

## Functional Materials from Lipids and Proteins

Nandika Bandara University of Manitoba, Canada  
Aman Ullah University of Alberta, Canada

### Synopsis

Lipids and proteins are inexpensive, renewable raw materials, considered ideal feedstock for the developing various functional materials. This book provides an international viewpoint on recent developments in the utilisation of lipids and proteins together, for the development of functional materials in food engineering, environmental and industry applications. Researchers, scientists, engineers and students working on lipids and proteins derived materials will benefit from this book, which is highly application oriented.

### Brief Contents

- Introduction to Lipid and Protein-based Functional Materials
- Recent Advances in the Biosynthesis and Metabolic Engineering of Storage Lipids and Proteins in Seeds
- Protein-based Materials for Functional Packaging
- Lipid-based Materials in Edible and Non-edible Food Packaging
- Role of Lipids and Proteins as Additives in Sensory and Functionality Enhancers in Food Systems
- Protein and Lipid-based Bioactive Compounds
- Nanoliposomes for Promising Encapsulation and Delivery of Potential Nutraceutical Ingredients
- Lipid and Protein-based Nanodelivery Systems
- Hydrophobic and Superhydrophobic Protein-based Materials for Functional Applications
- Functional Protein-based Biomaterials
- Advances in Protein and Lipid-based Materials for Cosmetic Applications
- Protein Derived Materials for Water Purification
- Lipid and Protein-based Adhesives
- A Green Biorefinery Concept: Proteins and Lipids as Sustainable Biomass
- Protein and Lipid-based Wound Healing Materials

All information is subject to change without notice

**Series:** Smart Materials Series

**ISSN:** 2046-0066

**Publisher:** Royal Society of Chemistry

**ISBN:** 978-1-83916-417-0

**Price:** £179.00 | \$250.00

**Publishing date:** 23/08/2024

**Target Audience:** Professional and scholarly, College/higher education

**Format:** Hardback

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

**Pages:** 431

**BIC:** PSBC, PSBH, TDC, TGM

**THEMA:** PSB, TDC, TGM

**BISAC:** SCIO07000, TEC009010, TEC021000

### To order

#### Royal Society of Chemistry

Marston Book Services Ltd  
160 Eastern Avenue | Milton Park | Abingdon |  
Oxfordshire | OX14 4SB | UK  
Tel: +44 (0) 1235 465522  
Fax: +44 (0) 1235 465555  
Email: [enquiries@marston.co.uk](mailto:enquiries@marston.co.uk)  
[www.marston.co.uk](http://www.marston.co.uk)

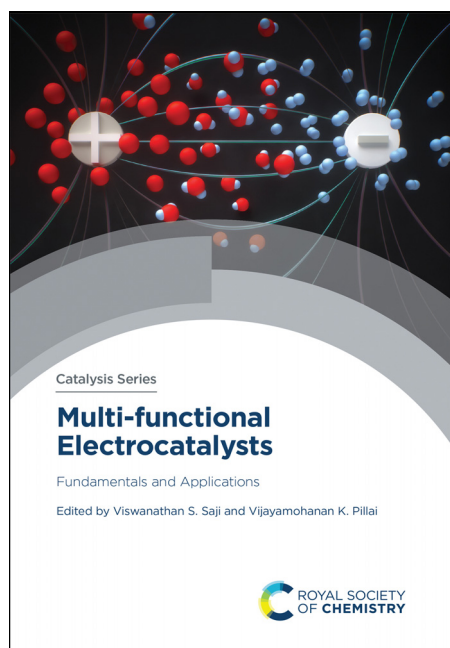
#### USA and Canada

Please contact:  
Ingram Publisher Services | Customer Service | Box 631 |  
14 Ingram Blvd | La Vergne | TN 37086 | USA  
Tel: +1 (866) 400 5351  
Fax: +1 (800) 838 1149  
Email: [ips@ingramcontent.com](mailto:ips@ingramcontent.com)

[www.rsc.org/books](http://www.rsc.org/books)

