Journal Of Solid State Chemistry

This book focuses on the role of modeling in the design of alloys and intermetallic compounds. It includes an introduction to the most important and most used modeling techniques, such as CALPHAD and ab-initio methods, as well as a section devoted to the latest developments in applications of alloys. The book emphasizes the correlation between modeling and technological developments while discussing topics such as wettability of Ultra High Temperature Ceramics by metals, active brazing of diamonds to metals in cutting tools, surface issues in medicine, novel Fe-based superconductors, metallic glasses, high entropy alloys, and thermoelectric materials.

This book on solid state chemistry presents studies of chemical, structural, thermodynamic, electronic, magnetic, and optical properties and processes in solids. Research areas include: bonding in solids, crystal chemistry, crystal growth mechanisms, diffusion epitaxy, high-pressure processes, magnetic properties of materials, optical characterisation of materials, order-disorder, phase equilibria and transformation mechanisms, reactions at surfaces, statistical

mechanics of defect interactions, structural studies and transport phenomena.
Issues in Industrial, Applied, and Environmental Chemistry: 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about General Chemistry. The editors have built Issues in Industrial, Applied, and Environmental Chemistry: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about General Chemistry in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Industrial, Applied, and Environmental Chemistry: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.
Functional oxides have a wide variety of applications in the electronic industry. The

discovery of new metal oxides with interesting and useful properties continues to drive much research in chemistry, physics, and materials science. In Functional Oxides five topical areas have been selected to illustrate the importance of metal oxides in modern materials chemistry: Noncentrosymmetric Inorganic Oxide Materials Geometrically Frustrated Magnetic Materials Lithium Ion Conduction in Oxides Thermoelectric Oxides Transition Metal Oxides - Magnetoresistance and Half-Metallicity The contents highlight structural chemistry, magnetic and electronic properties, ionic conduction and other emerging areas of importance, such as thermoelectricity and spintronics. Functional Oxides covers these complex concepts in a clear and accessible manner providing an excellent introduction to this broad subject area.

Chemistry of Materials and Energy. Examples and Future of a Millennial Science

Materials, Modeling, and Applications

Topical Issue

Current Research in Solid-state Chemistry

Computational Pharmaceutical Solid State Chemistry

Microwave Materials and Applications

The recent rapid progress in wireless

telecommunication, including the Internet of Things, 5th generation wireless systems, satellite broadcasting, and intelligent transport systems has increased the need for low-loss dielectric materials and modern fabrication techniques. These materials have excellent electrical, dielectric, and thermal properties and have enormous potential, especially in wireless communication, flexible electronics, and printed electronics. Microwave Materials and Applications discusses the methods commonly employed for measuring microwave dielectric properties, the various attempts reported to solve problems of materials chemistry and crystal structure, doping, substitution, and composite formation, highlighting the processing techniques, morphology influences, and applications of microwave materials whilst summarizing many of the recent technical research accomplishments in the area of microwave dielectrics and applications Chapters examine: Oxide ceramics for dielectric resonators and substrates HTCC, LTCC and ULTCC tapes for substrates Polymer ceramic composites for printed circuit boards Elastomer-ceramic composites for flexible electronics Dielectric inks EMI shielding materials Microwave ferrites A comprehensive Appendix presents

the fundamental properties for more than 4000 low-loss dielectric ceramics, their composition, crystal structure, and their microwave dielectric properties. Microwave Materials and Applications presents a comprehensive view of all aspects of microwave materials and applications, making it useful for scientists, industrialists, engineers, and students working on current and emerging applications of wireless communications and consumer electronics.

