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The Chemical Biology Series is a new venture that aims to provide a comprehensive suite of reference books on developing areas at the interface of chemistry and biology. Chapters written and edited by experts worldwide will introduce practical aspects and best methods, will explain the fundamental chemistry knowledge, and will provide forward-looking perspectives. Ultimately, the series aims to aid postgraduate students and researchers apply chemical tools and understand current challenges in the field. The books will provide a valuable reference for scientists working outside their own area of current expertise or looking to engage in chemical biology research. Coverage will include topics such as analytical and computational tools, chemical probes, imaging, glycosciences, genomics and transcriptomics, chemical genetics and gene editing tools, and aspects of synthetic biology.

DNA Damage, Repair and Disease

Miral Dizdaroglu NIST, USA | R Stephen Lloyd Oregon Health & Science University, USA

DNA in living organisms is constantly undergoing damage from a wide range of factors and understanding the mechanisms involved in the detection of DNA damage and its repair provides promising new avenues for disease management. This book provides a comprehensive overview of the interdisciplinary area of DNA damage and repair and their relevance to disease pathology. Edited by recognised leaders in the field, this book is an appealing resource to a variety of readers from geneticists, chemical biologists and cancer researchers to drug discovery scientists with an interest in gene therapy.

Hardback | 450 pages | 9781788018890 | 2020 | £179.00 | $250.00

Inhibitors of Protein–Protein Interactions

Ali Tavassoli University of Southampton, UK

Many biological functions involve the formation of protein-protein complexes and the inhibition of this process has led to significant interest in pharmaceutical research and the development of novel therapies for numerous diseases. This book comprehensively covers the various approaches to the inhibition of protein-protein interactions from small molecule inhibitors to peptidomimetics, cyclic peptides, macrocycles and antibodies. Illustrated throughout with successful case studies this book provides a holistic, cutting-edge view of the subject area and is ideal for chemical biologists and medicinal chemists interested in developing PPI inhibitors.

Hardback | 300 pages | 9781788015691 | 2020 | £159.00 | $220.00
NMR in Chemical Biology
Advances and Applications
Sofia Pauleta Universidade Nova de Lisboa, Portugal | Eurico J Cabrita Universidade Nova de Lisboa, Portugal

NMR is an important tool for achieving molecular reasoning of biological systems at the interface between chemistry and biology. NMR in Chemical Biology focuses on the use of small molecules as tools for chemical biology, the latest advances in structure elucidation of small molecules and their interactions with biomolecules, modern approaches to structure determination of lipids, proteins, glycans and nucleic acids as well as the NMR approaches to characterize complex protein dynamics in solution. Illustrated with examples of the application of NMR to tackle important problems in chemical biology, this book is ideal for a wide range of chemical biologists from medicinal and organic chemists to biochemists in academia and industry working in a range of disciplines.

Hardback | 450 pages | 9781788011723 | 2020 | £179.00 | $250.00

RNA Polymerases as Molecular Motors
2nd Edition
Robert Landick University of Wisconsin-Madison, USA | Terence Strick Institut Jacques Monod, France | Jade Wang University of Wisconsin-Madison, USA

The cell can be viewed as a 'collection of protein machines' and understanding these molecular machines requires sophisticated cooperation between cell biologists, geneticists, enzymologists, crystallographers, chemists and physicists. To observe these machines in action, researchers have developed entirely new methodologies for the detection and the nanomanipulation of single molecules. This book, written by expert scientists in the field, analyses how these diverse fields of research interact on a specific example - RNA polymerase.

Hardback | 350 pages | 9781788013659 | 2020 | £169.00 | $235.00

The Discovery and Utility of Chemical Probes in Target Discovery
Paul Brennan 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.

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Initiated by the European Society for Photobiology this series provides comprehensive overviews on specific areas of photoscience, giving in-depth coverage of the very different fields related to light effects. It embraces both well-established and emerging fields and allows investigators, physicians, industrialists and postgraduate students to obtain an updated account in specific areas and a ready access to the recent literature. Importantly, books in this series provide a critical evaluation of the directions that the field is taking.