Registered charity number 207890

# Advance Book Information



All information is subject to change without notice

**Series:** Catalysis Series  
**ISSN:** 1757-6725  
**Publisher:** Royal Society of Chemistry  
**ISBN:** 978-1-83767-243-1  
**Price:** £179.00 | \$250.00  
**Publishing date:** 28/08/2024  
**Target Audience:** Professional and scholarly  
**Format:** Hardback  
**Size:** 234 x 156 (Royal 8vo) mm  
**Pages:** 520  
**BIC:** PNRD, PNRH, THRB  
**THEMA:** PNRD, PNRH, THY  
**BISAC:** SCIO13100, SCIO24000

## Multi-functional Electrocatalysts Fundamentals and Applications

**Viswanathan S Saji** King Fahd University of Petroleum and Minerals, Saudi Arabia

**Vijayamohan K Pillai** Indian Institute of Science Education and Research (IISER) Tirupati, India

### Synopsis

Multifunctional electrocatalysis are highly unique in that they display features that include the presence of multiple active sites that can simultaneously catalyse two or different electrochemical reactions. They are essential in overcoming the high cost and stability issues of traditional catalysts, and are a priority in developing contemporary sustainable energy conversion and storage systems, such as fuel cells, metal-air batteries and electrolyzers for green hydrogen production. Split into four sections, this comprehensive book guides readers through the fundamentals and applications of multifunctional electrocatalysts, their different types and various fabrication approaches, as well as the latest research advances.

### Brief Contents

- Fundamentals and Future Directions
- Electronic Structure and Surface Redox Chemistry
- Bifunctional Electrocatalysts for Water Splitting
- Bifunctional Electrocatalysts for Urea-Water Electrolysis
- Bifunctional Electrocatalysts for ORR and OER in Hydrogen-Oxygen Fuel Cells
- Bifunctional Electrocatalysts for Unitized Regenerative Fuel Cells
- Low-temperature Solid Oxide Fuel Cells
- Bifunctional Electrocatalysts for Metal-Air Batteries
- Metal-Organic Frameworks Derived Bifunctional Electrocatalysts
- Layered Double Hydroxide-based Bifunctional Electrocatalysts
- Nanocarbon Based Bifunctional Electrocatalysts
- High-entropy Bifunctional Electrocatalysts
- Bifunctional Electrocatalysts - Design Strategies from Theoretical and Computational Studies
- Implementation of Multifunctional Electrocatalysts in Photoelectrochemical Devices for Water Electrolysis
- Trifunctional Electrocatalysts for HER, OER and ORR
- Trifunctional Electrocatalysts for Metal-Air Batteries and Electrolyzers
- Tetrafunctional Electrocatalysts: Advantages and Limitations

### To order

#### Royal Society of Chemistry

Marston Book Services Ltd  
160 Eastern Avenue | Milton Park | Abingdon |  
Oxfordshire | OX14 4SB | UK  
Tel: +44 (0) 1235 465522  
Fax: +44 (0) 1235 465555  
Email: [enquiries@marston.co.uk](mailto:enquiries@marston.co.uk)  
[www.marston.co.uk](http://www.marston.co.uk)

#### USA and Canada

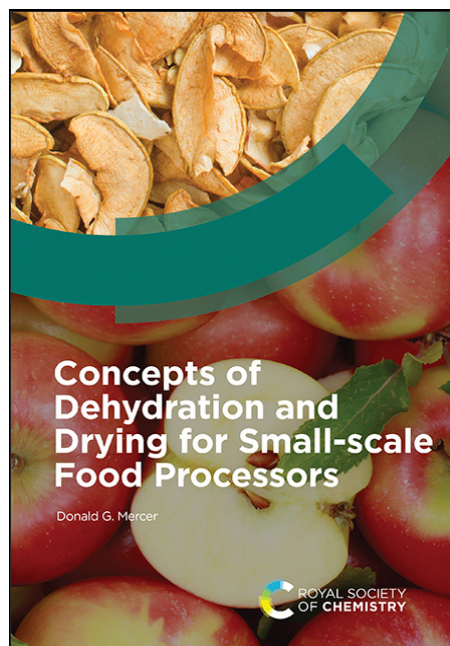
Please contact:  
Ingram Publisher Services | Customer Service | Box 631 |  
14 Ingram Blvd | La Vergne | TN 37086 | USA  
Tel: +1 (866) 400 5351  
Fax: +1 (800) 838 1149  
Email: [ips@ingramcontent.com](mailto:ips@ingramcontent.com)

