The Chemistry Of Nanostructured Materials

The development of nanostructured materials represents a new and fast evolving application of recent research in physics and chemistry. Novel experimental tools coupled with new theory have made this possible. Topics covered in this book include nanocrystals, semiconductor heterostructures, nanotubes, nanowires, and manipulation and fabrication techniques. The core of the book consists of ten lectures by five distinguished researchers, Paul Alivisatos, D.D. Awschalom, Sumio Iijima, Charles Lieber and Phaedon Avouris, presented at an Advanced Study Institute in Hong Kong in January 1999. It should interest materials physicists and chemists as well as materials scientists with an interest in the growth and characterisation of sophisticated materials.
This book discusses the early stages of the development of nanostructures, including synthesis techniques, growth mechanisms, the physics and chemistry of nanostructured materials, various innovative characterization techniques, the need for functionalization and different functionalization methods as well as the various properties of nanostructured materials. It focuses on the applications of nanostructured materials, such as mechanical applications, nanoelectronics and microelectronic devices, nano-optics, nanophotonics and nano-optoelectronics, as well as piezoelectric, agriculture, biomedical and, environmental remediation applications, and anti-microbial and antibacterial properties. Further, it includes a chapter on nanomaterial research developments, highlighting work on the life-cycle analysis of nanostructured materials and toxicity aspects.
A comprehensive reference on nanoscale materials chemistry—now revised and updated. This extensive text provides twenty-two revised chapters on the preparations, applications, and characterization as well as the environmental and toxicological aspects of nanoscale materials, with an emphasis on the chemistry component. This Second Edition contains core topics including: New synthetic methods for nanomaterials Nanostructured solids Organized two- and three-dimensional nanocrystals Nanotubes, ribbons, and sheets Nanocatalysts, sorbents, and energy applications Unique physical properties of nanomaterials Photochemistry of nanomaterials Biological and environmental aspects of nanomaterials With input from top experts in the field, such as Bruce Dunn, Vicki Grassian, Warren Ford, and Chris Sorensen, among others, Nanoscale Materials in Chemistry presents a balanced survey of different topics in basic nanoparticle science, and includes helpful end-of-chapter questions and answers. Significantly expanded, the Second Edition remains a key text for understanding the fundamentals of nanoscale materials chemistry and a reliable resource for scientists and researchers.
Nanotechnology Provides comprehensive coverage of the dominant technology of the 21st century Written by a truly international list of contributors.
Concise Edition
Handbook of Nanophase and Nanostructured Materials: Materials systems and applications I
Nanostructured Materials in Electrochemistry
Nanomaterials Chemistry
The Chemistry of Nanomaterials

The use of nanomaterials in energy conversion and storage represents an opportunity to improve the performance, density and ease of transportation in renewable resources. This book looks at the most recent research on the topic, with particular focus on artificial photosynthesis and lithium-ion batteries as the most promising technologies to date. Research on the broad subject of energy conversion and storage calls for expertise from a wide range of backgrounds, from the most fundamental perspectives of the key catalytic processes at the molecular level to device scale engineering and optimization. Although the nature of the processes dictates that electrochemistry is a primary characterization tool, due attention is given to advanced techniques such as synchrotron studies in operando. These studies look at the gap between the performance of current technology and what is needed for the future, for example how to improve on the lithium-ion battery and to go beyond its capabilities. Suitable for students and practitioners in the chemical, electrochemical, and environmental sciences, Nanomaterials for Energy Conversion and Storage provides the information needed to find scalable, economically viable and safe solutions for sustainable energy. Contents: The Principle of Photoelectrochemical Water Splitting (Peiyan Ma and Dunwei Wang)Semiconducting Photocatalysis for Solar Hydrogen Conversion (Shaohua Shen and Jie Chen)Visible-Light-Driven Photocatalysis (Qingzhe Zhang, Yanlong Liu, Zhenhe Xu, Yue Zhao, Mohamed Chaker and Dongling Ma)Metal-Nitride Nanostructures: Emerging Catalysts for Artificial Photosynthesis (Md Golam Kibria, Bandar AlOtaibi and Zetian Mi)Surface Engineering of Semiconductors for Photoelectrochemical Water Splitting (Gongming Wang, Yi Yang and Yat Li)Photoanodic and Photocathodic Materials Applied for Free-Running Solar Water Splitting Devices (Miao Zhong, Hiroyuki Kaneko, Taro Yamada and Kazunari Domen)Electrocatalytic Processes in Energy