kyoto University, Japan

# **Synopsis**

Flexible metal-organic frameworks (MOFs) are a unique class of porous materials that feature stimuli-responsive flexible structures and dynamic structural transformation behaviours. This book provides an accessible overview of the historical background of the chemistry of flexible MOFs and its features; in particular, design and synthesis, dynamic structure analysis, flexibility, function and theoretical treatment and interpretation of the mechanisms as well as its applications. It gives readers a fundamental understanding of this chemistry and will be of great help to young researchers, as well as those already familiar with conventional porous materials, in creating new materials.

# **Brief Contents**

- Structure, Design and Synthesis
- Flexible Properties: Adsorptive Storage and Separation
- The Dynamic View: Multiscale Characterization Techniques for Flexible Frameworks
- Theoretical Understanding and Insights on Flexible Metal-Organic Frameworks
- New Dimensions of Flexible MOFs: Toward Complex Systems and Devices

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