Analytical Electrog enerated Chemiluminescence
From Fundamentals to Bioassays

Neso Sojic Université de Bordeaux, France

Synopsis
Highlighting the various fields in analytical chemistry where electrogenerated chemiluminescence (ECL) is widely applied, this book details some well-established ECL sensing applications like immunoassays, DNA and enzymatic assays and those emerging recently like multiplexed ECL or the combination of ECL and bipolar electrochemistry and their use in diagnostic issues. It presents the processes, theory, bioanalytical applications and the recent developments involved in the instrumentation and analytical nano/micro-systems. Being at the frontier between several scientific disciplines involving analytical chemistry, electrochemistry, photochemistry, materials sciences, nanochemistry and biology, it has broad appeal.

Brief Contents

- Introduction and Overview of Electrog enerated Chemiluminescence
- Energetic and Kinetic Aspects of ECL Generation
- Efficient ECL Luminophores
- Electrochemiluminescence Coreactants
- Theoretical Concepts Underlying ECL Generation
- Essential Role of Electrode Materials in ECL Applications
- Wireless ECL Generation Based on Bipolar Electrochemistry
- Multi-colour Electrochemiluminescence
- ECL of Nanomaterials: Novel Materials, Detection Strategies and Applications

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
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

www.rsc.org/books
Advance Book Information

Biogenic Amines in Food
Analysis, Occurrence and Toxicity

Bahrudin Saad Universiti Teknologi PETRONAS, Malaysia
Rosanna Tofalo Università degli Studi di Teramo, Italy

Synopsis
A precise analysis of biogenic amines is important as an indicator of food freshness or spoilage that can cause serious toxicity. This book provides comprehensive background information on biogenic amines and their occurrence in various foods and drinks. It gives a detailed description of both the established analytical methods and the emerging technologies for the analysis of them; this will help make the tests useful for both fermented and non-fermented foods. As the first book on the detection of biogenic amines in all types of food, it provides help to get a better understanding of the risks and how to avoid them. It serves as an excellent and up-to-date reference for food scientists, food chemists and food safety professionals.

Brief Contents
- Biogenic Amines Formation, Toxicity, Regulations in Food
- Microorganisms able to Produce Biogenic Amines and Factors Affecting Their Activity
- Controlling Biogenic Amine Formation in Food
- Biogenic Amines in Fermented Fish
- Biogenic Amines in Non-Fermented Food
- Fermented Sausages: A Potential Source of Biogenic Amines
- Occurrence of Biogenic Amines in Cheese: An Overview
- Biogenic Amines in Global Beverages
- Biogenic Amines in Baby Foods

Series: Food Chemistry, Function and Analysis
ISSN: 2398-0656
Publisher: Royal Society of Chemistry
ISBN: 9781788014366
Price: £169.00 | $235.00
Publishing date: 14/11/2019
Target Audience: Professional and scholarly
Format: Hardback
Edition: 1
Size: 234 x 156mm
Pages: 350
BIC: MBNH3, PNF, PSB

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
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

www.rsc.org/books
Registered charity number: 207890
Electrochemical Methods for Hydrogen Production

Keith Scott Newcastle University, UK

Synopsis
Increased hydrogen supplies using cleaner methods are seen as essential for potential hydrogen based power systems for transportation and renewable energy conversion into fuel. This book provides a comprehensive picture of the various routes to use electricity to produce hydrogen using electrochemical science and technology. Edited by an expert in the field, this title will be of interest to graduate students and researchers in academia and industry working in energy, electrochemistry, physical chemistry and chemical engineering.

Brief Contents
- Introduction to Electrolysis, Electrolysers and Hydrogen Production
- Alkaline Electrolysers
- Electrochemical reforming of alcohols
- Solid Oxide Electrolysers
- Intermediate Temperature Electrolysers
- Other Polymer Membrane Electrolysis Processes
- Unitised Regenerative Fuel Cells
- Economics and Perspectives of Hydrogen Electroproduction Techniques
- Conclusions: Electrolytic Hydrogen production and sustainable routes
Gas Chromatography-Mass Spectrometry

How Do I Get the Best Results?

Jason Creasey GlaxoSmithKline, UK
Anthony Gachanja Jomo Kenyatta University of Agriculture and Technology, Kenya
Imran Jammohamed Anthias Consulting Ltd, UK
Steven Lancaster Domino Printing Sciences, UK

Synopsis

Gas chromatography–mass spectrometry (GC-MS) can be used in everything from environmental monitoring and food safety to forensic science and medicine. This textbook introduces students and scientists who are new to GCMS to all of the steps involved in using this technique as part of a research process. Throughout the book, case studies illustrate the process, the techniques used and any common challenges. Newcomers can easily search for answers to the "how do I...?" question they may have and find basic and clear advice on how to get started. The book draws on extensive experience teaching GCMS courses in the developing world as part of the Royal Society of Chemistry’s Pan Africa Network supported by GSK.