Optical Techniques in Biomedical and Biophysical Sciences

Franco Fusi University of Florence, Italy | Giovanni Romano University of Florence, Italy

Optical Techniques in Biomedical and Biophysical Sciences aims to provide an overview of light sources, together with an extensive and authoritative description of the optical techniques in bio-medicine. This book is designed to give biomedical researchers a strong feel for the capability of physical approaches, promote new interdisciplinary interests and persuade more practitioners to take advantage of optical techniques. Supplemented with videos providing a hands-on description of the techniques and procedures, this book has a technique focused approach ideal for anyone working in this interdisciplinary field.

Hardback | 350 pages | 9781788015295 | 2021 | £169.00 | $235.00
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The Drug Discovery Series covers all aspects of drug discovery and medicinal chemistry and contains over sixty books published since 2010. Providing comprehensive coverage of this important and far-reaching area, the books encourage learning in a range of different topics and provide valuable reference sources for scientists working outside their own areas of expertise. Books feature case studies to bring different aspects of the drug discovery process alive and they detail the fundamental science necessary for understanding through to the most up-to-date discoveries and cutting-edge technologies. Chapters are written and edited by experienced researchers from both industry and academia. This series will be of particular interest to postgraduate students and medicinal chemists and biochemists working in academia or industry.

Antiviral Discovery for Highly Pathogenic Emerging Viruses

César Muñoz-Fontela Bernhard Nocht Institute for Tropical Medicine, Germany | Rafael Delgado Hospital Universitario 12 de Octubre, Spain

New antivirals are urgently needed. Recent outbreaks caused by viruses with great epidemiological impact such as Zika, or extraordinary virulence such as Ebola, Nipah, Lassa, Crimean-Congo Haemorrhagic fever highlight the current lack of clinically proven vaccines and treatments for these potentially catastrophic agents. Drug Discovery for Emerging Viruses will comprehensively outline the state of the art in antiviral drug discovery including identification of targets, screening, strategies, and the current pipeline of candidate antivirals. The book will also address the challenges faced in proceeding from pre-clinical studies to animal models and clinical trials with these highly pathogenic agents.

Hardback | 340 pages | 9781788015646 | 2020 | £159.00 | $220.00

Anti-fibrotic Drug Discovery

Jehrod Brenneman KSQ Therapeutics, USA | Malliga R Iyer National Institutes of Health, USA

Fibrosis is a condition with globally high unmet medical need, and as such is a highly active area of academic and pharmaceutical research covering multiple treatment targets, organs, tissues and therapeutic approaches. Anti-fibrotic Drug Discovery is a single source reference for the latest drug-discovery approaches to tackle fibrosis in various tissues, comprehensively covering recent success and future perspectives on emerging therapeutic intervention points. This book is ideal for practitioners in fibrosis drug discovery and research as well as clinicians specialising in liver, kidney, heart and lung disease, in which fibrosis plays a key role in pathology.

Hardback | 450 pages | 9781788015103 | 2020 | £179.00 | $250.00
Artificial Intelligence in Drug Discovery  
**Nathan Brown** Benevolent AI, 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 | 500 pages | 9781788015479 | 2020 | £179.00 | $250.00**

DNA-encoded Library Technology for Drug Discovery  
**Jin Li** HitGen Ltd., China | **Barry Morgan** HitGen Ltd., China | **Casey J Krusemark** Purdue University, USA  
DNA-Encoded libraries have numerous advantages over traditional screening methods including easy identification of compounds and the large quantity of compounds that can be screened simultaneously. This book provides a comprehensive guide to the implementation of DNA-Encoded Library Technology (DEL T) in drug discovery from encoding and library synthesis to screening and hit validation. A valuable resource for researchers in drug discovery, this book is complete with successful case studies to illustrate the best practice in implementation and operation of DELT.  
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New Tools to Interrogate Endocannabinoid Signalling  
**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 | 300 pages | 9781788018012 | 2021 | £159.00 | $220.00**

