Challenges for Health and Safety in Higher Education and Research Organisations

Olga Kuzmina Imperial College London, UK
Stefan Hoyle

Synopsis
This book will provide a summary of the main obstacles for creating and maintaining high standards of health and safety in higher education research institutions and how to tackle them effectively. The obstacles include high staff turnover and regular student turnover, small groups lacking unified management structure, deadline time pressures, restricted funding models and existing "old school" culture. Often the Health and Safety specialists and personnel managers in these organisations find themselves reiterating the same information, which gets lost as soon as the new cohort of workers arrives. Aimed at organisations worldwide, Universities and research institutes, who conduct scientific and engineering research with transient workers and students.

Brief Contents
- Main Challenges Faced in the Research and Higher Educational Organisations
- Managing Legal Risks in an Uncertain Environment
- The EU and Safety Management in Higher Education
- Safety Culture, Stress and Wellbeing: Educate not Indoctrinate: Training and Support for Workplace with High Turnover of Staff
- Safety in Undergraduate Chemistry Laboratories - How to Train Safe Chemists
- The Medical School: Managing Safety in Medical Education
- Safety Outside of the Classroom

All information is subject to change without notice.
Computational Techniques for Analytical Chemistry and Bioanalysis

Philippe B Wilson De Montfort University, UK
Martin Grootveld De Montfort University, UK

Synopsis
As analysis in chemical and biological fields has developed so computational techniques have advanced enabling greater understanding of the data. This work will serve as a definitive overview of the field of computational simulation as applied to analytical chemistry and biology, drawing on recent advances as well as describing essential, established theory. Computational approaches provide additional depth to biochemical problems, as well as offering alternative explanations to atomic scale phenomena. Highlighting the innovative and wide-ranging breakthroughs made by leaders in computational spectrum prediction and the application of computational methodologies to analytical science, this book is for graduates and postgraduate researchers showing how computational analytical methods have become accessible across disciplines.

Brief Contents
- Univariate and Multivariate Statistical Approaches to the Analysis and Interpretation of NMR-based Metabolomics Datasets of Increasing Complexity
- Recent Advances in Computational NMR Spectrum Prediction
- Computational Vibrational Spectroscopy: A Contemporary Perspective
- Isotope Effects as Analytical Probes: Application of Computational Theory
- Applications of Computational Intelligence Techniques in Chemical and Biochemical Analysis
- Computational Spectroscopy and Photophysics in Complex Biological Systems: Towards an in silico Photobiology

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
Concepts of Small-scale Food Processing

Donald G. Mercer University of Guelph, Canada

Synopsis
Providing detailed information on key areas of post-harvest technologies, this book is written with small-scale processors and entrepreneurs in food processing in mind. Uniquely it will review the hands-on aspects of food processing from a largely non-academic viewpoint. It is written in non-technical language and covers everything from the basic science of why food is processed to a description of the main methods used. The target audience for this book is vastly under-served with appropriate information and the abundant use of photographs, showing the various concepts described in the text, makes this book appealing to those required to understand their food process operations.

Brief Contents
- Why Food Is Processed
- Historical Development of Food Processing
- Background Skills for Food Processing
- Heating and Cooling in Food Processing
- Thermal Processing Basics
- Thermal Processing – Specialized Calculations
- Basics of Drying Food Materials; Developing and Using Mathematical Drying Models; Industrial Dryers and Home Food Dehydrators
- Solar Dryers and Open-Air Food Drying
- Statistical Manufacturing Control

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 665555
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
Environmental Pollutant Exposures and Public Health

R M Harrison University of Birmingham, UK

Synopsis
On a day-to-day basis, we are constantly exposed to a variety of different pollutants. From the air we breathe to the food we eat, undesirable substances can be found everywhere and they can have significant health effects. Covering topics from dietary exposure to chemicals through to the health effects of climate change, this book brings together contributors from around the world to highlight the latest science on how environmental pollutant exposure impacts upon public health.

