

**Basic Engineering Physics By Amal Chakrabarty**

*The CRC Concise Encyclopedia of Nanotechnology sets the standard against which all other references of this nature are measured. As such, it is a major resource for both skilled professionals and novices to nanotechnology. The book examines the design, application, and utilization of devices, techniques, and technologies critical to research at the*

*Wastewater treatment technology is undergoing a profound transformation due to the fundamental changes in regulations governing the discharge and disposal of h-ardous pollutants. Established design procedures and criteria, which have served the industry well for decades, can no longer meet the ever-increasing demand. Toxicity reduction requirements dictate in the development of new technologies for the treatment of these toxic pollutants in a safe and cost-effective manner. Fo- most among these technologies are electrochemical processes. While electrochemical technologies have been known and utilized for the tre- ment of wastewater containing heavy metal cations, the application of these p- cesses is only just beginning for the oxidation of recalcitrant organic pollutants. In fact, only recent advances in electrochemical oxidation processes has been re- corded in the use-assisted oxidation process of AOPs. This is due to the development of boron-doped diamond (BDD) anodes on which the oxidation of organic pollutants is mediated via the formation of active hydroxyl radicals.*

*Colloids are ubiquitous particles that are ubiquitous in both natural and industrial products. Colloids and colloidal systems play a significant role in human health as well as commercial and industrial situations. Colloids have important applications in medicine, sewage disposal, water purification, mining, photography, electroplating, agriculture, and more. This book gathers recent research from experts in the field of colloids and discusses several aspects of colloidal morphology, synthesis, and applications. The book is divided into three sections that cover different techniques for the synthesis of colloids, the structure, dynamic and stability of colloids, and applications of colloidal particles, respectively.*

*Graphene, Fullerenes, Nanotubes, and Nanodiamonds*

*Biomedical Applications of Magnetic Particles*

*Carbon Nanotubes*

*Government-wide Index to Federal Research & Development Reports*

*Electrospun Nanofibers from Bioresources for High-Performance Applications*

*Thermodynamic and Transport Properties*

The book in its present form is due to my interaction with the students for quite a long time. It had been my long-cherished desire to write a book covering most of the topics that form the syllabii of the Engineering and Science students at the degree level. Many students, although able to understand the various topics of the books, may not be able to put their knowledge to use. For this purpose a number of questions and problems are given at the end of each chapter.

This new book discusses a selection of advanced topics on carbon nanotubes—their extraordinary properties, structure, design, fabrication, development, engineering, functionalization, carbon nanotube enabled nanocomposites, characterization, and, moreover, their utility in many applications. The volume highlights the amazing potential of advanced CNT composites in automotive, aeronautics, spacecrafts, transistors replacing Si electronics, energy, purification, hydrogen storage, tissue regeneration, electrochemical supercapacitors, sensing, biomedical applications, agriculture, energy, and technical applications. The book specifically discusses the applications of carbon nanotubes for a greener environment, as well as applications for biomedical uses, in drug delivery, and in display technology. It also explores the uses of CNTs in the energy and aerospace industries, such as for solar energy conversion, as a lubricant additive for enhancing energy efficiency, and more. Other chapters explore the potential of carbon nanotubes in hydrogen storage and carbon nanotube electronics.

This volume offers a comprehensive examination of the subject of heat and mass transfer with nanofluids as well as a critical review of the past and recent research projects in this area. Emphasis is placed on the fundamentals of the transport processes using particle–fluid suspensions, such as nanofluids. The nanofluid research is examined and presented in a holistic way using a great deal of our experience with the subjects of continuum mechanics, statistical thermodynamics, and non-equilibrium thermodynamics of transport processes. Using a thorough database, the experimental, analytical, and numerical advances of recent research in nanofluids are critically examined and connected to past research with medium and fine particles as well as to functional engineering systems. Promising applications and technological issues of heat/mass transfer system design with nanofluids are also discussed. This book also: Provides a deep scientific analysis of nanofluids using classical thermodynamics and statistical thermodynamics to explain and interpret experimental observations Presents the theory and experimental results for both thermodynamic and transport properties Examines all transport properties and transport processes as well as their relationships through the pertinent macroscopic coefficients Combines recent knowledge pertaining to nanofluids with the previous fifty years of research on particulate flows, including research on transient flow and heat transfer of particulate suspensions Conducts an holistic examination of the material from more than 500 archival publications

New Production Technologies, Unique Properties, and Applications

A Textbook of Engineering Physics (For 1st & 2nd Semester of M.G. University, Kerala)

