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In 2020, you can look forward to more titles that cover emerging areas like biomaterials science and inorganic materials, and more additions to our new *Food Chemistry, Function and Analysis* series. The core disciplines are represented by works focusing on significant developments in analytical science, green chemistry, catalysis and detection science.

Continuing our collaboration with IUPAC, we will also be publishing the fourth edition of the *Compendium of Terminology in Analytical Science*, an abridged version of *Quantities, Units and Symbols in Physical Chemistry*, and the *Glossary of Terms Used in Molecular Toxicology*.

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In *Good Chemistry*, we provide a textbook that goes beyond experimental procedure, to help practising scientists develop the skills to recognise the ethical and social dimensions of their own work and act appropriately.

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Chemistry is at the centre of everything you can see, smell, touch and taste, so we will be adding to the books that show the chemistry in our lives. *Sticking Together*, *Discovering Cosmetic Science* and *Perfume in the Bible* are just a few examples of books to broaden your chemistry horizons that you can look forward to in 2020.

If you have any queries, contact books@rsc.org  to talk to the team.

For a list of books published prior to 2020, visit [rsc.li/backlist](https://www.rsc.li/backlist)

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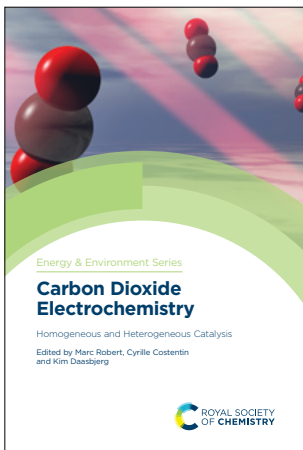
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Energy lies at the heart of modern society, and it is critical that we make informed choices of the methods by which we convert and manage energy. This series provides up-to-date and critical perspectives on the various options that are available. The wide range of topics covered reflects the wealth of chemical ideas and concepts that have the potential to make an important impact the search for sustainable energy. Books in this series form important references for chemists and material scientists, chemical and process engineers, energy researchers, bio-scientists and environmental scientists from across academia, industry and Government.

Carbon Capture and Storage

ee

Mai Bui Imperial College London, UK | **Niall Mac Dowell** Imperial College London, UK

This book will provide the latest global perspective on the role and value of carbon capture and storage (CCS) in delivering temperature targets and reducing the impact of global warming. As well as providing a comprehensive, up-to-date overview of the major sources of carbon dioxide emission and negative emissions technologies, the book also discusses technical, economic and political issues associated with CCS along with strategies to enable commercialisation.

Hardback | 570 pages | 9781788011457 | 2020 | £179.00 | \$250.00

ISBN 978-1-78801-145-7
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Carbon Dioxide Electrochemistry

ee

Homogeneous and Heterogeneous Catalysis

Marc Robert Université Paris Diderot, France | **Cyrille Costentin** Université Paris Diderot, France | **Kim Daasbjerg** Aarhus University, Denmark

Conversion of light and electricity to chemicals is an important component of a sustainable energy system. Carbon Dioxide Electrochemistry showcases different advances in the field, and bridges the two worlds of homogeneous and heterogeneous catalysis that are often perceived as in competition in research. Written and edited by internationally recognised scientists, this title will appeal to students and researchers working in energy, catalysis, chemical engineering and physical chemistry.

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Electrochemical Methods for Hydrogen Production



Keith Scott Newcastle University, UK

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.

Hardback | 400 pages | 9781788013789 | 2020 | £179.00 | \$250.00



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Heterogeneous Catalysis for Energy Applications



Tomas R Reina University of Surrey, UK | **Jose A Odriozola** Universidad de Sevilla, Spain

Heterogeneous catalysis plays a central role in the global energy paradigm, with practically all energy-related process relying on a catalyst at a certain point. This book provides an overview of the design, limitations and challenges of heterogeneous catalysts for energy applications. With contributions from leaders in the field, Heterogeneous Catalysis for Energy Applications is an essential toolkit for chemists, physicists, chemical engineers and industrials working on energy.

