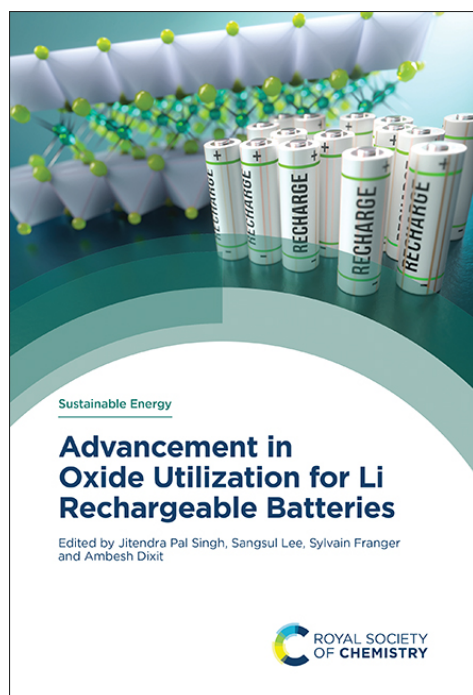


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**BIC:** THRB, TT, PHK, PNRH  
**THEMA:** THY, TGMM, PHK, PNRH  
**BISAC:** SCI024000, TEC031010, TEC021020, SCI013100  
**Series:** Sustainable Energy Volume 3

## Advancement in Oxide Utilization for Li Rechargeable Batteries

**Jitendra Pal Singh** Manav Rachna University, India

**Sangsul Lee** Pohang University of Science and Technology, South Korea

**Sylvain Franger** Universite Paris-Saclay, France

**Ambesh Dixit** Indian Institute of Technology, India

### Synopsis

Oxide materials have been shown to be effective cathode materials since the 1980s. However, due to their unusual properties, their use in anodes and as solid-state electrolytes has recently gathered global scientific interest and is showing potential for both Li and Na batteries in different applications. The title aims to give readers a conceptual understanding of oxide materials and their utilization in energy fields for future development.

### Brief Contents

- An Overview of Li Rechargeable Batteries
- Physics and Chemistry of Li-ion Rechargeable Batteries
- Lithium-based All-solid-state Thin-film Micro-batteries
- Iron Oxide: A Green and Low-cost Anode Material for Next Generation Li-ion Batteries
- Manganese Oxide as an Anode for Li Rechargeable Battery
- Design and Fabrication of SiO<sub>2</sub>-based Anodes for High Energy Density Li Rechargeable Batteries
- SnO<sub>2</sub> and its Composites as Anode Materials for Li Rechargeable Batteries
- LiMnO<sub>2</sub> as Cathode Material
- Exploring LiMO<sub>2</sub> (M=Ni, Co) as a High Performance Cathode Materials for Li-ion Batteries
- Uncovering the Limits of Lithium Cobalt Oxide: Challenges and Innovations for High-Voltage Lithium-Ion Batteries
- A New Lithium-based Oxide, Li<sub>3</sub>MRuO<sub>5</sub> (M=Ni, Fe) as Cathode Material for Li Rechargeable Batteries: Magnetic and Electrical Aspects
- Nickel Manganese Cobalt Oxides (NCM) Cathode Materials
- LiFePO<sub>4</sub> as Cathode Material
- Challenges with Garnet Structured Lithium Lanthanum Zirconate as Solid-state Electrolyte for Lithium Rechargeable Thin Film Batteries

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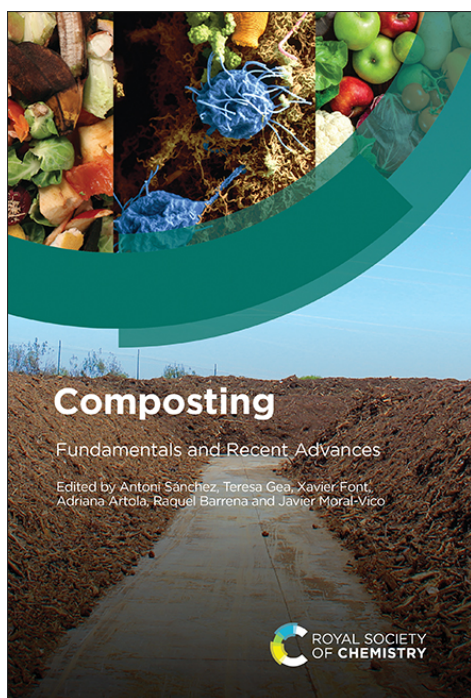
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# Advance Book Information



