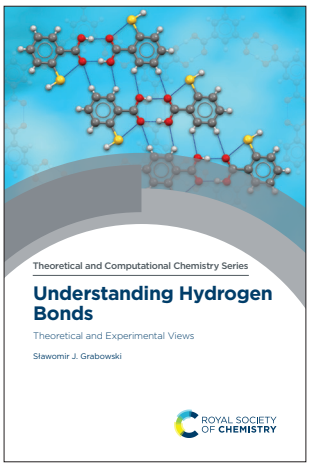
Just published – November 2020

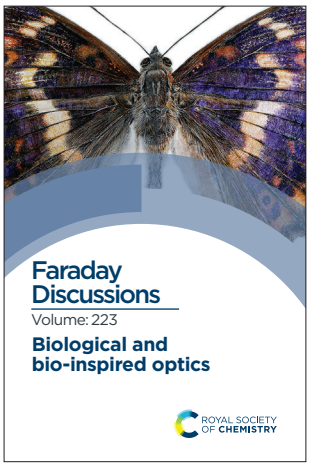


Understanding Hydrogen Bonds

Sławomir J Grabowski University of the Basque Country and Donostia International Physics Center (DIPC), Spain

The area of hydrogen bonding is one that is well studied but our understanding continues to develop as the power of both computational and experimental techniques has improved. This book presents an up-to-date overview of our theoretical and experimental understanding of the hydrogen bond. It covers both well-established and novel approaches, new types of interaction that might be classified as hydrogen bonds and a comparison of hydrogen bonds to other types of non-covalent interactions.

Hardback | 450 pages | ISBN 9781788014793 | £179.00 | $250.00 | 18/11/2020



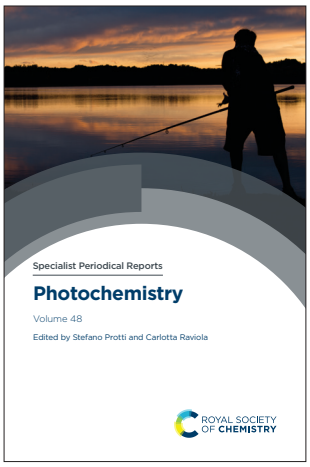
Biological and Bio-inspired Optics

Faraday Discussion 223

Royal Society of Chemistry

Over the last decade, an increasingly advanced understanding of nature's light manipulation strategies has allowed scientists and engineers to design novel biologically inspired photonic materials for a wide range of applications. This Faraday Discussion focusses on the most recent developments in this exciting and rapidly evolving field, assessing our current knowledge of natural light management techniques, discussing the application of this knowledge for bio-inspired materials and looking to the future of the field.

Hardback | 328 pages | ISBN 9781788019125 | £170.00 | $235.00 | 11/11/2020



Photochemistry

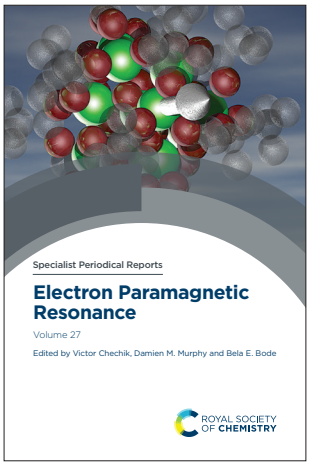
Volume 48

Stefano Protti University of Pavia
Carlotta Raviola University of Pavia

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 advances in computational photochemistry and chemiluminescence of biological and nanotechnological molecules, industrial applications of photochemistry, recent advances in logically and light induced systems and applications of photofragmentation in synthesis. A new category of SPR lectures has been included with the first of several topics being photochemistry of organic compounds at the air-ice interface being covered. Essential reading for postgraduates, academics and industrialists working in the field of photochemistry, enabling them to keep on top of the literature.

Hardback | 466 pages | ISBN 9781839161407 | £314.95 | $440.00 | 18/11/2020

Just published – November 2020



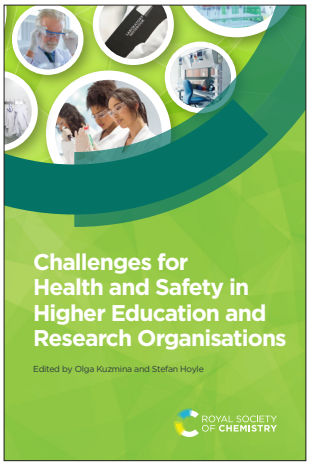
Electron Paramagnetic Resonance

Volume 27

Victor Chechik University of York, UK
Damien M Murphy University of Cardiff, UK
Bela E Bode University of St Andrews, UK

The topics covered in this volume describe contrasting types of electron paramagnetic resonance (EPR) application, which remain very significant in modern science. This volume compiles critical coverage of developments in the recent literature by a hand-picked group of researchers at the cutting-edge of the field. Providing a snapshot of the area, this book is a useful addition to any library supporting this research.