[www.rsc.org/books](http://www.rsc.org/books)

Registered charity number 207890



# Advance Book Information



All information is subject to change without notice

## Concepts of Dehydration and Drying for Small-scale Food Processors

Donald G Mercer University of Guelph, Canada

### Synopsis

This book provides information on key areas of post-harvest dehydration technologies for small-scale food processors. It is written in non-technical language and covers everything from the basic science of why food is dried to a description of the main methods used. The fundamental knowledge contained in this book is critical to every aspect of food drying. Intended for small-scale food processors who have no formal training in food science or food engineering, it fills a gap in the resource material accordingly meeting the needs of this segment of the agri-food sector.

### Brief Contents

- Why Food Is Dried
- Getting Started
- Background Skills for Food Drying
- Basics of Drying Food Materials
- Water Activity and Related Product Attributes
- Preparing Materials for Drying
- Additional Aspects of Food Drying
- Building a Cabinet Dryer
- Open-air and Solar Drying
- Packaging and Product Shelf-life Enhancement
- Using Dehydrated Food Materials
- Basics of Mathematical Modelling

**Publisher:** Royal Society of Chemistry

**ISBN:** 978-1-83916-791-1

**Price:** £85.00 | \$119.00

**Publishing date:** 09/08/2024

**Target Audience:** Professional and scholarly, General/Trade

**Format:** Hardback

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

**Pages:** 338

**BC:** TDCT, WBW

**THEMA:** KNAC, PND, TDCT2, WBW

**BISAC:** TEC012020

### To order

#### Royal Society of Chemistry

Marston Book Services Ltd  
160 Eastern Avenue | Milton Park | Abingdon |  
Oxfordshire | OX14 4SB | UK  
Tel: +44 (0) 1235 465522  
Fax: +44 (0) 1235 465555  
Email: [enquiries@marston.co.uk](mailto:enquiries@marston.co.uk)  
[www.marston.co.uk](http://www.marston.co.uk)

#### USA and Canada

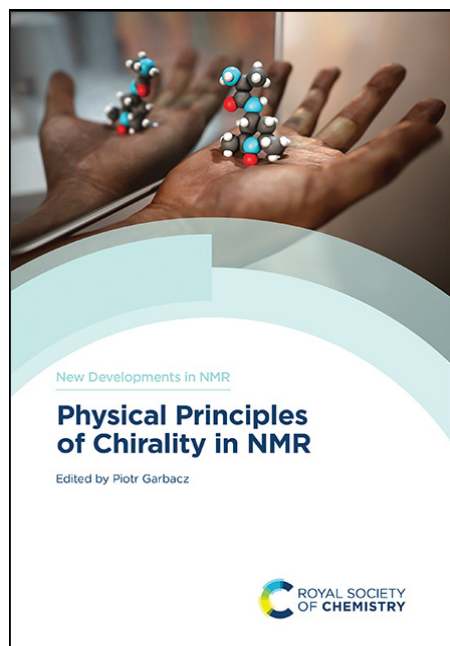
Please contact:  
Ingram Publisher Services | Customer Service | Box 631 |  
14 Ingram Blvd | La Vergne | TN 37086 | USA  
Tel: +1 (866) 400 5351  
Fax: +1 (800) 838 1149  
Email: [ips@ingramcontent.com](mailto:ips@ingramcontent.com)

[www.rsc.org/books](http://www.rsc.org/books)

Registered charity number 207890



# Advance Book Information



All information is subject to change without notice

## Physical Principles of Chirality in NMR

Piotr Garbacz University of Warsaw, Poland

### Synopsis

With recent developments in direct determination of the whole structure of a molecule, including its handedness, from NMR spectra, the use of subsequent measurements by other kinds of spectroscopy have become redundant. In a short time, researchers have found different approaches to achieve direct sensitivity to chirality in NMR. This book is devoted to this emerging field of NMR, showing progress in the NMR studies of molecular chirality. Providing a clear, coherent, and comprehensive review of methods used in studies of chirality from the physiochemical point of view, the book satisfies a real need for the NMR community.