## Composting

### Fundamentals and Recent Advances

**Antoni Sánchez** Universitat Autònoma de Barcelona, Spain

**Teresa Gea** Universitat Autònoma de Barcelona, Spain

**Xavier Font** Universitat Autònoma de Barcelona, Spain

**Adriana Artola** Universitat Autònoma de Barcelona, Spain

**Raquel Barrena** Universitat Autònoma de Barcelona, Spain

**Javier Moral-Vico** Universitat Autònoma de Barcelona, Spain

### Synopsis

Composting offers a circular and low-impact route to managing and treating organic solid waste and produces a nutrient rich medium for horticultural and agricultural uses. This book provides a solid introduction to the main fundamentals of composting, including bioreactor engineering, energy and mass transfer issues and microbiology, then progresses to more complex topics such as compost stability, gaseous emissions, and compost uses. The sustainability of composting is also discussed along with the role of composting in biorefineries and how composting can complement other technologies such as anaerobic digestion and solid-state fermentation.

### Brief Contents

- Introduction
- Composting and Its Benefits
- Microbiology of Composting: From Petri Dishes to the Current Knowledge
- Mass and Energy Balances
- Respirometry of Organic Solid Wastes: Methods and Relevance to Understand the Composting Process and End-product Stability
- Composting Modelling: State of the Art
- Composting Systems
- Home and Community Composters: Decentralised Systems
- Invertebrate Facilitated Composting
- Quality and Characterization: Understanding the Meaning of Compost Quality
- Uses of Compost
- Gaseous Emissions, Best Practices and Treatment: Biofiltration and Complementary Systems
- LCA for Composting and Its Comparison with Other Organic Waste Treatment Options
- Models of Separate Collection for High Quality Composting
- The Role of Composting in the Sustainable Development Goals
- The Future of Composting

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**THEMA:** RNH, RNU, PNC

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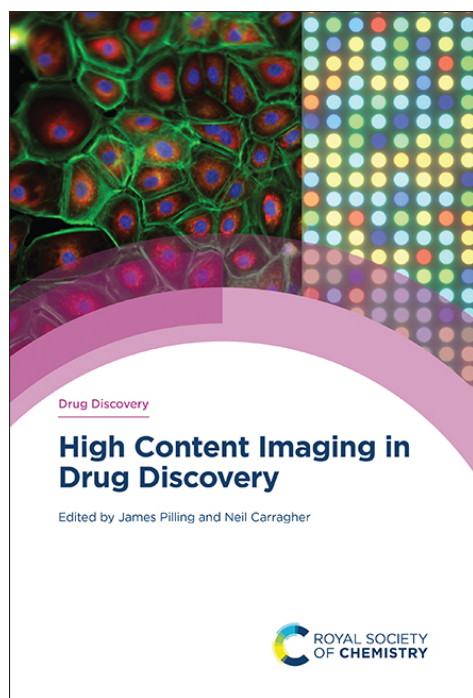
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# Advance Book Information



## High Content Imaging in Drug Discovery

**James Pilling** AstraZeneca, UK

**Neil Carragher** University of Edinburgh, UK

### Synopsis

The breadth of available technology and the biology to which high content imaging is applied is vast, and recent advances in the ability to generate and interpret huge datasets are a paradigm shift in how this technology can be used on a large scale in early drug discovery. This comprehensive resource covers state-of-the-art technologies, essential supporting infrastructure and data analysis approaches to support pre-clinical drug discovery. This book brings together the many advances, challenges, and their solutions into a single essential resource for scientists and leaders working in high content imaging and seeking to establish capability within their drug discovery processes.