Commencement Programs

Design, Fabrication, and Characterization of Multifunctional Nanomaterials

Theoretical Principles and Experimental Methods

Electrochemistry for the Environment

Polymer-Based Advanced Functional Composites for Optoelectronic and Energy Applications explains how polymer-based smart composites and nanocomposites can be prepared and utilized for novel optical, sensor and energy-related applications. The book begins with an introductory section on the fundamentals of smart polymer composites, including structure-property relationships and conjugated polymers. Other sections examine optical applications, including the use of polymer-based smart composites for luminescent solar concentrators, electro-chromic applications, light conversion applications, ultraviolet shielding applications, LED encapsulation applications, sensor applications, including gas-sensing, strain sensing, robotics and tactile sensors, with final sections covering energy-related applications, including energy harvesting, conversion, storage, vibrational energy harvesting, and more. This is an essential guide for researchers, scientists and advanced students in smart polymers and materials, polymer science, composites, nanocomposites, electronics and materials science. It is also a valuable book for scientists, R&D professionals and engineers working with products that could utilize smart polymer composites. Provides thorough coverage of the latest pioneering research in the field of polymer-based smart composites Offers an applications-oriented approach, enabling the reader to understand state-of-the-art optical, sensor and energy applications Includes an in-depth introductory section, covering important aspects such as structure-property relationships and the role of conjugated polymers

Carbon Nanomaterials: Modeling, Design, and Applications provides an in-depth review and analysis of the most popular carbon nanomaterials, including fullerenes, carbon nanotubes, graphene and novel carbon nanomaterial-based membranes and thin films, with emphasis on their modeling, design and applications. This book provides basic knowledge of the structures, properties and applications of carbon-based nanomaterials. It illustrates the fundamental structure-property relationships of the materials in both experimental and modeling aspects, offers technical guidance in computational simulation of nanomaterials, and delivers an extensive view on current achievements in research and practice, while presenting new possibilities in the design and usage of carbon nanomaterials. This book is aimed at both undergraduate and graduate students, researchers, designers, professors, and professionals within the fields of materials science and engineering, mechanical engineering, applied physics, and chemical engineering.

Swift ion beam analysis (IBA) of materials and their surfaces has been widely applied to many fields over the last half century, constantly evolving to meet new requirements and to take advantage of developments in particle detection and data treatment. Today, emerging fields in nanosciences introduce extreme demands to analysis methods at the nanoscale. This book addresses how analysis with swift ion beams is rising to meet such needs. Aimed at early stage researchers and established researchers wishing to understand how IBA can contribute to their analytical requirements in nanosciences, the basics of the interactions of charged particles with matter, as well as the operation of the relevant equipment, are first presented. Many recent examples from nanoscience research are then explored in which the specific analytical capabilities of IBA are emphasized, together with the place of IBA alongside the wealth of other analytical methods.

A Textbook of Engineering Physics

CRC Concise Encyclopedia of Nanotechnology

Polymer-Based Advanced Functional Composites for Optoelectronic and Energy Applications

Grants and Awards for the Fiscal Year Ended ...

The Physics of Semiconductor Devices

Carbon Nanomaterials: Modeling, Design, and Applications

Fundamentals and Properties of Multifunctional Nanomaterials outlines the properties of highly intricate nanosystems, including liquid crystalline nanomaterials, magnetic nanosystems, ferroelectrics, nanomultiferroics, plasmonic nanosystems, carbon-based nanomaterials, 1D and 2D nanomaterials, and bio-nanomaterials. This book reveals the electromagnetic interference shielding properties of nanocomposites. The fundamental attributes of the nanosystems leading to the multifunctional applications in diverse areas are further explored throughout this book. This book is a valuable reference source for researchers in materials science and engineering, as well as in related disciplines, such as chemistry and physics. Explains the concepts and fundamental applications of a variety of multifunctional nanomaterials; Introduces fundamental principles in the fields of magnetism and multiferroics; Addresses ferromagnetics, multiferroics, and carbon nanomaterials.

Structure- and Adatom-Enriched Essential Properties of Graphene Nanoribbons offers a systematic review of the feature-rich essential properties in emergent graphene nanoribbons, covering mainstream theoretical and experimental research. It includes a wide range of 1D systems; namely, armchair and zigzag graphene nanoribbons with and without hydrogen terminations, curved and zipped graphene nanoribbons, folded graphene nanoribbons, carbon nanorolls, bilayer graphene nanoribbons, edge-decorated graphene nanoribbons, and alkali-, halogen-, Al-, Ti, and Bi-adsorbed graphene nanoribbons. Both multiorbital chemical bondings and spin arrangements, which are responsible for the diverse phenomena, are explored in detail. First-principles calculations are developed to thoroughly describe the physical, chemical, and material phenomena and concise images explain the fundamental properties. This book examines in detail the application and theory of graphene nanoribbons, offering a new perspective on up-to-date mainstream theoretical and experimental research.