Phenotypic Drug Discovery  
**Beverley Isherwood** AstraZeneca, UK | **Angelique Augustin** Roche, Switzerland  
Phenotypic drug discovery has been highlighted in the last decade as an important strategy in the discovery of novel medical entities. How many marketed drugs are derived from phenotypic screens? From the most recent examples, what were the factors enabling target identification and validation? From the contribution of phenotypic screens to marketed drugs and the fundamental capabilities required for phenotypic discovery and platform development to recent case reports this book brings together a wealth of experience from practitioners across academia and industry sharing their perspectives on key success factors, technologies and future directions. This book aims to equip researchers with a though-provoking guide to the application and development of contemporary phenotypic drug discovery for clinical success.  
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Protein Degradation with New Chemical Modalities
Successful Strategies in Drug Discovery and Chemical Biology

Hilmar Weinmann Bayer AG, Germany | Craig Crews Yale University, USA

Targeting protein degradation using small molecules is one of the most exciting small-molecule therapeutic strategies in decades and a rapidly growing area of research. In particular, the development of proteolysis targeting chimera (PROTACs) as potential drugs capable of recruiting target proteins to the cellular quality control machinery for elimination has opened new avenues to address traditionally 'difficult to target' proteins. This book provides a comprehensive overview from the leading academic and industrial experts on recent developments, scope and limitations in this dynamically growing research area; an ideal reference work for researchers in drug discovery and chemical biology as well as advanced students.

Hardback | 400 pages | 9781788016865 | 2020 | £179.00 | $250.00

Protein–Protein Interaction Regulators

Siddhartha Roy Bose Institute, India | Haian Fu Emory University School of Medicine, USA

Molecular interactions, protein–protein interactions play a crucial role in regulating many cellular functions. In many diseases, aberrant forms of these interactions play central roles. Thus, they have emerged as critical drug targets. This book includes a survey of recent advances in the structural understanding of protein–protein interactions, as well as recent developments in modulator discovery.

Hardback | 350 pages | 9781788011877 | 2020 | £169.00 | $235.00

The Medicinal Chemist's Guide to Solving ADMET Challenges

Patrick Schnider Roche, Switzerland

Medicinal chemistry is a complex science that lies at the very heart of drug discovery. Poor solubility, complex metabolism, tissue retention and slow elimination are just some of the properties of investigational compounds that present a challenge to the design and conduct of ADMET studies. Medicinal chemistry experience and knowledge relating to how a lead structure was modified to solve a specific problem is generally very challenging to retrieve. Presented in a visual and accessible style, Medicinal Chemistry Optimization intends to provide rapid solutions to overcome the universal challenges to optimizing ADMET.

Hardback | 300 pages | 9781788012270 | 2020 | £159.00 | $220.00
Issues in Toxicology

About the series
ISSN: 1757-7179

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The field of toxicological research is continually expanding and diversifying, driven by the need to understand the human and ecological risks of exposure to chemicals and other toxicants. This Series is devoted to coverage of modern toxicology and assessment of risk. Written by expert scientists from academia, government and industry, each book will serve as a guide to investigations in toxicology, biomedicine, biochemistry, forensics and environmental and pollution sciences.

Big Data in Predictive Toxicology

Daniel Neagu University of Bradford, UK | Andrea-Nicole Richarz European Commission - Joint Research Centre, Italy

The rate and volume of toxicological data generation is continually growing due to novel techniques and software. The amplified pace and capacity of data generation has repercussions for organising and analysing data output. This book discusses these challenges as well as the nature, storage, analysis and interpretation of toxicological big data. It details how these data are applied in toxicity prediction, modelling and risk assessment. This title is relevant for researchers and postgraduates in the fields of computational methods, applied and physical chemistry, cheminformatics, biological sciences, predictive toxicology, and safety and hazard assessment.

Hardback | 300 pages | 9781782622987 | 2020 | £159.00 | $220.00

Challenges in Endocrine Disruptor Toxicology and Risk Assessment

Alberto Mantovani Italian National Health Institute, Italy | Alexandra Fucic Institute for Medical Research and Occupational Health, Hungary

Endocrine disruptors are chemicals that can interfere with the endocrine systems (hormone systems) at certain dosages and are known to affect the development of numerous diseases. They are an increasing concern given the number of known EDCs in household products and the environment. This book will cover the pathology of EDCs across the spectrum of disease as well as risk assessment and government and legal regulation to provide a holistic view of the current issues and cutting-edge research.