### Brief Contents

- Introduction to Molecular Chirality
- The Concept of Chirality from a Mathematical Perspective
- NMR Discrimination of Chiral Organic Compounds
- A Brief Overview of the Chiral Agents
- Nuclear Magnetic Shielding and Chirality
- Antisymmetric Nuclear Magnetic Shielding as an Indicator of Molecular Chirality
- Chirality-sensitive Effects Induced by Antisymmetric Spin-Spin Coupling
- Magneto-chiral Dichroism in Nuclear Magnetic Resonance: Traveling Wave Enantioselective NMR
- Hyperpolarization Methods and Their Applications for the Investigation and Discrimination of Enantiomers in NMR

**Series:** New Developments in NMR  
**ISSN:** 2044-253X  
**Publisher:** Royal Society of Chemistry  
**ISBN:** 978-1-83916-548-1  
**Price:** £159.00 | \$220.00  
**Publishing date:** 20/09/2024  
**Target Audience:** Professional and scholarly  
**Format:** Hardback  
**Size:** 234 x 156 (Royal 8vo) mm  
**Pages:** 305  
**BIC:** PNF, PNR  
**THEMA:** PNF, PNR  
**BISAC:** SCI013010, SCI013050

## To order

### Royal Society of Chemistry

Marston Book Services Ltd  
160 Eastern Avenue | Milton Park | Abingdon |  
Oxfordshire | OX14 4SB | UK  
Tel: +44 (0) 1235 465522  
Fax: +44 (0) 1235 465555  
Email: [enquiries@marston.co.uk](mailto:enquiries@marston.co.uk)  
[www.marston.co.uk](http://www.marston.co.uk)

### USA and Canada

Please contact:  
Ingram Publisher Services | Customer Service | Box 631 |  
14 Ingram Blvd | La Vergne | TN 37086 | USA  
Tel: +1 (866) 400 5351  
Fax: +1 (800) 838 1149  
Email: [ips@ingramcontent.com](mailto:ips@ingramcontent.com)

[www.rsc.org/books](http://www.rsc.org/books)

Registered charity number 207890





# Advance Book Information



All information is subject to change without notice

**Publisher:** Royal Society of Chemistry

**ISBN:** 978-1-83767-495-4

**Price:** £70.00 | \$95.00

**Publishing date:** 16/08/2024

**Target Audience:** Professional and scholarly, College/higher education

**Format:** Hardback

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

**Pages:** 143

**BIC:** RNU, TGM, THX

**THEMA:** RNU, TGM, THV

**BISAC:** TEC021000, TEC031010

## Critical Materials for a Low-carbon Economy

David Segal

### Synopsis

Countries worldwide are moving to a future without fossil fuels to mitigate the effects of climate change. This transition will involve phasing out the fossil fuels used for electricity generation, the liquid fuels used for transportation and the gas that is used to heat homes. To achieve the transition, a range of materials, known as critical materials or critical minerals are essential. **Critical Materials for a Low-carbon Economy** looks at the science behind some of the materials that will be essential to this transition.

### Brief Contents

- Introduction
- Batteries
- Geothermal Energy
- Hydrogen
- Lanthanides
- Nuclear Power
- Solar (Photovoltaic) Cells
- Wind Turbines
- Conclusions
- Epilogue: Critical Materials and Globalisation

### To order

#### Royal Society of Chemistry

Marston Book Services Ltd  
160 Eastern Avenue | Milton Park | Abingdon |  
Oxfordshire | OX14 4SB | UK  
Tel: +44 (0) 1235 465522  
Fax: +44 (0) 1235 465555  
Email: [enquiries@marston.co.uk](mailto:enquiries@marston.co.uk)  
[www.marston.co.uk](http://www.marston.co.uk)