Hardback | 200 pages | ISBN 9781839161711 | £314.95 | $440.00 | 25/11/2020

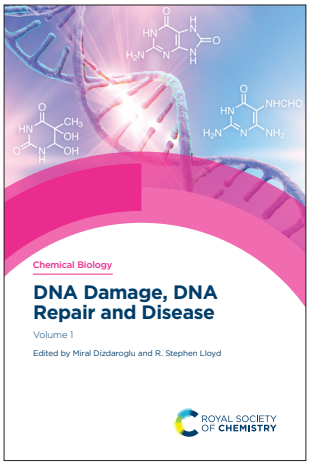


Challenges for Health and Safety in Higher Education and Research Organisations

Olga Kuzmina Imperial College London, UK
Stefan Hoyle

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.

Hardback | 428 pages | ISBN 9781839161599 | £125.00 | $175.00 | 26/11/2020



DNA Damage, DNA Repair and Disease

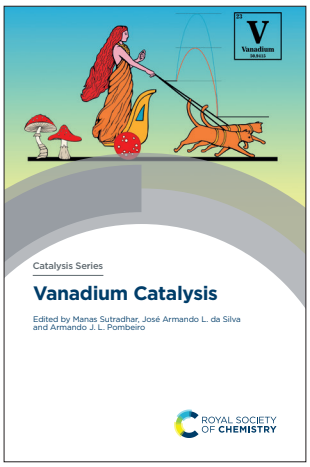
Volume 1

Miral Dizdaroglu National Institute of Standards and Technology
R Stephen Lloyd Oregon Health & Science University, USA

The DNA of all organisms is constantly being damaged by endogenous and exogenous sources. Oxygen metabolism generates reactive species that can damage DNA, proteins and other organic compounds in living cells. These books provide a comprehensive overview of the interdisciplinary area of DNA damage and DNA repair, and their relevance to disease pathology. Edited by recognised leaders in the field, this two-volume set is an appealing resource to a variety of readers including chemists, chemical biologists, geneticists, cancer researchers and drug discovery scientists.

Hardback | 400 pages | ISBN 9781788018890 | £169.00 | $235.00 | 19/11/2020

Just published – November 2020

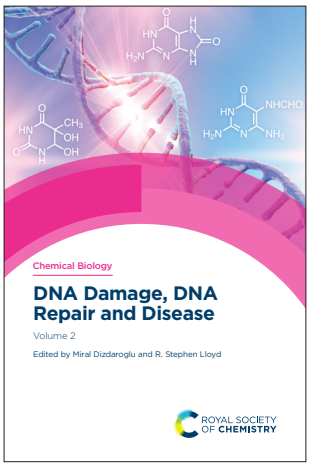


Vanadium Catalysis

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

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.

Hardback | 588 pages | ISBN 9781788018579 | £199.00 | $275.00 | 11/11/2020



DNA Damage, DNA Repair and Disease

Volume 2

Miral Dizdaroglu National Institute of Standards and Technology
R Stephen Lloyd Oregon Health & Science University, USA

The DNA of all organisms is constantly being damaged by endogenous and exogenous sources. Oxygen metabolism generates reactive species that can damage DNA, proteins and other organic compounds in living cells. Exogenous sources include ionizing and ultraviolet radiations, carcinogenic compounds and environmental toxins among others. The discovery of multiple DNA lesions and DNA repair mechanisms showed the involvement of DNA damage and DNA repair in the pathogenesis of many human diseases, most notably cancer. These books provide a comprehensive overview of the interdisciplinary area of DNA damage and DNA repair, and their relevance to disease pathology..

Hardback | 480 pages | ISBN 9781839162510 | £179.00 | $250.00 | 19/11/2020

New Tools to Interrogate Endocannabinoid Signalling

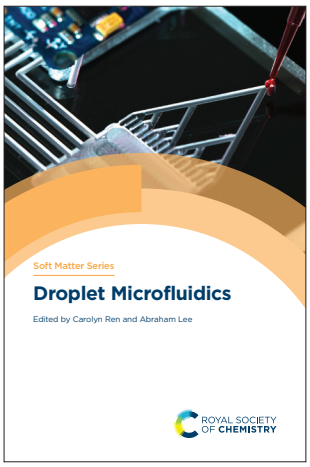
From Natural Compounds to Synthetic Drugs

Mauro Maccarrone University of Rome, Italy

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.