"A comprehensive guide to solid-state chemistry which is ideal for all undergraduate levels. It covers well the fundamentals of the area, from basic structures to methods of analysis, but also introduces modern topics such as sustainability." Dr. Jennifer Readman, University of Central Lancashire, UK "The latest edition of Solid State Chemistry combines clear explanations with a broad range of topics to provide students with a firm grounding in the major theoretical and practical aspects of the chemistry of solids." Professor Robert Palgrave, University College London, UK Building a foundation with a thorough description of crystalline structures, this fifth edition of Solid State Chemistry: An Introduction presents a wide range of the synthetic and physical

techniques used to prepare and characterise solids. Going beyond this, this largely nonmathematical introduction to solid-state chemistry includes the bonding and electronic, magnetic, electrical, and optical properties of solids. Solids of particular interest—porous solids, superconductors, and nanostructures—are included. Practical examples of applications and modern developments are given. It offers students the opportunity to apply their knowledge in real-life situations and will serve them well throughout their degree course. New in the Fifth Edition A new chapter on sustainability in solid-state chemistry written by an expert in this field Cryo-electron microscopy X-ray photoelectron spectroscopy (ESCA) Covalent organic frameworks Graphene oxide and bilayer graphene Elaine A. Moore studied chemistry as an undergraduate at Oxford University and then stayed on to complete a DPhil in theoretical chemistry with Peter Atkins. After a two-year postdoctoral position at the University of Southampton, she joined the Open University in 1975, becoming a lecturer in chemistry in 1977, senior lecturer in 1998, and reader in 2004. She retired in 2017 and currently has an honorary position at the Open University. She has produced OU teaching texts in

chemistry for courses at levels 1, 2, and 3 and written texts in astronomy at level 2 and physics at level 3. She was team leader for the production and presentation of an Open University level 2 chemistry module delivered entirely online. She is a Fellow of the Royal Society of Chemistry and a Senior Fellow of the Higher Education Academy. She was co-chair for the successful Departmental submission of an Athena Swan bronze award. Lesley E. Smart studied chemistry at Southampton University, United Kingdom. After completing a PhD in Raman spectroscopy, she moved to a lectureship at the (then) Royal University of Malta. After returning to the United Kingdom, she took an SRC Fellowship to Bristol University to work on X-ray crystallography. From 1977 to 2009, she worked at the Open University chemistry department as a lecturer, senior lecturer, and Molecular Science Programme director, and she held an honorary senior lectureship there until her death in 2016. At the Open University, she was involved in the production of undergraduate courses in inorganic and physical chemistry and health sciences. She served on the Council of the Royal Society of Chemistry and as the chair of their Benevolent Fund.

Solid State Chemistry today is a frontier

area of mainstream chemistry, and plays a vital role in the development of materials. The present work, consisting of a selection of Prof. C N R Rao's papers, covers most of the important aspects of solid state chemistry and provides the flavor of the subject, showing how the subject has evolved over the years. The book is up-to-date, and will be useful to students, teachers, beginning researchers and practitioners in solid state chemistry as well as in the broader area of materials science. Solid-state lasers which offer multiple desirable qualities, including enhanced reliability, robustness, efficiency and wavelength diversity, are absolutely indispensable for many applications. The Handbook of solid-state lasers reviews the key materials, processes and applications of solid-state lasers across a wide range of fields. Part one begins by reviewing solid-state laser materials. Fluoride laser crystals, oxide laser ceramics, crystals and fluoride laser ceramics doped by rare earth and transition metal ions are discussed alongside neodymium, erbium and ytterbium laser glasses, and nonlinear crystals for solid-state lasers. Part two then goes on to explore solid-state laser systems and their applications, beginning with a discussion of the principles, powering and

operation regimes for solid-state lasers. The use of neodymium-doped materials is considered, followed by system sizing issues with diode-pumped quasi-three level materials, erbium glass lasers, and microchip, fiber, Raman and cryogenic lasers. Laser mid-infrared systems, laser induced breakdown spectroscope and the clinical applications of surgical solid-state lasers are also explored. The use of solid-state lasers in defense programs is then reviewed, before the book concludes by presenting some environmental applications of solid-state lasers. With its distinguished editors and international team of expert contributors, the Handbook of solid-state lasers is an authoritative guide for all those involved in the design and application of this technology, including laser and materials scientists and engineers, medical and military professionals, environmental researchers, and academics working in this field. Reviews the materials used in solid-state lasers Explores the principles of solid-state laser systems and their applications Considers defence and environmental applications

From Modeling to Engineering

Modern Inorganic Synthetic Chemistry

Issues in Industrial, Applied, and Environmental Chemistry: 2012 Edition

Solid State Chemistry of High-Tc Superconductors
Solid State Materials Chemistry
Materials, Systems and Applications

In this book, the authors present topical research in the study of coordination polymers and metal organic frameworks. Topics discussed include hybrid vanadates and metal organic frameworks; structure and magnetic properties of mono- and poly-nuclear complexes containing Re(IV)l; metal organic framework applications in the fields of hydrogen storage and catalysis; MOF-Based mixed-matrix-membranes for industrial applications; coordination polymers in heterogeneous catalysis; high pressure gas storage on porous solids; metal organic frameworks for CO2 capture and halogen bonding in the assembly of high-dimensional supramolecular coordination polymers.