Brief Contents
- Dietary exposures to chemicals and health
- Chemical pollution of the aquatic Environment and health
- Microbiological contamination of water and health
- Outdoor and indoor air pollutant exposure
- The effects of air pollution upon public health
- The effects of indoor air pollution on children’s health
- Contaminated land and human health
- Environmental radiation and health
- Endocrine disrupting chemicals and health
- Consumer products as a source of human exposure to chemicals
Everything Is Natural
Exploring How Chemicals Are Natural, How Nature Is Chemical and Why That Should Excite Us

James Kennedy  Monash College, Australia

Synopsis
Since the early 1990s, advances in toxicology have allowed scientists to detect traces of adulterant substances in everyday products – even down to parts per billion concentrations. We can now detect the presence of harmful ingredients at levels so low that they actually cause no harm. This book explores the history of chemical fears and the recent events that amplified it. It describes how consumers, teachers, doctors, lawmakers and journalists can help make better connections with the public by telling stories that are more engaging about chemistry and materials science.

Brief Contents
- TBA

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
New Tools to Interrogate Endocannabinoid Signalling

From Natural Compounds to Synthetic Drugs

Mauro Maccarrone University of Rome, Italy

Synopsis

This book covers the study of natural compounds that affect the endocannabinoid signalling and their utilisation to produce potential therapeutics and tools to understand the basis of the endocannabinoid signalling system in a variety of diseases. Ideally suited for pharmaceutical researchers in natural product drug discovery and those studying endocannabinoid signalling, particularly in neurochemistry, this book is a timely summation of this fast moving subject of broad and current interest.

Brief Contents

- Quest for Magic Bullets to Solve the Endocannabinoid Puzzle
- Phyto- versus Endocannabinoids. A Modern View of the Endocannabinoid System
- Natural Compounds and Synthetic Drugs to Target Type-1 Cannabinoid (CB1) Receptor
- Natural Compounds and Synthetic Drugs to Target Type-2 Cannabinoid (CB2) Receptor
- Natural and Synthetic Cannabinoids Targeting non-CB1, non-CB2 G Protein Coupled Receptors
- Natural Compounds and Synthetic Drugs Targeting the Ionotrophic Cannabinoid Members of Transient Receptor Potential (TRP) Channels

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
Peptide-based Biomaterials

Mustafa O. Guler The University of Chicago, USA

Synopsis
Research into the field of peptide materials is booming, as these versatile building blocks are used to design a host of functional biomaterials via chemical modifications. It is a field that is attracting research interest from across soft matter science, molecular engineering and biomaterials science. This book covers the fundamental concepts of self-assembly, design and synthesis before moving on to focussed chapters describing important peptide based materials and their biomedical applications. Each of these chapters is written by a leader in their respective field and will be the definitive guide to the field.

Brief Contents
- Design and Synthesis of Peptides for Developing Biomaterials
- Characterization of Peptides and Their Assemblies
- Peptide Engineering Strategies
- Designing Enzyme Responsive Biomaterials
- Peptide Self-Assembly Applied to Catalytic Asymmetric Aldol Reactions
- The use of D-amino acids for peptide self-assembled systems
- Amyloid-like Peptide Aggregates
- Regenerative Medicine Applications of Peptide Hydrogels
- Drug Delivery Applications of Peptide Materials
- Glycosylated Peptide Materials

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 5551
Fax: +1 (800) 838 1149
Email: ips@ingramcontent.com

www.rsc.org/books
Registered charity number: 207890
Saltmarsh's Essential Guide to Food Additives

Mike Saltmarsh Inglehurst Foods Limited, UK

Synopsis

Food additives have played and still play an essential role in the food industry. Additives span a great range from simple materials like sodium bicarbonate, essential in the kitchen for making cakes, to mono- and diglycerides of fatty acids, essential emulsifiers in low fat spreads and in bread. It has been popular to criticise food additives, and in so doing, to lump them all together, but this approach ignores their diversity of history, source and use. While the pace of change in legislation and application of food additives has slowed, there have been a number of changes since the fourth edition was published in 2013. The book will include food additives and why they are used, safety of food additives in Europe, additive legislation within the EU and outside Europe and the complete listing of all additives permitted in the EU. Bringing the literature up to date, it will include a new chapter on clean labelling and comment on the impact of the departure of the UK from the EU. Providing an invaluable resource for food and drink manufacturers, this book is the only work covering in detail every additive, its sources and uses.