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**Size:** 234 x 156 (Royal 8vo) mm  
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**THEMA:** MKG, TTBM, PSB, PDN  
**BISAC:** MED071000, SCI013040  
**Series:** Drug Discovery Volume 86

### Brief Contents

- Imaging Technology Platforms, State-of-the-art and Future Developments
- Assay Development and Automation in High Content Screening
- Beyond Images: Data Extraction, Analysis and Interpretation
- Morphological Profiling: Case Studies and Applications
- AI and Chemogenomics in High Content Screening
- Screen in Haste, Repent at Leisure: Some Advice for Running a High Content Screening Campaign
- High Content Screening to Identify Interventions Targeting Coronavirus Host Infection and Replication  
Lead Identification Using 3D Organoid Models of Pancreatic Cancer
- Imaging on a Macro Scale: Application of Complex and Translational Models
- Morphological Profiling: Advancing Towards 4D Phenotypic Profiling
- Deep-learning Enhanced Phenotypic Screening and-Cheminformatics for Antibiotic, Antimicrobial and Bioactives Discovery

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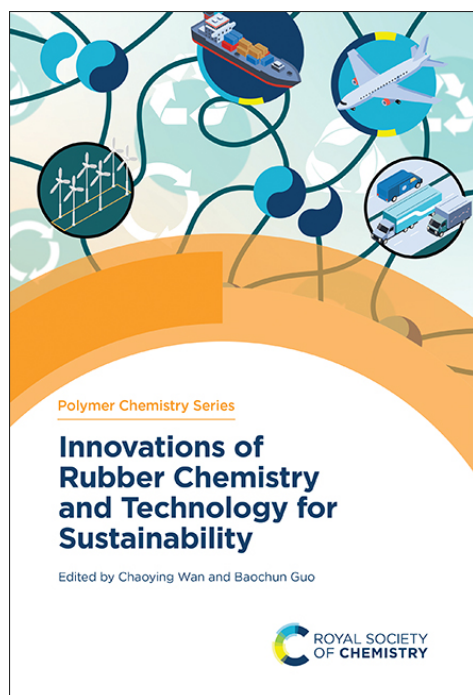
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# Advance Book Information



## Innovations of Rubber Chemistry and Technology for Sustainability

**Chaoying Wan** University of Warwick, UK

**Baochun Guo** South China University of Technology, China

### Synopsis

The rubber industry is energy-intensive, and a major contributor to polymer waste. However, energy-saving approaches and reversible reactions are emerging.

The book examines sustainable devulcanization techniques, followed by the dynamic chemistry of rubber curing and processing, and the trade-off between network dynamics and the properties of rubber. The use of fillers and how blends and multiple networks influence the sustainability of rubber. The book concludes with an examination of new developments and applications of rubber in the circular economy.

### Brief Contents

- Green Chemical Devulcanization Systems
- Dynamic Covalent Chemistry in Rubber Crosslinking
- Surface-functionalised Fillers as Dynamic Crosslinkers
- Dual-crosslinked Network Design
- Heterogeneous Network Design
- Bio-based Elastomers
- Biomass-derived Fillers
- Green Functional Ingredients
- Thermoplastic Vulcanizates (TPVs)
- Dielectric Elastomers for Energy Transduction
- Green Tyres
- Modification of Rubbers for Vibration Damping
- Modification of Nitrile Rubbers for High-performance Sealing Materials

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**BISAC:** TEC021000, SCI013060

**Series:** Polymer Chemistry Series  
Volume 40

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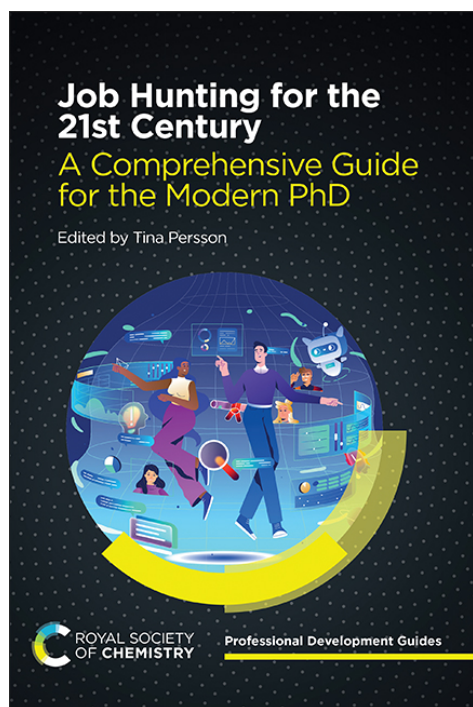
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## Job Hunting for the 21st Century A Comprehensive Guide for the Modern PhD

Tina Persson Passage2Pro, Sweden

### Synopsis

In the competitive landscape of job searching, PhDs and postdocs face unique challenges when seeking to transition beyond the academic context. The terminology, industry language and strategies for finding employment have undergone significant changes, especially with the advancement of digitalization, algorithms, and AI. Through a combination of storytelling, real-life examples, and practical tips and tricks, this guide equips readers with the modern skills needed to navigate the job market with confidence and purpose, and embark on their future career development journey.