Hardback | 458 pages | ISBN 9781788018012 | £159.00 | $220.00 | 13/11/2020

Just published – November 2020

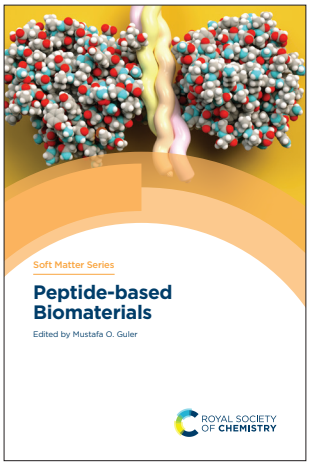


Droplet Microfluidics

Carolyn Ren University of Waterloo, Canada
Abraham Lee University of California, Irvine, USA

Edited by two leaders, this book has drawn together expertise from around the globe to form a unified, cohesive resource for the droplet microfluidics community. Starting with the basic theory of droplet microfluidics before introducing its use as a tool, the reader is treated to chapters on important techniques, including robust passive and active droplet manipulations and applications such as single cell analysis, which is key for drug discovery. This book is a go-to resource for the community yearning to adopt and promote droplet microfluidics into different applications.

Hardback | 294 pages | ISBN 9781788017695 | £159.00 | $220.00 | 27/11/2020

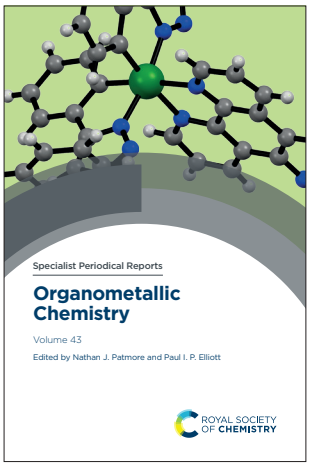


Peptide-based Biomaterials

Mustafa O. Guler The University of Chicago, USA

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.

Hardback | 487 pages | ISBN 9781788017299 | £179.00 | $250.00 | 26/11/2020



Organometallic Chemistry

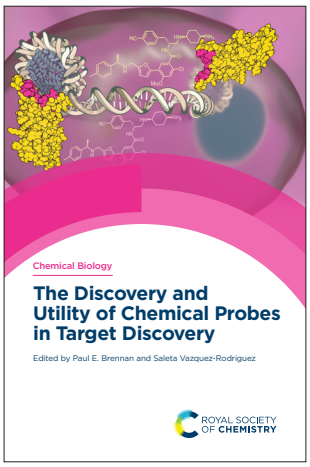
Volume 43

Nathan J Patmore University of Huddersfield, UK
Paul I P Elliott University of Huddersfield, UK

With the increase in volume, velocity and variety of information, researchers can find it difficult to keep up to date with the literature in their field. This interdisciplinary field has the potential to provide answers to problems and challenges faced in catalysis, synthetic organic chemistry and the development of therapeutic agents and new materials. Providing an invaluable volume, this volume contains analysed, evaluated and distilled information on the latest in organometallic chemistry research.

Hardback | 228 pages | ISBN 9781788016919 | £314.95 | $440.00 | 09/11/2020

Just published – November 2020

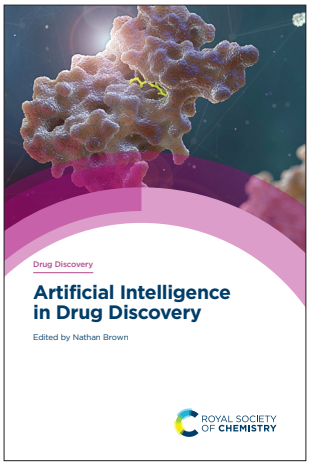


The Discovery and Utility of Chemical Probes in Target Discovery

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

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 discover, 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.

Hardback | 320 pages | ISBN 9781788015899 | £159.00 | $220.00 | 26/11/2020



Artificial Intelligence in Drug Discovery

Nathan Brown Benevolent AI, London, UK

Due to significant advances in Deep Learning and related areas, artificial intelligence methods are increasingly utilised in drug discovery to tackle challenges that have hitherto been difficult to solve, such as predicting properties, designing molecules, and optimising synthetic routes. Artificial Intelligence in Drug Discovery comprehensively covers artificial intelligence and machine learning tools and techniques; covering specific challenges such as learning from chemical data, designing new molecular structures, predictive modelling in both ligand and structure-space, synthesis planning, and molecular simulations. The book tackles real-world challenges in drug discovery ensuring context of application is preserved and disseminated by world leaders in the field.

Hardback | 406 pages | ISBN 9781788015479 | £179.00 | $250.00 | 11/11/2020