Brief Contents

- Sample Collection and Preparation: How Do I Get My Sample Ready for GC-MS Analysis
- How Do I Introduce My Damples into the GC Column
- Chromatographic Separation
- How Do I Detect by Samples?
- Mass Spectrometry
- What is Qualitative Analysis and how do I Perform it?
- Quantitation: How Much of my Analytes are in my Samples, Which I Injected on to the GC-MS?
- How do I Maintain my GC-MS?
Advance Book Information

Energy Storage and Conversion Materials
Stephen Skinner Imperial College London, UK

Synopsis
Showcasing recent developments in inorganic materials in an area of societal interest and importance, this book provides an up-to-date introduction to the contemporary use of functional solids in emerging technologies. Energy Storage and Conversion Materials describes the application of inorganic materials in the storage and conversion of energy, with an emphasis on how solid-state chemistry allows development of new functional solids for energy applications. Edited and written by world-renowned scientists, this book will provide a comprehensive introduction for advanced undergraduates, postgraduates and researchers wishing to learn about the topic.

Brief Contents
- Bilayer Electrolytes for low temperature (LT) and intermediate temperature (IT)-SOFCs – A Review
- High temperature co-electrolysis – a route to syngas
- Electrolyte Development for Solid State Lithium Batteries
- X. Redox Oxides for Thermochemical Energy Storage
- Thermoelectric Oxide Materials for Energy Conversion

To order

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

www.rsc.org/books
Registered charity number: 207890
Mitigating Contamination from Food Processing

Catherine S Birch Food & Environmental Research Agency, UK
Graham A Bonwick Newcastle University, UK

Synopsis

Methods for identification and measurement of existing and newly discovered contaminants are required, especially those that are cheap, simple and rapid, so that testing may be more frequent within the food supply chain. It is also important to identify opportunities to prevent or minimise the formation of contaminants during various types of food processing, especially those recently introduced or proposed for use by the food and drink industries. This book captures recent developments in understanding the formation and occurrence of contaminants in a range of food materials, as well as advances in detection methods. It is aimed at graduate students studying Food Science and Technology or Food Engineering and food science professionals especially those working in food processing or analysis.

Brief Contents

- European Regulation of Process Contaminants in Food; Formation, Analysis, Occurrence and Mitigation of Acrylamide Content in Foods
- Risk/Benefits Evaluation of Acrylamide Mitigation Initiatives in Cereal Products
- 2- and 3-Monochloropropanediol (MCPD) Esters and Glycidyl Esters: Methods of Analysis, Occurrence, and Mitigation in Refined Oils, Infant Formula, and Other Processed Foods
- Strategies to Mitigate MCPD and Glycidyl Esters in Refined Oils and Foods
- Polycyclic Aromatic Hydrocarbons in Processed Food: Scientific Challenges and Research Recommendations

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
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
Advance Book Information

Nanoengineering
The Skills and Tools Making Technology Invisible
Michael Berger Nanowerk LLC, Germany

Synopsis
While our five senses are doing a reasonably good job at representing the world around us on a macro-scale, we have no existing intuitive representation of the nanoworld, ruled by laws entirely foreign to our experience. Following in the footsteps of NanoSociety and Nanotechnology: The Future is Tiny, this title introduces a new collection of stories demonstrating recent research in the field of nanotechnology. The book gives a personal perspective on how nanotechnologies are created and developed, and will appeal to anyone who has an interest in the research and future of nanotechnology.

Brief Contents
- The Flatlands of the Nanoverse
- The Growing Landscape of Two-dimensional Materials
- Not Found in Nature: Metamaterials and Metasurfaces
- Nanotechnology Unleashed
- Nanobiotechnology
- Nanomedicine
- Characterization
- Engineering at the Nanoscale
- (Mostly Wearable) Electronics
- Sensors &amp

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
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

www.rsc.org/books
Advance Book Information

Organic Thermoelectric Materials

Zhiqun Lin Georgia Institute of Technology, USA
Ming He Peking University, China

Synopsis

Organic thermoelectric materials have gained attention in energy-harvesting and cooling applications due to their intrinsic low cost, energy efficient, and eco-friendly nature. This book summarises the significant progress in the molecular designs, physical characterizations, and performance optimizations of organic thermoelectric materials, focusing especially on the effective routes to minimize the thermal conductivity and maximize the power factor. This informative guide will appeal to graduate students as well as academic and industrial researchers across chemistry, materials science, physics and engineering interested in the materials and their applications.