*Defects play an important role in determining the properties of solids. This book provides an introduction to chemical bond, phonons, and thermodynamics; treatment of point defect formation and reaction, equilibria, mechanisms, and kinetics; kinetics chapters on solid state processes; and electrochemical techniques and applications. * Offers a coherent description of fundamental defect chemistry and the most common applications. * Up-to-date trends and developments within this field. * Combines electrochemical concepts with aspects of semiconductor physics.*

Since Antiquity, humans have used processes to transform the materials of their environment to suit their needs. Solid-state chemistry, initially a series of

recipes, became a real science of matter and its transformations following nineteenth-century scientific discoveries. It is now used to develop efficient and eco-compatible materials to transport or store energy. Solid-state chemistry thus plays a crucial role in finding the answers that science will have to bring to humanity's new concerns, particularly surrounding environmental issues.
Recent trends within the pharmaceutical industry through the Quality by Design initiatives have seen a greater emphasis on the development of a molecular-scale understanding in the development of efficient manufacturing processes for active pharmaceutical ingredients (APIs) and their formulation into drug products. This book examines the state-of-the-art computational approaches to guide solid form experiments to optimize the physical and chemical properties of API related to its stability, bioavailability and formulatability. The book is intended to be used as a professional reference to researchers in Pharmaceutical industry and in academia and potentially as a text book reference for undergraduate, graduate and postgraduate students in the field of Computational Chemistry, Solid State Chemistry, Pharmaceutical Science and Material Science.
Solid-State Chemistry of Inorganic Materials III: Volume 658
Indoor Photovoltaics
Solid Materials
Alloys and Intermetallic Compounds
Symposium on Metal-Metal Bonding in Solid State Clusters and Extended Arrays
Inaugural Lecture delivered on Thursday 23 January

2014

The book has four main parts. In the first part the discussion centers on inorganic synthesis reactions, dealing with inorganic synthesis and preparative chemistry under specific conditions: high temperature, low temperature and cryogenic, hydrothermal and solvothermal, high pressure and super-high pressure, photochemical, microwave irradiation and plasma conditions. The second part systematically describes the synthesis, preparation and assembly of six important categories of compounds with wide coverage of distinct synthetic chemistry systems: coordination compounds, coordination polymers, clusters, organometallic compounds, non-stoichiometric compounds and inorganic polymers. In the third part seven important representative inorganic materials are selected for discussion of their preparation and assembly, including porous, advanced ceramic, amorphous- and nano-materials, inorganic membranes, synthetic crystals and advanced functional materials. The last part of the book, which is also

its distinct feature, addresses the frontiers of inorganic synthesis and preparative chemistry. These final two chapters introduce the two emerging synthetic areas. Included are approximately 3000 references, a large proportion of which are from the recent decade. Focuses on the "chemistry" of inorganic synthesis, preparation and assembly of various compounds and describes all inorganic synthesis methods New state of the art inorganic synthesis chemistry areas Inclusion of a number of real examples for the preparation and assembly of important classes of materials More than 3,000 reference to the primary literature Comprehensive state of the art reviews written by the experts in the area Research and development of solid state gas sensor devices began in the 1950s with several uncoordinated independent efforts. The number and pace of these investigations later accelerated in response to increasing pressure placed on the environment and public health by industrial activities. Since 1970, several thousand articles have been written on the subject, and