Hardback | 450 pages | 9781788017183 | 2020 | £179.00 | \$250.00



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Thermal Energy Storage



Materials, Devices, Systems and Applications

Yulong Ding University of Birmingham, UK

Thermal energy storage refers to a collection of technologies that store energy in the forms of heat, cold or their combination, which currently accounts for approximately 55% of global non-pumped hydro installations. This book covers thermal energy storage materials, devices, systems and applications. Edited by an expert in the field, this title is suitable for graduate students and researchers in energy, energy storage, materials engineering, chemical and process engineering, mechanical engineering and manufacture technologies.

Hardback | 500 pages | 9781788017176 | 2021 | £179.00 | \$250.00



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Green chemistry is one of the most rapidly growing fields in modern chemistry, and is widely recognised as being important across the chemical sciences, and throughout industry, education and research. This series provides high-level research books at the cutting-edge of green chemistry. The books are invaluable to industrialists, researchers and academics worldwide and anyone interested in the practical means that are being used to reduce the environmental impact of chemical processes and products.

Biobased Materials for Oil Spill Management **ee**

Bhairavi Doshi Lappeenranta University of Technology, Finland | **Mika Sillanpää**

Lappeenranta University of Technology, Finland

Bio-based materials generally have better biodegradability, lower toxicity and can even be more economical. This book discusses different bio-based approaches to dealing with oil spills, including adsorption, dispersion and degradation. Comparing the sustainability of a variety of bio-based oil spill management options to more conventional approaches, this is a useful reference for people working in the oil industry, oil spill response workers and environmental engineers as well as green materials chemists interested in potential applications for their work.

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Bioplastics and Biocomposites **ee**

A Practical Introduction

David Grewell Iowa State University, USA

Providing readers with a fundamental understanding of plastics and polymer processing, this book introduces bioplastics and biocomposites. Concepts covered include bioplastic processing, formulations, biocomposites, properties of biobased materials, economic evaluations of biobased materials, end of life treatment as well as environmental impacts of biobased materials. This book is ideal for researchers new to this field looking for a solid understanding in the materials science, processing and social and economic impacts of bioplastics.

Hardback | 250 pages | 9781782626565 | 2020 | £149.00 | \$205.00



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CO₂-switchable Materials



Solvents, Surfactants, Solutes and Solids

Philip G Jessop Queen's University, Canada | **Michael F Cunningham** Queen's University, Canada

Summarizing recent progress in the preparation, self-assembly, and functional applications of CO₂-responsive materials, this book explores the physical chemistry of CO₂-switching, including constraints on structural design and process conditions, together with applications. The book discusses the environmental, health, and safety advantages and disadvantages compared to conventional materials. It is ideal for researchers and industrialists working in green chemistry, chemical engineering, polymer chemistry and materials science.

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Greener Analytical Techniques



Miguel de la Guardia University of Valencia, Spain | **Salvador Garrigues** University of Valencia, Spain

The past decade has seen significant developments in improving the greenness of analytical chemistry, including the use of new smart materials as analytical tools. Solvent selection, miniaturization and metrics for the evaluation of method greenness make this book useful for researchers and industry, interested in integrating safer and sustainable analytical techniques into their work. The fact that, in general, green methods of analysis offer cheaper alternatives to traditional ones, adds an economical interest to this approach.

Hardback | 350 pages | 9781788015370 | 2020 | £169.00 | \$235.00



Methane Conversion Routes



Status and Prospects

Vladimir Galvita Ghent University, Belgium | **René Bos** Ghent University, Belgium

Methane is an abundantly available carbon-based feedstock but historically it has been underutilised due to its low chemical reactivity. Highlighting the recent advances in methane activation and direct conversion processes this book discusses the progress and current state of the art for a wide variety of alternative methane activation and subsequent conversion processes, including homogeneous- and heterogeneous catalytic, electro catalytic and pyrolytic systems. It is a useful resource for those working in green chemistry, catalysis and chemical engineering.