This book "Concepts of Semiconductor Photocatalysis" contains recent research on the preparation, characterization, and potential applications of the semiconductor photocatalyst. This research is promising and has received a lot of interest in the last few decades. The book covers advanced topics on the optical, physical, structural, and electro-catalysis and photo-catalysis applications. Development of new and noble efficient technology is pointing researchers toward the safe, facile, non-toxic, eco-friendly route of synthesis-to-applications, which can be used for manufacture at a large scale. This book presents an overview of the current photocatalyst fundamental theory, substantial applications, and use of the research worldwide. It is an important book for research organizations, government research-centers, academic libraries, and R

Contamination of Water

Journal of Zhejiang University

Carbon Nanomaterials Sourcebook, Two-Volume Set

Science. A.

Structure- and Adatom-Enriched Essential Properties of Graphene Nanoribbons

Engineered Carbon Nanotubes and Nanofibrous Material

**Renewable Materials and Green Technology Products: Environmental and Safety Aspects** looks at the design, manufacture, and use of efficient, effective, safe, and more environmentally benign chemical products and processes. It includes a broad range of application-based solutions to the development of renewable materials and green technology. The latest trends in the green synthesis and properties of CNs are presented in the first chapter of this book for generating social and environmental benefits. The book goes on to highlight the massive green trail of emerging nanotechnology for a clean green technology tool. Chapters discuss green technological alternatives for the global abatement of air pollution, effective use and treatment of water and wastewater, renewable power generation from solar PV cells, carbon-based nanomaterials synthesized using green protocol for sustainable development, green technologies that help to achieve economic development without harming the environment, technical solutions to cut down the quantum of N losses, conventional processing techniques in developing the bionanocomposites as the biocatalyst, and more.

**The definitive reference on the properties and applications of polyolefin blends** Polyolefins account for more than half of total plastics consumption in the world. In recent years, usage of and research on polyolefin blends have increased significantly due to new applications in medicine, packaging, and other fields and the development of novel polyolefins. With a special emphasis on nano- and micro-structures of crystals and phase morphology, Polyolefin Blends condenses and consolidates current information on polyolefins so that the reader can compare, select, and integrate a material solution. Focusing exclusively on the fundamental aspects as well as applications of polyolefin blends, this authoritative reference: \* Features an introductory chapter that serves as a guide to polyolefin blends \* Includes chapters covering formulation design, processing, characterization, modeling and simulation, engineering performance properties, and applications \* Covers polyolefin/polyolefin blends and polyolefin/non-polyolefin blends \* Discusses miscibility, phase behavior, functionalization, compatibilization, microstructure, crystallization, and physical and mechanical properties \* Covers new research trends including in-situ reactor blending and reactive processing, such as compatibilization/functionalization in the melt \* Contains practical examples from open literature sources and commercial products With chapters contributed by leading experts from several countries, this is a must-have reference for scientists and engineers conducting research on polyolefin blends and for professionals in medical, packaging, and other commodity fields. It is also an excellent text for graduate students studying polymer science and polymer processing.

**Carbon Nanomaterials Sourcebook** contains extensive, interdisciplinary coverage of carbon nanomaterials, encompassing the full scope of the field—from physics, chemistry, and materials science to molecular biology, engineering, and medicine—in two comprehensive volumes. Written in a tutorial style, this first volume of the sourcebook: Focuses on graphene, fullerenes, nanotubes, and nanodiamonds Describes the fundamental properties, growth mechanisms, and processing of each nanomaterial discussed Explores functionalization for electronic, energy, biomedical, and environmental applications Showcases materials with exceptional properties, synthesis methods, large-scale production techniques, and application prospects Provides the tools necessary for understanding current and future technology developments, including important equations, tables, and graphs Each chapter is dedicated to a different type of carbon nanomaterial and addresses three main areas: formation, properties, and applications. This setup allows for quick and easy search, making the Carbon Nanomaterials Sourcebook: Graphene, Fullerenes, Nanotubes, and Nanodiamonds, Volume 1 a must-have reference for scientists and engineers.