### Brief Contents

- Introduction
- Mastering Emotional Intelligence in Your Job Search
- Learn to Articulate the Value and Skills You Bring to Non-academic Employers
- ChatGPT for Career Development
- Crafting a Modern Resume and Cover Letter Using ChatGPT
- Captivating Recruiters and Hiring Managers with Your LinkedIn Profile
- Unveiling the Hidden Job Market: Your Gateway to Hidden Opportunities
- Networking and Communication to Open Up Job Opportunities Outside of Academia
- Interview Mastery – Secure the Job: The Recruiter's Perspective on the Interview
- Common Interview Questions
- Important Interview Skills and Techniques You Need to be Hired
- Career Life Lessons: Insights for Long-term Success
- Storytelling as a Career Tool – From Academia to the World Stage
- Real Stories

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**Target Audience:** College/higher education, ,

**Audience:** Professional and scholarly

**Size:** 234 x 156 (Royal 8vo) mm

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**THEMA:** VSCB, JNR, PD

**BISAC:** EDU031000, BUS037020

**Series:** Professional Development  
Guides Volume 2

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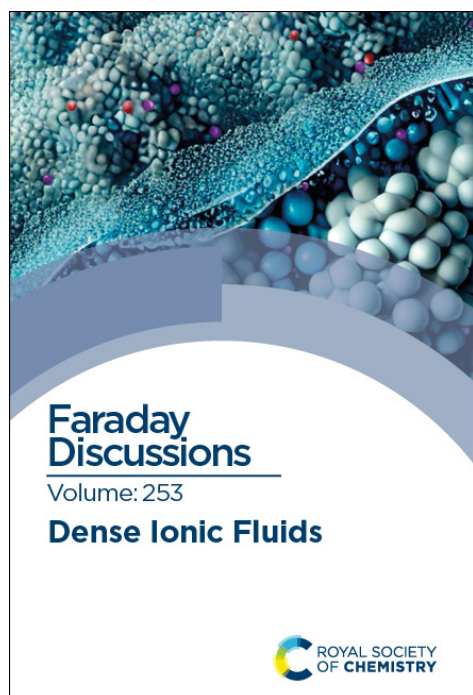
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## Dense Ionic Fluids

### Faraday Discussion 253

#### Synopsis

The application of dense ionic fluids requires a greater understanding of the complex nanostructure of ionic liquids that contain additional components such as neutral/polar solvents and oligomeric species. This volume details the cross-fertilisation of ideas and understanding between the distinct but adjacent communities working with different classes of dense ionic fluids and their different applications.

#### Brief Contents

- Structure and dynamics in dense ionic fluids
- Ionic fluids at equilibrium: thermodynamics, nanostructure, phase behaviour, activity
- Ionic fluids out of equilibrium: electrodeposition, dissolution, electron transfer, driving forces
- Interfaces and particles in dense ionic fluids: biological and colloidal systems spanning multiple length scales

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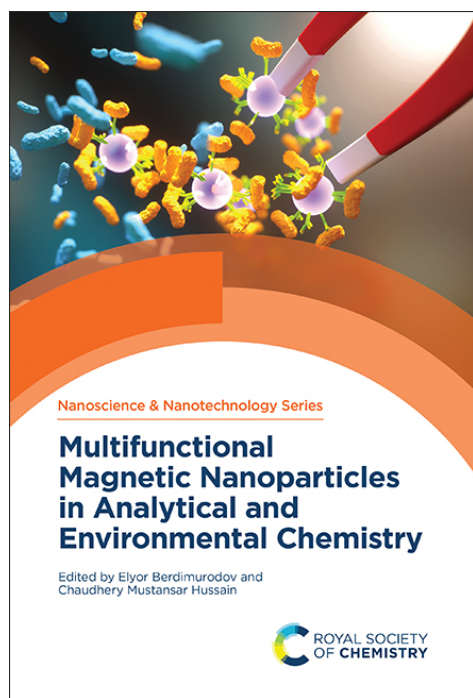
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## Multifunctional Magnetic Nanoparticles in Analytical and Environmental Chemistry

**Elyor Berdimurodov** National University of Uzbekistan, Uzbekistan  
**Chaudhery Mustansar Hussain** New Jersey Institute of Technology, USA

### Synopsis

This book provides a comprehensive guide to multifunctional magnetic nanoparticles, highlighting their revolutionary applications in therapy, biology and pharmacy. From synthesis to practical applications, it covers their unique properties, pharmaceutical applications and much more. Moreover, it also delves into cutting-edge research and potential future directions, such as environmental remediation, energy storage and conversion, and regulatory considerations.