laboratories around the globe have introduced novel methodologies and devices to address needs associated with particular technological developments. Despite the rapid development of this important new technology, very little has been done to review and coordinate data related to sensor science and technology itself. Physics, Chemistry and Technology of Solid State Gas Sensor Devices focuses on the underlying principles of solid state sensor operation and reveals the rich fabric of interdisciplinary science that governs modern sensing devices. Beginning with some historical and scientific background, the text proceeds to a study of the interactions of gases with surfaces. Subsequent chapters present detailed information on the fabrication, performance, and application of a variety of sensors. Types of sensor devices discussed include: Gas-sensitive solid state semiconductor sensors Photonic and photoacoustic gas sensors Fiber optic sensors Piezoelectric quartz crystal microbalance sensors Surface acoustic

wave sensors Pyroelectric and thermal sensors For analytical chemists using solid state sensors in environment-related analysis, and for electrical engineers working with solid state sensors, this book will expand and unify their understanding of these devices, both in theory and practice. Fundamental societal changes resulted from the necessity of people to get organized in mining, transporting, processing, and circulating the heavy metals and their follow-up products, which in consequence resulted in a differentiation of society into diversified professions and even societal strata. Heavy metals are highly demanded technological materials, which drive welfare and progress of the human society, and often play essential metabolic roles. However, their eminent toxicity challenges the field of chemistry, physics, engineering, cleaner production, electronics, metabolomics, botany, biotechnology, and microbiology in an interdisciplinary and cross-sectorial manner. Today, all these scientific disciplines are called to

dedicate their efforts in a synergistic way to avoid exposure of heavy metals into the eco- and biosphere, to reliably monitor and quantify heavy metal contamination, and to foster the development of novel strategies to remediate damage caused by heavy metals.

The first broad account offering a non-mathematical, unified treatment of solid state chemistry. Describes synthetic methods, X-ray diffraction, principles of inorganic crystal structures, crystal chemistry and bonding in solids; phase diagrams of 1, 2 and 3 component systems; the electrical, magnetic, and optical properties of solids; three groups of industrially important inorganic solids--glass, cement, and refractories; and certain aspects of organic solid state chemistry, including the ``organic metal'' of new materials.

Coordination Polymers and Metal Organic Frameworks

Novel Forms of Carbon: Volume 270

Solid State Electrochemistry

Properties, Types, and Applications
Computational Chemistry of Solid State Materials

The MRS Symposium Proceeding series is an internationally recognised reference suitable for researchers and practitioners.

Energy storage material is a hot topic in material science and chemistry. During the past decade, nuclear magnetic resonance (NMR) has emerged as a powerful tool to aid understanding of the working and failing mechanisms of energy storage materials and devices. The aim of this book is to introduce the use of NMR methods for investigating electrochemical storage materials and devices. Presenting a comprehensive overview of NMR spectroscopy and magnetic resonance imaging (MRI) on energy storage materials, the book will include the theory of paramagnetic interactions and relevant calculation methods, a number of specific NMR approaches developed in the past decade for battery materials (e.g. in situ, ex situ NMR, MRI, DNP, 2D NMR, NMR dynamics) and case studies on a variety of related materials. Helping both NMR spectroscopists entering the field of batteries and battery specialists seeking diagnostic methods for material and device degradation, it is written by leading authorities from international research groups in this field.

The Frontiers in Chemistry Editorial Office team are delighted to present the inaugural “Frontiers in Chemistry: Rising Stars” article collection, showcasing the high-quality work of internationally recognized researchers in the early stages of their independent

careers. All Rising Star researchers featured within this collection were individually nominated by the Journal's Chief Editors in recognition of their potential to influence the future directions in their respective fields. The work presented here highlights the diversity of research performed across the entire breadth of the chemical sciences, and presents advances in theory, experiment and methodology with applications to compelling problems. This Editorial features the corresponding author(s) of each paper published within this important collection, ordered by section alphabetically, highlighting them as the great researchers of the future. The Frontiers in Chemistry Editorial Office team would like to thank each researcher who contributed their work to this collection. We would also like to personally thank our Chief Editors for their exemplary leadership of this article collection; their strong support and passion for this important, community-driven collection has ensured its success and global impact. Laurent Mathey, PhD Journal Development Manager

The chemistry and physics of group 14 elements such as silicon and germanium have been extensively studied, largely due to their fundamental importance in the development of semiconductor electronics. In addition, crystalline open-framework and nano-porous materials are attracting increasing attention for their potential technological applications. Inorganic open-framework materials comprised of group 14 elements crystallizing in crystal structures known as clathrates are of particular interest. These materials correspond to expanded forms, and in some cases metastable allotropes, of silicon,

germanium and tin. The novel crystal structures these materials possess are intimately related to the unique physical properties they exhibit. Just as interesting as the structure and properties group 14 clathrates display is the diverse range of synthetic techniques developed to synthesize and grow single crystals of these materials. This volume will encompass many of these aspects and describe their potential for important technological applications.