#### USA and Canada

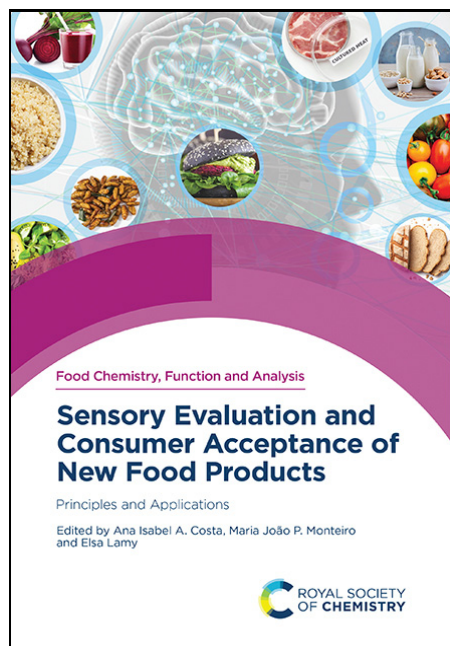
Please contact:  
Ingram Publisher Services | Customer Service | Box 631 |  
14 Ingram Blvd | La Vergne | TN 37086 | USA  
Tel: +1 (866) 400 5351  
Fax: +1 (800) 838 1149  
Email: [ips@ingramcontent.com](mailto:ips@ingramcontent.com)

[www.rsc.org/books](http://www.rsc.org/books)

Registered charity number 207890



# Advance Book Information



## Sensory Evaluation and Consumer Acceptance of New Food Products Principles and Applications

Ana Isabel Costa Universidade Católica Portuguesa, Portugal  
Maria Joao P Monteiro Universidade Católica Portuguesa, Portugal  
Elsa Lamy Universidade de Évora, Portugal

### Synopsis

This comprehensive reference covers all aspects of sensory and consumer research in food. Anyone working in food science and chemistry will find this a useful and engaging read.

### Brief Contents

- Anatomical and Physiological Bases of Food Perception
- Evaluation of the Taste Function
- Sensory Properties of Foods and Assessment by Trained Individuals
- Rapid Sensory Profiling Methods for Research and Industry Applications
- Strategies for Food Data Mining and Optimizing Information Generation
- Oral Food Perception and the Development of Food Preferences
- Assessment of Individual Differences in Sensory Evaluation
- Assessment of Psychophysiological Responses to Sensory Stimuli
- In-context Measures of Food Acceptance Across the Lifespan
- Assessment of Emotional Responses to Food Products
- Food Neophobia: Measurement, Variability and Consequences
- Cross-cultural Consumer Studies
- Netnography and Online Platforms for Qualitative Consumer Insight
- Foods to Improve the Nutrition and Wellbeing of Consumers in Africa
- Foods, Dishes and Flavours from Latin American Tradition
- Consumer Perception and Acceptance of Foods in Asia
- Consumer Perception and Acceptance of Foods in Africa
- Traditional, Artisan, and Craft Foods and Drinks
- Consumer Perception and Acceptance of Healthy and Sustainable Food
- Quality and Consumer Acceptance of Foods from Agri-food By-products
- Sensory Profile and Consumer Acceptance of Edible Insects
- Foods for Diet-related Disease Prevention and Health Promotion
- Changing Aims of Contemporary Cuisine in Food Adoption

All information is subject to change without notice

**Series:** Food Chemistry, Function and Analysis

**ISSN:** 2398-0656

**Publisher:** Royal Society of Chemistry

**ISBN:** 978-1-83916-154-4

**Price:** £179.00 | \$250.00

**Publishing date:** 14/08/2024

**Target Audience:** Professional and scholarly

**Format:** Hardback

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

**Pages:** 539

**BIC:** MBNH3, PNF, TDCT

**THEMA:** MBNH3, PND, PNF, TDCT

**BISAC:** MED060000, SCI013010, TEC012000

### To order

#### Royal Society of Chemistry

Marston Book Services Ltd  
160 Eastern Avenue | Milton Park | Abingdon |  
Oxfordshire | OX14 4SB | UK  
Tel: +44 (0) 1235 465522  
Fax: +44 (0) 1235 465555  
Email: [enquiries@marston.co.uk](mailto:enquiries@marston.co.uk)  
[www.marston.co.uk](http://www.marston.co.uk)