### Brief Contents

- Effectiveness, Surface Treatments, and Modern Trends in the Preparation of Multifunctional Magnetic
- Tailoring the Surface in Multifunctional Magnetic Nanoparticles: Modification and Functionalization Strategies
- Nanoparticles Unveiled: Key Characteristics and Properties of Multifunctional Magnetic Nanoparticles
- Making Extraction More Efficient: Magnetic Solid Phase Extraction by Multifunctional Magnetic Nanoparticles
- Ensuring Food Safety: Fundamentals and Applications in Food Analysis by Multifunctional Magnetic Nanoparticles
- Energetic Insights: Electrochemical Sensing by Multifunctional Magnetic Nanoparticles
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- Multifunctional Magnetic Nanoparticles in Optical Sensors for Analytical Environmental Samples
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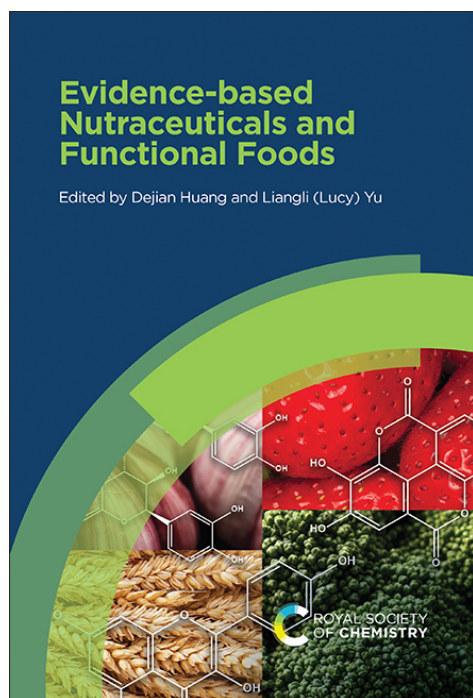
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## Evidence-based Nutraceuticals and Functional Foods

**Dejian Huang** National University of Singapore, Singapore  
**Liangli (Lucy) Yu** University of Maryland, USA

### Synopsis

Looking for a book to answer the why, what and how related to nutraceuticals and functional foods? This book provides teaching and learning materials on functional foods and nutraceuticals for health promotion and mitigation of risk factors of chronic diseases. Intended as a textbook, the authors are filling a gap in the literature for courses aimed at senior undergraduate and graduate students. Including selected case studies and well-designed problem sets for each chapter for self-learning and stimulating critical thinking, it can also serve as a reference for more experienced practitioners new to this area.

### Brief Contents

- Functional Foods for Health: Evidence and Insights
- An Overview of the Typical Uses and Mechanisms of Action of Bioactive Compounds in Food Dietary Antioxidants
- Food Bioactive Constituents with Anti-inflammation Activity
- Absorption, Distribution, Metabolism, and Excretion (ADME) of Food Bioactive Constituents
- Gut Microbiota and Their Roles in Nutraceuticals and Functional Foods
- Bioactive Fatty Acids
- Dietary Polyphenolics (Case Study: Flavan-3-ols and Resveratrol)
- Bioactive Organosulfides: Dietary Sources and Health Benefits
- Terpenoids (Case Study: Ginsenosides)
- Digestive Enzyme Inhibitors for weight management: Resin Glycoside/lipase Inhibitor, Flavones Oligomers/alpha-amylase Inhibitor
- Non-digestible Polysaccharides
- Bioactive Peptides
- Advanced Research Methodology for Nutraceuticals (High Throughput Screening Assays for Discovering Bioactive Constituents in Functional Foods and Artificial Intelligence)
- Delivery Systems to Enhance Bioaccessibility and Bioavailability of Bioactive Factors
- General Considerations in Rationale Design of Functional Foods

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**THEMA:** TDCT, PND, MBNH3, 4TC

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