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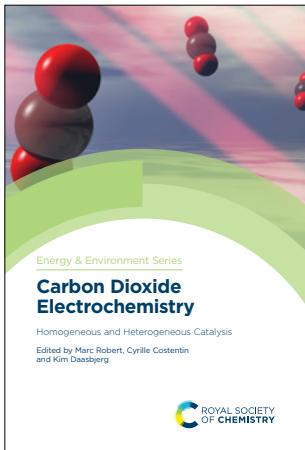
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Mai Bui Imperial College London, UK | **Niall Mac Dowell** Imperial College London, UK

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

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Keith Scott Newcastle University, UK

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Heterogeneous Catalysis for Energy Applications



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

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Thermal Energy Storage

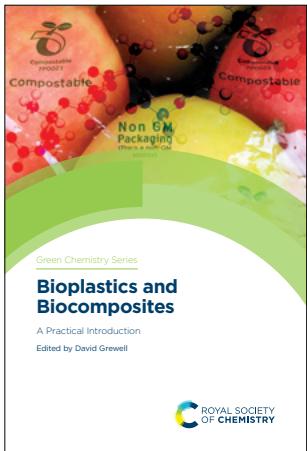
Materials, Devices, Systems and Applications

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.

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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.

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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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David Grewell Iowa State University, USA

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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.

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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.

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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.

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Transportation Biofuels

Pathways for Production, 2nd Edition

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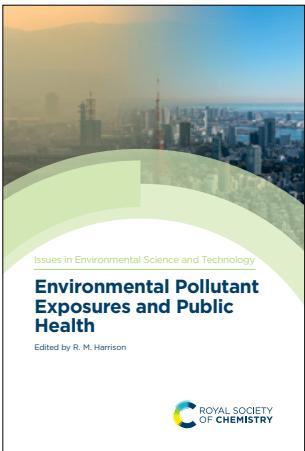
Ten years on from the publication of the first edition of this book and fossil fuels still dominate the transport industry. However, there have been a number of advances in the production of biofuels for transportation use. This new edition provides updates on the previously discussed pathways for biofuels, 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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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



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A Metric for The Circular Economy

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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.

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