Regular papers & short notes

Integrating Theory and Technique

Hearings

Renewable Materials and Green Technology Products

Polymer Nanocomposite Membranes for Pervaporation

Green Materials and Environmental Chemistry

Nanofibers are possible solutions for a wide spectrum of research and commercial applications and utilizing inexpensive bio-renewable and agro waste materials to produce nanofibers can lower manufacturing cost via electrospinning. This book explains synthesis of green, biodegradable, and environmentally friendly nanofibers from bioresources, their mechanical and morphological characteristics along with their applications across varied areas. It gives an elaborate idea on conductive polymers for tissue engineering application as well. Features: Provides insight about electrospun nanofibers from green, biodegradable and environmentally friendly bio resources. Reviews surface characterization of electrospun fibers. Covers diversified applications such as cancer treatment, COVID-19 solutions, food packaging applications, textile materials, and flexible electronic devices. Describes the combined use of 3D printing and electrospinning for tissue engineering scaffolds. Includes Melt electrospinning technique and its advantages over Solution electrospinning This book aims at Researchers and Graduate Students in Material Science and Engineering, Environmental Engineering, Chemical Engineering, Electrical Engineering, Mechanical Engineering, and Biomedical Engineering.

Fuzzy logic techniques have had extraordinary growth in various engineering systems. The developments in engineering sciences have caused apprehension in modern years due to high-tech industrial processes with ever-increasing levels of complexity. Advanced Fuzzy Logic Approaches in Engineering Science provides innovative insights into a comprehensive range of soft fuzzy logic techniques applied in various fields of engineering problems like fuzzy sets theory, adaptive neuro fuzzy inference system, and hybrid fuzzy logic genetic algorithms belief networks in industrial and engineering settings. The content within this publication represents the work of particle swarms, fuzzy computing, and rough sets. It is a vital reference source for engineers, research scientists, academicians, and graduate-level students seeking coverage on topics centered on the applications of fuzzy logic in high-tech industrial processes.

Optical and Molecular Physics: Theoretical Principles and Experimental Methods addresses many important applications and advances in the field. This book is divided into 5 sections: Plasmonics and carbon dots physics with applications Optical films, fibers, and materials Optical properties of advanced materials Molecular physics and diffusion Macromolecular physics Weaving together science and engineering, this new volume addresses important applications and advances in optical and molecular physics. It covers plasmonics and carbon dots physics with applications; optical films, fibers, and materials; optical properties of advanced materials; molecular physics and diffusion; and macromolecular physics. This book looks at optical materials in the development of composite materials for the functionalization of glass, ceramic, and polymeric substrates to interact with electromagnetic radiation and presents state-of-the-art research in preparation methods, optical characterization, and usage of optical materials and devices in various photonic fields. The authors discuss devices and technologies used by the electronics, magnetics, and photonics industries and offer perspectives on the manufacturing technologies used in device fabrication.

Polyolefin Blends

Fundamentals and Properties of Multifunctional Nanomaterials

Health Risk Assessment and Treatment Strategies

Japanese Journal of Applied Physics

Concepts of Semiconductor Photocatalysis

Advanced Fuzzy Logic Approaches in Engineering Science

This book disseminates the current knowledge of semiconductor physics and its applications across the scientific community. It is based on a biennial workshop that provides the participating research groups with a stimulating platform for interaction and collaboration with colleagues from the same scientific community. The book discusses the latest developments in the field of III-nitrides; materials & devices, compound semiconductors, VLSI technology, optoelectronics, sensors, photovoltaics, crystal growth, epitaxy and characterization, graphene and other 2D materials and carbon nanomaterials.

Carbon nanotubes, with their extraordinary engineering properties, have garnered much attention in the past 10 years. Because of the broad range of potential applications, the scientific community is more motivated than ever to move beyond basic properties and explore the real issues associated with carbon nanotube-based applications. Presenting up-to-date literature that presents the current state of the science, this book, Engineered Carbon Nanotubes and Nanofibrous Material: Integrating Theory and Technique, fully explores the development phase of carbon nanotube-based applications. It looks at carbon nanotubes and their applications in diverse areas of science and engineering and considers environmental engineering applications as well. This volume is a valuable resource for engineers, scientists, researchers, and professionals in a wide range of disciplines whose focus remains on the power and promise of carbon nanotubes.