Technologies (Yang Huang, Min Zeng, Qiufang Gong and Yanguang Li)Soft X-Ray Spectroscopy on Photocatalysis (Yi-Sheng Liu, Cheng-Hao Chuang and Jinghua Guo)Photoelectrochemical Tools for the Assessment of Energy Conversion Devices (Isaac Herraiz-Cardona and Sixto Gimenez)Fundamentals of Rechargable Batteries and Electrochemical Potentials of Electrode Materials (Chaofeng Liu and Guozhong Cao)Revitalized Interest in Vanadium Pentoxide as Cathode Material for Alkali-Ion Batteries (Yanwei Li, Jinhuan Yao, Robert C Massé, Evan Uchaker and Guozhong Cao)Tin-Based Compounds as Anode Materials for Lithium-Ion Storage (Ming Zhang and Guozhong Cao)Beyond Li-Ion: Electrode Materials for Sodium- and Magnesium-Ion Batteries (Robert Massé, Evan Uchaker and Guozhong Cao)Nanomaterials and Nanostructures for Regulating Ions and Electron Transport in Advanced Energy Storage Devices (Yu Wang and Wei-Hong Zhong) Readership: Students, researchers and practitioners in the chemical, electrochemical, and environmental sciences. Keywords: Nanomaterials;Lithium-Ion Batteries;Electrochemistry;Energy Conversion;Energy Storage;Artificial PhotosynthesisReview:0
These books, with of a total of 40 chapters, are a comprehensive and complete introductory text on the synthesis, characterization, and applications of nanomaterials. They are aimed at graduate students and researchers whose background is chemistry, physics, materials science, chemical engineering, electrical engineering, and biomedical science. The first part emphasizes the chemical and physical approaches used for synthesis of nanomaterials. The second part emphasizes the techniques used for characterizing the structure and properties of nanomaterials, aiming at describing the physical mechanism, data interpretation, and detailed applications of the techniques. The final part focuses on systems of different nanostructural materials with novel properties and applications.
This book provides valuable information on the new class of nanostructures—metal/carbon nanocomposites—and discusses new methods of their synthesis, properties, and applications. It covers computer prognosis, including quantum chemical modeling, for metal/carbon nanocomposites synthesis processing as well as fine dispersed suspensions obtaining processes and material modification processes. Intended for researchers, academics, and post-graduate students, the book will give readers an up-to-date look at this important and valuable new class of nanostructures: metal/carbon nanocomposites.
Here is an authoritative reference from world-renowned research groups for those working in materials science and electrochemistry. The authors describe properties of nanostructured materials that can improve performance in alternative energy devices.
Atomic Layer Deposition of Nanostructured Materials
Handbook of Nanophase and Nanostructured Materials
Recent Developments and New Directions
21st Century Nanostructured Materials
Handbook of Nanostructured Materials and Nanotechnology, Five-Volume Set

Providing the unique and vital link between the worlds of electrochemistry and nanomaterials, this reference and handbook covers advances in electrochemistry through the nanoscale control of electrode structures, as well as advances in nanotechnology through electrochemical synthesis strategies. It demonstrates how electrochemical methods are of great scientific and commercial interest due to their low cost and high efficiency, and includes the synthesis of nanowires, nanoparticles, nanoporous and layered nanomaterials of various compositions, as well as their applications -- ranging from superior electrode materials to energy storage, biosensors, and electroanalytical devices.
This thematic volume of Advances in Chemical Engineering presents the latest advances in the exciting interdisciplinary field of nanostructured materials. Written by chemical engineers, chemists, physicists, materials scientists, and bioengineers, this volume focuses on the molecular engineering of materials at the nanometer scale for unique size-dependent properties. It describes a "bottom-up" approach to designing nanostructured systems for a variety of chemical, physical, and biological applications.
Atomic layer deposition, formerly called atomic layer epitaxy, was developed in the 1970s to meet the needs of producing high-quality, large-area fl at displays with perfect structure and process controllability. Nowadays, creating nanomaterials and producing nanostructures with structural perfection is an important goal for many applications in nanotechnology. As ALD is one of the important techniques which offers good control over the surface structures created, it is more and more in the focus of scientists. The book is structured in such a way to fi t both the need of the expert reader (due to the systematic presentation of the results at the forefront of the technique and their applications) and the ones of students and newcomers to the fi eld (through the first part detailing the basic aspects of the technique). This book is a must-have for all Materials Scientists, Surface Chemists, Physicists, and Scientists in the Semiconductor Industry.