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Renewable Resources for Surface Coatings, Inks and Adhesives



Rainer Höfer Editorial Ecosiris, Germany

Providing a detailed survey of renewable raw materials for paints, inks and glues, this book examines the raw materials that are used, their sourcing and processing. It explores biorefineries and white biotechnology manufacturing technologies and the use of renewable raw materials in the latest developments in industrial surface coatings and adhesives. The book is ideal for researchers and industrialists working in green chemistry, industrial coatings, adhesives and inks and printing technologies.

Hardback | 300 pages | 9781782629931 | 2020 | £159.00 | \$220.00



Transition Towards a Sustainable Biobased Economy



Piergiuseppe Morone Unitelma Sapienza University of Rome, Italy | **James H Clark** University of York, UK

This book promotes the development of sustainability schemes (including standards, labels and certifications) for the assessment of biobased products, which are fundamental to the establishment of a cutting-edge sustainable bioeconomy. Chemical-related, globally relevant case studies are used throughout the book. An important resource for researchers, industrial professionals and policy makers involved in the bioeconomy.

Hardback | 300 pages | 9781788015912 | 2020 | £149.00 | \$205.00

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Transportation Biofuels



Pathways for Production, 2nd Edition

Alwin Hoogendoorn The Centre of Expertise Biobased Economy, The Netherlands | **Han van Kasteren** Eindhoven University of Technology and the Centre of Expertise Biobased Economy, The Netherlands

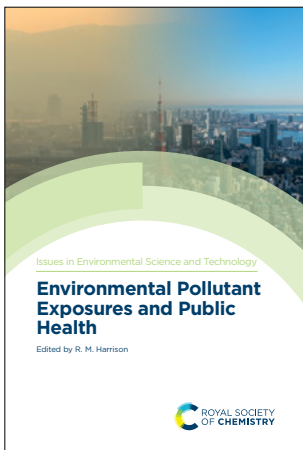
Ten years on from the publication of the first edition of this book and fossil fuels still dominate the transport industry. However, there have been a number of advances in the production of biofuels for transportation use. This new edition provides updates on the previously discussed pathways for biofuels, including new experimental results and pilot plant studies, making it a useful read for researchers and industrialists working in biofuel development as well as postgraduate students studying fuel alternatives.

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Written by world experts in their specialised fields, this series tackles important environmental topics. It also focuses on broader issues, notably economic, legal and political considerations. Authors are drawn from industry, the public service and academic organisations. The books are invaluable for scientists and engineers in industry and public service, consultancy and academic institutions. They are also essential reading for students taking specialised courses in environmental chemistry, and provide supplementary reference material for general science courses.

Electronic Waste Management

2nd Edition

G H Eduljee | **R M Harrison** University of Birmingham, UK

This new edition of *Electronic Waste Management* provides an updated overview of waste management across the world as well as presenting new chapters on current issues in recycling and waste management. It is an essential reference not only for those working in recycling and waste management but also for those working in manufacturing and product development who wish to consider the full lifecycle of their product. It also provides valuable insights for policymakers developing more environmentally sound and sustainable systems and strategies for the management of electronic waste.

Hardback | 337 pages | 9781788017442 | 2020 | £70.00 | \$95.00



Environmental Pollutant Exposures and Public Health

R M Harrison University of Birmingham, UK

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.

Hardback | 250 pages | 9781788018951 | 2020 | £70.00 | \$95.00



Life Cycle Assessment



A Metric for The Circular Economy

Aiduan Borrion University College London, UK | **Mairi Black** University of Surrey, UK |

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Life Cycle Assessment (LCA) is an established methodology used to quantify the environmental impacts of products, processes and services. Circular Economy (CE) thinking is conceptual way of thinking of the impacts of consumption. Providing a robust systematic approach to the circular economy concept, using the established methodology of LCA, this book will be a practical guide for those who wish to use LCA as a research tool or to inform policy, process, and product improvement.

Hardback | 320 pages | 9781788014458 | 2020 | £70.00 | \$95.00

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