#### USA and Canada

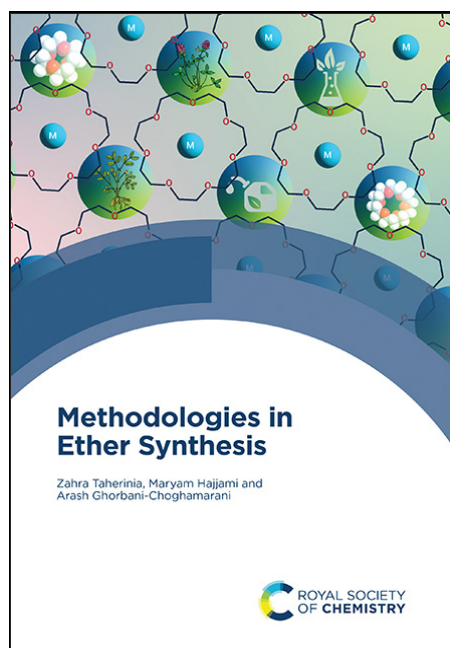
Please contact:  
Ingram Publisher Services | Customer Service | Box 631 |  
14 Ingram Blvd | La Vergne | TN 37086 | USA  
Tel: +1 (866) 400 5351  
Fax: +1 (800) 838 1149  
Email: [ips@ingramcontent.com](mailto:ips@ingramcontent.com)

[www.rsc.org/books](http://www.rsc.org/books)

Registered charity number 207890



# Advance Book Information



All information is subject to change without notice

**Publisher:** Royal Society of Chemistry

**ISBN:** 978-1-83767-250-9

**Price:** £149.00 | \$205.00

**Publishing date:** 16/08/2024

**Target Audience:** Professional and scholarly, College/higher education

**Format:** Hardback

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

**Pages:** 195

**BIC:** PNN, PSB

**THEMA:** PNN, PSB, PSE

**BISAC:** SCI007000, SCI013040

## Methodologies in Ether Synthesis

Zahra Taherinia Ilam University, Iran

Maryam Hajjami Bu-Ali Sina University, Iran

Arash Ghorbani-Choghamarani Bu-Ali Sina University, Iran

### Synopsis

Ethers and crown ethers are important structural parts of many man-made or natural organic materials with medicinal, agrochemical or technological attributes. In recent years, extensive studies have been conducted for developing novel ether synthesis methods. This book summarizes recent advances in synthesizing di-alkyl, aryl-alkyl, diaryl, cyclic, and crown ethers. It also discusses their substantial applications in various fields such as organic synthesis, ionic liquids, protecting groups, photoswitchable catalysis, phase transfer catalysts, solvents, biological functionality, anticancer properties and antimicrobial effects, drug delivery, and biofuels. Providing an invaluable reference for undergraduates, postgraduates and researchers interested in organic chemistry, it also contributes to the literature for chemical researchers working in industry.

### Brief Contents

- Historical Background of Ether Synthesis and Their Properties
- Synthetic Methods for Dialkyl Ethers
- Synthetic Methods for Aryl-Alkyl Ethers
- Synthetic Methods for Di-Aryl Ether Preparation Using Arylating Reagents
- Synthetic Methods for Cyclic Ethers
- Synthesis of Crown Ethers
- Application of Ethers and Crown Ethers

### To order

#### Royal Society of Chemistry

Marston Book Services Ltd  
160 Eastern Avenue | Milton Park | Abingdon |  
Oxfordshire | OX14 4SB | UK  
Tel: +44 (0) 1235 465522  
Fax: +44 (0) 1235 465555  
Email: [enquiries@marston.co.uk](mailto:enquiries@marston.co.uk)  
[www.marston.co.uk](http://www.marston.co.uk)