Annotation This book is a sequel to the first volume of The Chemistry of Nanostructured Materials. It covers the most exciting developments in the nanostructured materials field for the past five to ten years, with a particular focus on their applications in energy conversion and energy storage. Prominent authors of recognized authority in the field contribute their expertise in the review chapters.
Chemical Methods for Processing Nanomaterials
Synthesis, Properties and Applications
Molecular Low Dimensional and Nanostructured Materials for Advanced Applications
Nanostructured Materials
Fabrication to Applications

The book provides an introduction to nanostructured materials and guides the reader through their different engineering applications. It gives an overview of nanostructured materials applied in the fields of physics, chemistry, biology, medicine, and materials science. Materials for different applications in engineering such as those used in opto-electronics, energy, tribology, bio-applications, catalysis, reinforcement and many more have been described in this book. The book will be of interest to researchers and students who want to learn about applications of nanostructured materials in engineering.
With this handbook, the distinguished team of editors has combined the expertise of leading nanomaterials scientists to provide the latest overview of this field. They cover the whole spectrum of nanomaterials, ranging from theory, synthesis, properties, characterization to application, including such new developments as quantum dots, nanoparticles, nanoporous materials, nanowires, nanotubes, and nanostructured polymers. The result is recommended reading for everybody working in nanoscience: Newcomers to the field can acquaint themselves with this exciting subject, while specialists will find answers to all their questions as well as helpful suggestions for further research.
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This new book focuses on recent developments in this field, focusing on nanostructured materials and nanocomposites. The book deals with some recent developments in the synthesis and characterization of nanomaterial as well as its incorporation into polymer matrixes. The biological applications of nanomaterials are also discussed in detail, along with new approaches in nanostructured materials and nanocomposites. Highlights include a detailed discussion on synthesis of nanostructured materials and nanocomposites; reviews of biodiesel production; green nanostructured materials; and nanosensors, nanomedicines, and biomedical applications of nanostructured materials.
Nanomaterials
Carbon-based Nanomaterials in Analytical Chemistry
Emerging Nanostructured Materials for Energy and Environmental Science
Volume I: Synthesis, Volume II: Characterization, Volume III: Materials Systems and Applications I, Volume IV: Materials Systems and Applications II
Nanostructure, Nanosystems, and Nanostructured Materials

Nanostructured materials (NMs) are attracting interest as low-dimensional materials in the high-tech era of the 21st century. Recently, nanomaterials have experienced breakthroughs in synthesis and industrial and biomedical applications. This book presents recent achievements related to NMs such as graphene, carbon nanotubes, plasmonic materials, metal nanowires, metal oxides, nanoparticles, metamaterials, nanofibers, and nanocomposites, along with their physical and chemical aspects. Additionally, the book discusses the potential uses of these nanomaterials in photodetectors, transistors, quantum technology, chemical sensors, energy storage, silk fibroin, composites, drug delivery, tissue engineering, and sustainable agriculture and environmental applications.
Presenting the most relevant advances for employing carbon-based nanostructured materials for analytical purposes, this book serves as a reference manual that guides readers through the possibilities and helps when selecting the most appropriate material for targeted analytical applications. It critically discusses the role these nanomaterials can play in sample preparation, separation procedures and detection limit improvements whilst also considering the future trends in this field. Useful to direct initiatives, this book fills a gap in the literature for graduate students and professional researchers discussing the advantages and limitations across analytical chemistry in industry and academia.
The chemistry of nanomaterials has developed considerably in the past two decades, and concepts that have emerged from these developments are now well established. The surface modification of nanoparticles is a subject of intense research interest given its importance for many applications across a number of disciplines. This comprehensive guide is the first to be devoted to the surface chemistry of inorganic nanocrystals. Following an introduction to the physical chemistry of surfaces, chapters cover topics such as the surface modification of nanoparticles, water compatible, polymer-based, and inorganic nanocomposites, as well as relevant applications in catalysis, biotechnology and nanomedicine. Highlighting recent advances, Surface Chemistry of Colloidal Nanocrystals provides an integrated approach to chemical aspects related to the surface of nanocrystals. Written by prestigious scientists, this will be a useful resource for students and researchers working in surface science, nanoscience and materials science as well as those interested in the applications of the nanomaterials in areas such as health science, biology, and environmental engineering.