Brief Contents

- Thermoelectric Transport Theory in Organic Semiconductors
- Synthesis of organic thermoelectric materials
- PEDOT-based Thermoelectrics
- Carbon Based Thermoelectric Materials
- Organic Hierarchical Thermoelectric Materials
- Conducting Polymer-Based Organic-Inorganic Thermoelectric Nanocomposites
- Thermoelectric materials by organic intercalation
- Flexible organic-based thermoelectric devices
Nutrition and Cancer Prevention
From Molecular Mechanisms to Dietary Recommendations

Thomas Prates Ong University of São Paulo, Brazil
Fernando Salvador Moreno University of São Paulo, Brazil

Synopsis
Cancer is a major global public health problem. Among different environmental and lifestyle factors contributing to cancer risk, diet is a key one. Written by an influential, international team of experts, this book presents and discusses current topics on nutrition and cancer prevention. It covers both nutritional influences on different cancers plus specific chapters on the commonly occurring cancers. Nutritional genomics-based studies show that some dietary components modulate carcinogenesis through complex cellular and molecular mechanisms. A better understanding of these different mechanisms is needed to establish more efficient dietary recommendations for cancer prevention. This book will provide such an understanding, serving as an important book for all those working in nutritional health, food science and cancer research.

Brief Contents
- Introduction to Diet, Nutrition and Cancer
- Bioactive Compounds from Fruits and Vegetables and Cancer Prevention
- Vitamin D in Obesity and Cancer Prevention
- Selenium and Cancer Prevention
- Zinc and Cancer Prevention
- Red and Processed Meat Consumption and Cancer Risk
- Alcohol Intake and Cancer Risk
- Fatty Acids and Cancer Risk
- Obesity and Cancer Risk
- Dietary Patterns and Cancer Risk

To order
USA and Canada
Please contact:
Ingram Publisher Services
Customer Service, Box 631
14 Ingram Blvd
La Vergne, TN 37086, USA
Tel: +1 (866) 400 5551
Fax: +1 (800) 838 1149
Email: ips@ingramcontent.com

www.rsc.org/books
Registered charity number: 207890
Advance Book Information

Photochemistry
Volume 47
Angelo Albini University of Pavia, Italy
Stefano Protti University of Pavia,

Synopsis
Reviewing photo-induced processes that have relevance to a wide-ranging number of academic and commercial disciplines, this volume reflects the current interests in chemistry, physics, biology and technology. Highlight chapters include the molecules of colour, solar photocatalysis, photochemistry in cryogenic matrices, photoresponsive hydrogels and molecular photoswitches. Essential reading for postgraduates, academics and industrialists working in the field of photochemistry, enabling them to keep on top of the literature.

Brief Contents
- Introduction of the Year 2018
- Light Induced Reactions in Cryogenic Matrices (Highlights 2017-2018)
- Dynamics of Photoinduced Bulk and Surface Reactions Involving Semiconductors Characterized by Time Resolved Spectroscopy Techniques (2015-2018)
- The Molecules of Colour and Art. Molecules with History and Modern Applications

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: inquiries@marston.co.uk
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

www.rsc.org/books
Registered charity number: 207890
Travelling with the Atom
A Scientific Guide to Europe and Beyond

Glen E Rodgers Allegheny College, PA

Synopsis
The atomic concept is perhaps one of the most significant and enduring ideas in the history of humankind and to truly appreciate the labour that the great minds of the age expended upon atomic theory one can scarcely do better than trace their footsteps throughout Europe and across the globe. From Parisian museums to the legendary Cavendish laboratory - via Christchurch, Montreal and Pennsylvania - Travelling with the Atom sketches the development of the atomic concept through the places and people central to the advances in our understanding of the particles forming our entire physical universe. An ideal travelling companion or fireside read, this book will intrigue and amuse anyone with an interest in the history of science.

Brief Contents
- Travelling with the History of the Atomic Concept
- Bookending the Atom
- Pneumatists Set the Atomic Stage
- Hard Spheres Banquet
- Pictograms, the First Concrete Atomic Theory
- Electricity and the Atom
- The Brits, Led by the “Crocodile” and His Boys, Take the Atom Apart
- Scientists at the Heart of Westminster Abbey
- The New French Chemistry and Atomism
- Atoms Go South

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
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

www.rsc.org/books
Registered charity number: 207890