Hardback | 350 pages | 9781788017411 | 2021 | £169.00 | $235.00
Conference on Drug Design and Discovery Technologies

Manikanta Murahari MS Ramaiah University of Applied Sciences, India | Lakshmi Sundar MS Ramaiah University of Applied Sciences, India | Soma Chaki MS Ramaiah University of Applied Sciences, India | Vasanthanathan Poongavanam Uppsala University, Sweden | Pritesh Bhat Schrodinger, Bangalore, India | Usha Y Nayak Manipal University, India

This publication is based on peer-reviewed manuscripts from the 2019 Conference on Drug Design and Discovery Technologies (CDDT) held at Ramaiah University of Applied Sciences, India. Providing a wide range of up to date topics on the latest advancements in drug design and discovery technologies, this book ensures the reader receives a good understanding of the scope of the field. Aimed at scientists, students, regulators, academics and consultants throughout the world, this book is an ideal resource for anyone interested in the state of the art in drug design and discovery.

Hardback | 300 pages | 9781788018623 | 2020 | £125.00 | $175.00
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Amino Acids, Peptides and Proteins

Volume 44
Maxim Ryadnov National Physical Laboratory, UK | Ferenc Hudecz Eötvös Loránd University, Hungary

Amino Acids, Peptides and Proteins comprises a comprehensive and critical review 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.

Hardback | 250 pages | 9781788016896 | 2020 | £314.95 | $440.00

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Chemical and Biological Approaches Volume 44
Amelia Pilar Rauter Universidade de Lisboa, Portugal | Thisbe K Lindhorst Kiel University, Germany | Yves Queneau INSA Lyon, France

This invaluable volume contains analysed, evaluated and distilled information on the latest in carbohydrate research. The discovery and synthesis of novel carbohydrates and mimetics with diverse applications continues to be a major challenge for carbohydrate chemists. The understanding of the structure and function of carbohydrates and glycoconjugates remains vital in medicine and molecular biology. Covering both chemical and biological science related to the particular volume topic, this series demonstrates the interdisciplinary nature of modern carbohydrate research, and benefits any researcher who wishes to learn about the latest developments in the carbohydrate field.

Hardback | 300 pages | 9781788013680 | 2021 | £314.95 | $440.00

Organophosphorus Chemistry

Volume 49
David W Allen Sheffield Hallam University, UK | David Loakes University of Cambridge, UK | Lee J Higham Newcastle University, UK | John C Tebby Sheffield Hallam University, UK

This annual review of the literature presents a comprehensive and critical survey of the vast field of study involving organophosphorus compounds, from phosphines and related P-C bonded compounds to phosphorus acids, phosphine chalcogenides and nucleotides. The Editors have added to the content with a timely chapter on the recent developments in green synthetic approaches in organophosphorus chemistry to reflect current interests in the area.

Hardback | 370 pages | 9781788018647 | 2020 | £314.95 | $440.00

Photochemistry

Volume 48
Stefano Protti University of Pavia, Italy | Angelo Albini University of Pavia, Italy | Carlotta Raviola University of Pavia, Italy

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 | 400 pages | 9781839161407 | 2020 | £314.95 | $440.00
Glossary of Terms Used in Molecular Toxicology

Douglas Templeton University of Toronto, Canada | John Duffus The Edinburgh Centre for Toxicology, UK | Michael Schwenk Federal Public Health Department, Germany

Molecular toxicology is a rapidly expanding subject area that is very interdisciplinary, the requirement for both toxicologists and non-toxicologists to familiarise themselves with the terminology used in a variety of contexts is important to ensure the topic’s continued expansion. This book is an ideal reference for students of toxicology interested in cellular and molecular mechanics of toxicology and pathology as well as biologists, medicinal chemists and researchers in drug development interested in the molecular-level aspects of toxicology.

Hardback | 450 pages | 9781788017718 | 2020 | £70.00 | $95.00
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