Nanoscience and technology are interdisciplinary fields that bring together physicists, chemists, materials scientists, biochemists, and engineers to meet both current and future challenges, including searching for nanostructured materials for various advanced applications, clean and renewable energies for sustainable development, new technologies for environmental protection and new strategies for detecting and fighting diseases. Among the current subjects in nanoscience and technology, nanostructured materials have been attracting a huge amount of attention and have seen fast and explosive development in the past two decades. Such materials have already shown great potentials in smart materials, composite materials, information technologies, solar cells, fuel cells, secondary batteries, supercapacitors, environmental pollutants monitoring devices, air and water purification, and removal of both domestic and outdoor air pollutants. This book invited internationally renowned experts in the field of nanostructured materials from different countries, and assembled fourteen reviews and articles that discuss the synthesis, properties and applications of nanostructured materials. It also points out future research & development directions of nanostructured materials and encourages future efforts towards a better life and environment through research and development of nanostructured materials, especially via the younger generation. This book is suited for the audience of teachers, lecturers, professors, researchers, engineers, college students, graduate students, policy makers, and company managers.
Chemistry of Nanomaterials
Nanostructured Materials and Nanotechnology
Novel Synthesis and Characterization of Nanostructured Materials
The Chemistry of Nanostructural Matertials
Nanostructured Materials Preparation via Condensation Ways

Nanostructured materials have been largely studied in the last few years. They have great potential of applications in different fields such as materials science, physics, chemistry, biology, mechanic and medicine. Synthesis and characterization of nanostructured materials is a subject of great interest involving science, market, politicians, government and society. Based on results obtained by the authors' research group during the past decade, this book comes to present novel techniques to synthesize nanostructured materials and characterize their properties such as crystallinity and crystallite size, specific surface area, particle size, morphology and catalytic activity. This book is aimed for students, researchers and engineers searching for methodologies to obtain and characterize nanostructures in details.
The Chemistry of Nanostructured MaterialsWorld Scientific
A presentation and discussion of the most recent advances in the field by the world's leading experts. Topics dealt with include new organic metals with quasi-two-dimensional structure, new organic superconductors, conducting and magnetic hybrid organic-inorganic materials, and highly conducting organic composites. Also reported are very interesting, significant results on optically controllable gratings in liquid crystals and polymers, organic electroluminescent materials, functionalised polymers and photonics, and nonlinear optics. Some new, fascinating fullerene derivatives and organic and metallic clusters are also presented. The chemical design of logic gates and molecular logic machines and the analysis of the roles of defects in clusters are attracting great interest. The properties of semiconducting quantum wires, electronic transport through magnetic molecular nanostructure and electronic transport properties of nanostructures containing both ferromagnetic and superconductors are also presented and discussed.
Nanomaterials and nanostructures are the original product of nanotechnology, and the key building blocks for enabling technologies. In this context, this book presents a concise overview of the synthesis and characterization methods of nanomaterials and nanostructures, while integrating facets of physics, chemistry, and engineering. The book summarizes the fundamentals and technical approaches in synthesis, and processing of nanostructures and nanomaterials, so as the reader can have a systematic and quick picture of the field. This book focuses on functional aspects of nanomaterials that have a high relevance to immediate applications, such as catalysis, energy harvesting, biosensing, and surface functionalization. There are chapters addressing nanostructured materials and composites and covering basic properties and requirements of this new class of engineered materials.
The Original Product of Nanotechnology
Functional & Nanostructured Materials from Chemistry [and] Nanostructured Polymers from Processing
Chemistry of Nanostructured Materials, the - Volume Ii
Physical, Chemical, and Biological Applications

This book provides the fundamental aspects of the diverse ranges of nanostructured materials (0D, 1D, 2D and 3D) for energy and environmental applications in a comprehensive manner written by specialists who are at the forefront of research in the field of energy and environmental science. Experimental studies of nanomaterials for aforementioned applications are discussed along with their design, fabrication and their applications, with a specific focus on catalysis, energy storage and conversion systems. This work also emphasizes the challenges of past developments and directions for further research. It also looks at details pertaining to the current ground - breaking of nanotechnology and future perspectives with a multidisciplinary approach to energy and environmental science and informs readers about an efficient utilization of nanomaterials to deliver solutions for the public.