Brief Contents

- Food Additives and Why They Are Used
- Safety of Food Additives in Europe
- European Union Controls on Food Additives - A Historical Overview
- Food Additive Regulations in Europe
- Individual Additives: Additives Permitted in the EU in 2020

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
The Discovery and Utility of Chemical Probes in Target Discovery

Paul Brennan University of Oxford, UK
Saleta Vazquez-Rodriguez University of Oxford, UK

Synopsis
Numerous genetic methods can be utilised to link a phenotype to a single molecular target but annotated small molecule chemical probes and even entire chemogenomic libraries are increasingly being used as a complementary approach. This book will comprehensively cover the state of the art in chemical probes and best practice for use in target discovery, illustrated throughout with examples. Ideal for students and established biochemists, the book will also cover new technologies for probe discovery, new probe modalities, the new field of probes for RNA targets and the mature field of kinase chemical probes.

Brief Contents
- Introduction to Chemical Probes
- DNA-Encoded Chemistry and its use to Discover Chemical Probes
- Computational Methods for the Discovery of Chemical Probes
- Best Practices for Design and Characterization of Covalent Chemical Probes
- Cyclic Peptides as Chemical Probes
- Discovery and Use of Natural Products and Derivatives as Chemical Probes
- Targeted Protein Degradation Chemical Probes
- Chemical Probes for Kinases
- Chemical Probes to Control RNA Function
- Assays to Characterize Cellular Pharmacology of a Chemical Probe
The Singularity of Nature
A Convergence of Biology, Chemistry and Physics

John S. Torday and William B. Miller Jr

Synopsis
Understanding how simple molecules have given rise to the complex biochemical systems and processes of contemporary biology is widely regarded as one of chemistry’s great unsolved questions. There are numerous theories as to the origins of life, the majority of which draw on the idea that DNA and nucleic acids are the central dogma of biology. The Singularity of Nature: A Convergence of Biology, Chemistry and Physics takes a systems-based approach to the origin and evolution of complex life. Readers will gain a novel understanding of physiologic evolution and the limits to our current understanding: why biology remains descriptive and non-predictive, as well as offering new opportunities for understanding relationships between physics and biology in the origins of biological life at the cellular-molecular level.

Brief Contents

- The Singularity of Nature; Bohm Meets Bacon
- The Cell, Evolution, and Occam’s Razor
- CP Snow’s ‘Two Cultures’ Condition is Resolved by the Singularity
- The Heart is not just a Pump: The Brain is not your only ‘Mind’
- Why You Must Transcend Space-Time in Order to Understand Consciousness
- The Evolutionary Significance of Homeostasis
- Networking from the Cell to Quantum Mechanics as Consciousness
- On Cellular Cooperativity as the Basis for Moral Behavior
- Aging, Senescence and Death as a Systematic Breakdown in Cell-Cell Communication
Vanadium Catalysis

Manas Sutradhar  University of Lisbon, Portugal
Armando J L Pombeiro  University of Lisbon, Portugal
José Armando L da Silva  University of Lisbon, Portugal

Synopsis
Vanadium is one of the more abundant elements in the Earth’s crust making it a more sustainable and more economical choice as a catalyst than many of the noble metals. A wide variety of reactions have been found to be catalysed by both homogeneous and supported vanadium complexes. This book brings together the research on the catalytic uses of this element into one essential resource. Including theoretical perspectives on proposed mechanisms for vanadium catalysis and an overview of its relevance in biological processes.

Brief Contents
- Amavadin and related complexes as oxidation catalysts (alkane carboxylation, electrocatalytic oxidation of thiols, oxidation of water)
- Activating peroxides by vanadium(V) compounds
- The vanadate/pyrazinecarboxylic acid/hydrogen peroxide reagent and similar systems for efficient oxidations with peroxides
- Peroxido-vanadium complexes as sustainable catalysts in oxidations, halogenations and other organic transformations
- Vanadium-scorpionate catalyzed oxidations
- Vanadium-carbohydrazones catalyzed oxidations
- Polyoxidovanadate catalysts in nonaqueous solution

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