Organic Solid-State Reactions

Physics, Chemistry and Technology of Solid State Gas Sensor Devices

Progress in solid state chemistry

Frontiers in Chemistry: Rising Stars

Fundamentals, Materials and their Applications

Solid State Chemistry and Its Applications

A modern and thorough treatment of the field for upper-level undergraduate and graduate courses in materials science and chemistry.

This is the first and most comprehensive guide on the modeling, engineering and reliable design of indoor photovoltaics which currently is the most promising and energy efficient power supply for edge nodes for the Internet of Things and other indoor devices. Indoor photovoltaics (IPV) has grown in importance over recent years. This can in part be attributed to the creation of the Internet of Things (IoT) and Artificial Intelligence (AI) along with the vast amounts of data being processed in the field, which has been a massive accelerator for this development. Moreover, since energy conservation is being imposed as the national strategy of many countries and is

being set as a top priority throughout the world, understanding and promoting IPV as the most promising indoor energy harvesting source is considered by many to be essential these days. The book provides the engineer and researcher with guidelines, and presents a comprehensive overview of theoretical models, efficiencies, and application design. This unique and groundbreaking book has chapters by leading researchers on: Introduction to micro energy harvesting Introduction to indoor photovoltaics Modeling indoor irradiance Characterization and power measurement of IPV cells Luminescent solar concentrators Organic photovoltaic cells and modules for applications under indoor lighting conditions High-efficiency indoor photovoltaic energy harvesting Indoor photovoltaics based on ALGAAs alloys

Issues in Industrial, Applied, and Environmental Chemistry: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Industrial, Applied, and Environmental Chemistry. The editors have built Issues in Industrial, Applied, and Environmental Chemistry: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Industrial, Applied, and Environmental Chemistry in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Industrial, Applied, and Environmental Chemistry: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by

the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Principles of Solid State Physics presents a unified treatment of the basic models used to describe the solid state phenomena. This book is divided into three parts. Part I considers mechanical or geometrical properties that are describable by a lattice of mass points. What happens if the electric charge and magnetic moment are to be associated with the lattice points is explained in Part II. Part III discusses the application of the band theory and imperfections in solids. This publication is recommended for a one-semester senior course in solid state physics for students majoring in physics, chemistry, and electrical engineering.

Materials and Characterization

Basic Solid State Chemistry

Handbook of Solid-State Lasers

Solid State Electrochemistry I

Progress in Solid State Chemistry

Heavy Metals

Low-dimensional magnetism physics involves the search for new magnetic compounds and improving their characteristics to meet the needs of innovative technologies. A comprehensive overview of key materials, their formulation data and characteristics are detailed by the author. Key selling features: Explores dominant mechanisms of magnetic interaction to determine the parameters of exchange interactions in

new magnetic materials. Describes how magnetism and superconductivity not only compete, but also "help" each other. Details characteristics of key materials in the magnetic subsystem. Results of several internationally renowned research groups are included and cited. Suitable for a wide range of readers in physics, materials science, and chemistry interested in the problems of the structure of matter.

Solid-state chemistry is an interdisciplinary field, and these researchers share the common challenge of understanding, controlling, and predicting the structures and properties of solids at the atomic level. This book provides a forum for the presentation of recent advances in the solid-state chemistry of inorganic materials and the impact of these advances on the development of practical applications. Topics include: crystal chemistry of complex systems; dielectrics, crystal chemistry, glasses and electrical transport; transport properties/metal-insulator systems; magnetism and manganates; new materials - meso/nanoporous materials; micro/meso/ nanoporous materials - inorganic/organic hybrids; synthesis, new methods and new materials; solid-state ionics, battery materials, thermopower and optical materials; solid-state ionics, battery materials and energy storage; and thermopower, themal expansion and optical materials. A highlight is a section dedicated to Professor J.M. Honig in recognition of his many contributions to the discipline of solid-state chemistry and his stewardship of the Journal of Solid-

State Chemistry.