#### USA and Canada

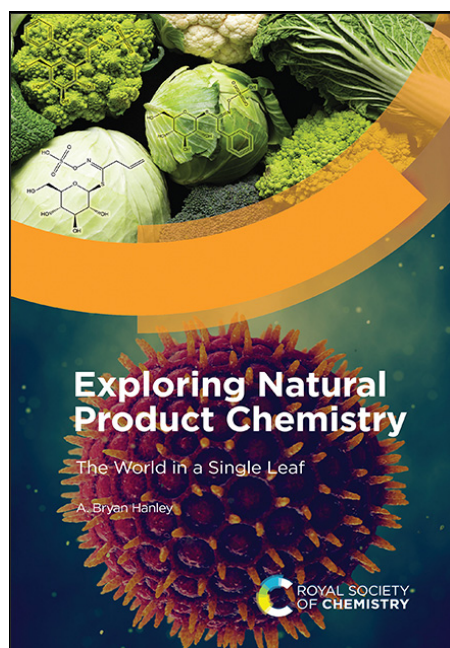
Please contact:  
Ingram Publisher Services | Customer Service | Box 631 |  
14 Ingram Blvd | La Vergne | TN 37086 | USA  
Tel: +1 (866) 400 5351  
Fax: +1 (800) 838 1149  
Email: [ips@ingramcontent.com](mailto:ips@ingramcontent.com)

[www.rsc.org/books](http://www.rsc.org/books)

Registered charity number 207890



# Advance Book Information



All information is subject to change without notice

**Publisher:** Royal Society of Chemistry  
**ISBN:** 978-1-83767-488-6  
**Price:** £75.00 | \$105.00  
**Publishing date:** 19/08/2024  
**Target Audience:** College/higher education, General/Trade, Professional and scholarly  
**Format:** Hardback  
**Size:** 234 x 156 (Royal 8vo) mm  
**Pages:** 224  
**BIC:** PDA, PDR, PNN, PSB  
**THEMA:** PDA, PDR, PNN  
**BISAC:** SCI013000, SCI013040

## Exploring Natural Product Chemistry The World in a Single Leaf

A Bryan Hanley ACTA (Dental Faculty of the University of Amsterdam and the VU Amsterdam), Amsterdam

### Synopsis

This book examines and summarises the developments and changes in approaches to organic and natural product chemistry over the past 40 years and seeks to place them in a philosophical and societal context. Demonstrating and explaining how scientists and, more particularly, chemists arrive at a world view, it will show how this is predicated not just by scientific advances but also by societal influences. The author uses personal experience and their publications to detail progress through science. Interesting both to the general, scientifically literate reader and to the specialist wanting information on natural product chemistry, it will provide a view on how chemistry shapes thought and society.

### Brief Contents

- Natural Product Chemistry: To See the World in a Single Leaf
- Isolation and Synthesis of Natural Products: Empiricism and Reductionism
- Fractionation and Biological Assays on Whole Organisms
- The Reversibility of Reactions
- Natural Products in Plant Cell Walls: Model Systems to Investigate Complex Natural Products
- Bioactivation of Natural Products and Biological Assay of Carcinogens
- Allergy and Chronic Toxicity Model Systems
- The Definition of Natural Products: Acrylamide as an Example
- Natural Products in the Oral Cavity and Biological Dark Matter
- Differential Biological Effects of a Single Natural Product Depending on Site of Action
- Conclusion: The Future of Natural Products

### To order

#### Royal Society of Chemistry

Marston Book Services Ltd  
160 Eastern Avenue | Milton Park | Abingdon |  
Oxfordshire | OX14 4SB | UK  
Tel: +44 (0) 1235 465522  
Fax: +44 (0) 1235 465555  
Email: [enquiries@marston.co.uk](mailto:enquiries@marston.co.uk)  
[www.marston.co.uk](http://www.marston.co.uk)

#### USA and Canada

Please contact:  
Ingram Publisher Services | Customer Service | Box 631 |  
14 Ingram Blvd | La Vergne | TN 37086 | USA  
Tel: +1 (866) 400 5351  
Fax: +1 (800) 838 1149  
Email: [ips@ingramcontent.com](mailto:ips@ingramcontent.com)

[www.rsc.org/books](http://www.rsc.org/books)

Registered charity number 207890