This is the first comprehensive book covering all aspects of the use of carbonaceous materials in heterogeneous catalysis. It covers the preparation and characterization of carbon supports and carbon-supported catalysts; carbon surface chemistry in catalysis; the description of catalytic, photo-catalytic, or electro-catalytic reactions, including the development of new carbon materials such as carbon xerogels, aerogels, or carbon nanotubes; and new carbon-based materials in catalytic or adsorption processes. This is a premier reference for carbon, inorganic, and physical chemists, materials scientists and engineers, chemical engineers, and others.
This book describes the role and fundamental aspects of the diverse ranges of nanostructured materials for energy applications in a comprehensive manner. Advanced nanomaterial is an important and interdisciplinary field which includes science and technology. This work thus gives the reader an in depth analysis focussed on particular nanomaterials and systems applicable for technologies such as clean fuel, hydrogen generation, absorption and storage, supercapacitors, battery applications and more. Furthermore, it not only aims to exploit certain nanomaterials for technology transfer, but also exploits a wide knowledge on avenues such as biomass-derived nanomaterials, carbon dioxide conversions into renewable fuel chemicals using nanomaterials. These are the areas with lacunae that demand more research and application.
This book discusses the latest advancements in the processing of various types of nanomaterials. The main objective of the book is to provide the reader with a comprehensive review of the latest advances in synthesis as well as processing of almost all kinds of nanomaterials using various physical and chemical methods. The book includes chapters on Chemical Methods such as microemulsions, colloidal route, wet chemical method, chemical vapor deposition technique, sol-gel method, electrodeposition for growing different kinds of nanomaterials including Chalcogenides, Metal Oxide nanostructures, perovskite nanocrystals, nano structures on patterned electrode, Low Dimensional Carbon Nanomaterials and applications at Nanoscale.
Theory, Production and Development
Physics and Chemistry of Nano-structured Materials
The Chemistry of Nanostructured Materials
Nanostructured Materials for Energy Related Applications
Physics, Chemistry, Classification, and Emerging Applications in Industry, Biomedicine, and Agriculture

Chemistry of Nanomaterials: Fundamentals and Applications provides a foundational introduction to this chemistry. Beginning with an introduction to the field of nanoscience and technology, the book goes on to outline a whole range of important effects, interactions and properties. Tools used to assess such properties are discussed, followed by chapters putting this fundamental knowledge in context by providing examples of nanomaterials and their applications in the real world. Drawing on the experience of its expert authors, this book is an accessible introduction to the interactions at play in nanomaterials for both upper-level students and researchers. Highlights the foundational chemical interactions at play in nanomaterials Provides accessible insight for readers across multidisciplinary fields Places nanomaterial chemistry in the context of the broader field of nanoscale research
This book is a sequel to the first volume of The Chemistry.of Nanostructured Materials. It covers the most exciting developments in the nanostructured materials field for the past five to ten years, with a particular.focus on their applications in energy conversion and energy storage. Prominent authors of recognized authority in the field contribute their expertise in the review chapters. --Book Jacket.
The book is devoted to novel nanostructured materials and nanotechnology. A comprehensive analysis of the condensing methods of preparation of novel nanostructured materials is given. The methodology of power-consuming preparation of nanostructured materials is discussed, including thermolysis, photo- and radiolytic, electrochemical and mechanochemical methods. The peculiarities of chemical transformations in organic and inorganic matrices are compared. Special attention is given to kinetics and mechanism of the formation of nanocomposites. The structure and properties of such nanostructured materials are analysed.
There continues to be a worldwide interest in the size-dependent properties of nanostructured materials and their applications in many diverse fields such as catalysis, sensors, energy conversion processes, and biomedicine to name a few. The eleven chapters of this book written by different researchers include four chapters on the different methods of fabrication of specific materials followed by characterization of their properties, and the remaining seven chapters focusing on the fabrications and applications including three chapters on biomedical applications, two chapters on sensors, one chapter on solar cells, and one chapter on the use of nanoparticles in herbicides. These chapters provide up-to-date reviews useful for current and future researchers in these specific areas.