Most organic reactions have long been carried out in organic solvents without concern for their real necessity, reaction efficiency, and pollution problems. Very recently, we have found that most organic reactions can be carried out in the absence of a solvent, namely, in the solid state. In many cases, the solid-state reaction proceeds more easily and efficiently, and even more selectively than solution reaction. This shows that molecules move easily and selectively in the solid state. This finding changed the classical idea which suggests "molecules do not move and reactions do not occur in the solid state", and opened up a new research field for the study molecular dynamics in the solid state. The organic solid state reactions have many possibilities to be developed. For example, enantioselective reactions can easily be accomplished by carrying out the reaction in an inclusion complex crystal with an optically active host compound. Catalytic reactions also proceed in the solid state. Moreover, the solid-state reactions are more economical and ecologically sound. In the future, pollution-free synthetic procedures in the solid state will become increasingly important, not only in chemical industries but also in university laboratories.

First time paperback of successful chemistry monograph.

Low-Dimensional Magnetism

Selected Papers of C.N.R. Rao

Principles of Solid State Physics

Synthesis Methods and Crystallization
Physical Chemistry of Ionic Materials
Symposium on Synthesis in Solid State Chemistry

Symposium on Synthesis in Solid State ChemistryFrontier Structures and Novel ResultsSolid State Materials ChemistryCambridge University Press

New crystalline materials (organic, inorganic, hybrid) are promising for various applications, including electrical, piezoelectric, ferroelectric, magnetic, and catalytic processes. In addition, given their remarkable structural richness, these materials exhibit several interesting physical properties, such as ionic conduction, ion exchange, and others. Crystal growth, morphology, and grain size are factors influencing these physical properties. This book examines methods of synthesis of the most common crystalline materials and describes nucleation and crystal growth of various materials.

This is the first book to present both classical and quantum-chemical approaches to computational methods, incorporating the many new developments in this field from the last few years.

Written especially for "non"-theoretical readers in a readily comprehensible and implemental style, it includes numerous practical examples of varying degrees of difficulty. Similarly, the use of mathematical equations is reduced to a minimum, focusing only on those important for experimentalists. Backed by many extensive tables containing detailed data for direct use in the calculations, this is the ideal companion for all those wishing to improve their work in solid state research.

Presents information on "Progress in Solid State Chemistry," an international review journal published by Elsevier Science. The journal provides critical reviews and surveys of research projects. Includes ordering information and a site search engine. Notes that the intended audience is materials chemists, materials scientists, physicists, metallurgist, crystallographers, ceramists, and engineers. Links to information on related Elsevier Science journals.

NMR and MRI of Electrochemical Energy

Storage Materials and Devices
Focus on Solid State Chemistry
an internat. review journal
Ions and Electrons in Solids
Frontier Structures and Novel Results
Functional Oxides

The only comprehensive handbook on this important and rapidly developing topic combines fundamental information with a brief overview of recent advances in solid state electrochemistry, primarily targeting specialists working in this scientific field. Particular attention is focused on the most important developments performed during the last decade, methodological and theoretical aspects of solid state electrochemistry, as well as practical applications. The highly experienced editor has included chapters with critical reviews of theoretical approaches, experimental methods and modeling techniques, providing definitions and explaining relevant terminology as necessary. Several other chapters cover all the key groups of the ion-conducting solids important for practice, namely cationic, protonic, oxygen-anionic and mixed conductors, but also conducting polymer and hybrid materials. Finally, the whole is rounded off by brief surveys of advances in the fields of fuel cells, solid-state batteries, electrochemical sensors, and other applications of ion-conducting solids. Due to the very interdisciplinary nature of this topic, this is of great interest to material scientists, polymer chemists, physicists, and industrial scientists, too.

The Physics and Chemistry of Inorganic Clathrates
Solid State Chemistry
A Guide for Materials Scientists, Chemists, Physicists and others
Issues in Industrial, Applied, and Environmental Chemistry: 2011 Edition
An Introduction