Nanostructured Materials and their Applications
Surface Chemistry of Colloidal Nanocrystals
Nanoelectronic Materials
Nanostructured Materials for Electrochemical Energy Production and Storage
Carbon Materials for Catalysis

With this handbook the distinguished team of editors has combined the expertise of leading nanomaterials scientists to provide the latest overview of this field. The authors cover the whole spectrum of nanomaterials, ranging from theory, synthesis, properties, characterization to application, including such new developments as: · quantum dots, nanoparticles, nanoporous materials, as well as nanowires, nanotubes and nanostructural polymers · nanocatalysis, nanolithography, nanomanipulation · methods for the synthesis of nanopartic
book can thus be recommended for everybody working in nanoscience: Beginners can acquaint themselves with the exciting subject, while specialists will find answers to all their questions plus helpful suggestions for further research.
Nanostructured materials is one of the hottest and fastest growing areas in today's materials science field, along with the related field of solid state physics. Nanostructured materials and their based technologies have opened up exciting new possibilites for future applications in a number of areas including aerospace, automotive, x-ray technology, batteries, sensors, color imaging, printing, computer chips, medical implants, pharmacy, and cosmetics. The ability to change properties on the atomic level promises a revolution in many rea
science and technology. Thus, this book details the high level of activity and significant findings are available for those involved in research and development in the field. It also covers industrial findings and corporate support. This five-volume set summarizes fundamentals of nano-science in a comprehensive way. The contributors enlisted by the editor are at elite institutions worldwide. Key Features * Provides comprehensive coverage of the dominant technology of the 21st century * Written by 127 authors from 16 countries, making th
international * First and only reference to cover all aspects of nanostructured materials and nanotechnology
In recent years, interest in the preparation and characterization of nanostructured materials has grown due to their distinctive properties and potential technological applications. Nanoscale materials represent a new realm of matter and offer widespread possibilities for contributions to science and technology. Nanoscale Materials in Chemistry explores the vast potential of nanomaterials and serves as essential reading for the entire science community. The extensive coverage of Nanoscale Materials in Chemistry presents a thorough in
to the field of nanostructured materials, including chemical synthesis methods, bonding theories, and applications. Because nanomaterials are finding more applications in the real world, this text contains up-to-date treatment of such topics as: Metals, semiconductor nanocrystals, and ceramics Double layers, optical properties, and the electrochemistry of metal nanoparticles Chemical and catalytic aspects of nanocrystals Specific heats and melting points of nanocrystalline materials Authored by world-renowned experts in the field of nanotechnology, Nanoscale Materials in Chemistry is suitable as a primary text for graduate courses and is a reliable resource for scientists.
This book presents synthesis techniques for the preparation of low-dimensional nanomaterials including 0D (quantum dots), 1D (nanowires, nanotubes) and 2D (thin films, few layers), as well as their potential applications in nanoelectronic systems. It focuses on the size effects involved in the transition from bulk materials to nanomaterials; the electronic properties of nanoscale devices; and different classes of nanomaterials from microelectronics to nanoelectronics, to molecular electronics. Furthermore, it demonstrates the structural st
physical, chemical, magnetic, optical, electrical, thermal, electronic and mechanical properties of the nanomaterials. Subsequent chapters address their characterization, fabrication techniques from lab-scale to mass production, and functionality. In turn, the book considers the environmental impact of nanotechnology and novel applications in the mechanical industries, energy harvesting, clean energy, manufacturing materials, electronics, transistors, health and medical therapy. In closing, it addresses the combination of biological syste
nanoelectronics and highlights examples of nanoelectronic–cell interfaces and other advanced medical applications. The book answers the following questions: • What is different at the nanoscale? • What is new about nanoscience? • What are nanomaterials (NMs)? • What are the fundamental issues in nanomaterials? • Where are nanomaterials found? • What nanomaterials exist in nature? • What is the importance of NMs in our lives? • Why so much interest in nanomaterials? • What is at nanoscale in nanomaterials? • What is graph
Are pure low-dimensional systems interesting and worth pursuing? • Are nanotechnology products currently available? • What are sensors? • How can Artificial Intelligence (AI) and nanotechnology work together? • What are the recent advances in nanoelectronic materials? • What are the latest applications of NMs?
Nanoscale Materials in Chemistry
Nanomaterials For Energy Conversion And Storage
Fundamentals and Applications
This book is a sequel to the first volume of The Chemistry of Nanostructured Materials. It covers the most exciting developments in the nanostructured materials field for the past five to ten years, with a particular focus on their applications in energy conversion and energy storage. Prominent authors of recognized authority in the field contribute their expertise in the review chapters.