Applications of Multifunctional Nanomaterials showcases the major applications of highly correlated nanosystems that highlight the multifunctionality of nanomaterials. This includes applications of nanomaterials in spintronics, information storage, magnetic data storage and memory device applications, energy harvesting applications using nanomultiferroics with piezoelectric polymers, nonlinear optical limiting applications using graphene or ferrite nanoparticles, soft tissues applications, EMI shielding applications and even applications in sunscreen lotions, cosmetics and food packaging will be discussed. In addition, nanoparticle incorporation in animal nutrition intended for increased productivity is an innovative and groundbreaking theme of the book. Finally, functionalized magnetic nanoparticles for drug delivery, magnetic hyperthermia, sutures, cancer therapy, dentistry and other biomedical and bio-engineering applications using nanoparticles are discussed in detail. Explains the major design and fabrication techniques and processes for a range of multifunctional nanomaterials and nanotechnologies Demonstrates how ferromagnetics, multiferroics and carbon nanomaterials are designed for electronic and optical applications Assesses the major challenges of using multifunctional nanomaterials on a mass scale

British Journal of Applied Physics

Federal Home Loan Bank Board, Housing and Home Finance Agency, National Aeronautics and Space Administration, National Aeronautics and Space Council, National Science Foundation, Office of Science and Technology

Swift Ion Beam Analysis in Nanosciences

Modern Engineering Physics

Functionalization and Potential Applications

Federal home loan bank board, Housing and home finance agency, National aeronautics and space council, National aeronautics and space council, National science foundation, Office of science and technology

This two-volume sourcebook is the most comprehensive reference for carbon nanomaterials, bringing together the physics, chemistry, materials science, molecular biology and engineering of all carbon nanomaterial types that are important in electronics, energy, biomedical and environmental applications. Each chapter addresses the fundamental properties, growth mechanisms, processing and functionalization of a particular nanocarbon. The first volume covers graphene, fullerenes, nanotubes and nanodiamonds. The second volume focuses on nanoparticles, nanocapsules, nanofibers, nanoporous structures and nanocomposites.

Contamination of Water: Health Risk Assessment and Treatment Strategies takes an interconnected look at various pollutants, sources of contamination, the effects of contamination on aquatic ecosystems and human health, and potential mitigation strategies. The book begins by examining the sources of potential contamination, including the current scenario of dyes, heavy metals, pesticides and oils contamination as well as regions impacted due to industrialization, mining or urbanization. It then analyzes various methods of water contamination, assesses health risk and adverse effects on those impacted, and concludes with an exploration of efficient, low-cost treatment technologies that remove toxic pollutants from the water. This book incorporates both theoretical and practical information that will be useful for researchers, professors, graduate students and professionals working on water contamination, environmental and health impacts, and the management and treatment of water resources. Provides practical case studies of various types of contamination and sources in different regions Offers an overview of inorganic and organic contaminants and their impact on human health Evaluates several low-cost, efficient and effective water treatment technologies to remove toxins from water and minimize risk

A Textbook of Engineering Physics is written with two distinct objectives:to provide a single source of information for engineering undergraduates of different specializations and provided them a solid base in physics.Successivs editions of the book incorporated topic as required by students pursuing their studies in various universities.In this new edition the contents are fine-tuned,modeinized and updated at various stages.

Pacific Northwest Laboratory Annual Report for 1978 to the DOE Assistant Secretary for Environment

Applications of Multifunctional Nanomaterials

Carbon Nanomaterials Sourcebook

Environmental and Safety Aspects

Atomistic Simulation of Anisotropic Crystal Structures at Nanoscale

Colloids

The world faces significant challenges as the population and consumption continue to grow while nonrenewable fossil fuels and other raw materials are depleted at ever-increasing rates. Moreover, environmental consciousness and a penchant for thinking in terms of material cycles have caught on with consumers: the use of environmentally compatible materials and production methods is desired. This volume, Green Materials and Environmental Chemistry: New Production Technologies, Unique Properties, and Applications takes a technical approach to address these issues using green design and synthesis.

This book provides an overview of the latest developments in environmental chemistry and sustainable materials written by experts in their respective research areas. This interdisciplinary volume offers research with the aim to minimize environmental impacts across all lifecycle phases in the design and engineering of products, processes, and systems as just one possible approach to addressing the larger issue of sustainability that includes environmental, economic, and social aspects.

Multiscale simulations of atomistic/continuum coupling in computational materials science, where the scale expands from macro-/micro- to nanoscale, has become a hot research topic. These small units, usually nanostructures, are commonly anisotropic. The development of molecular modeling tools to describe and predict the mechanical properties of structures reveals an undeniable practical importance. Typical anisotropic structures (e.g. cubic, hexagonal, monoclinic) using DFT, MD, and atomic finite element methods are especially interesting, according to the modeling requirement of upscaling structures. It therefore connects nanoscale modeling and continuous patterns of deformation behavior by identifying relevant parameters from smaller to larger scales. These methodologies have the prospect of significant applications. I would like to recommend this book to both beginners and experienced researchers.

Polymer Nanocomposite Membranes for Pervaporation assesses recent patterns in the pervaporation performance of polymer nanocomposites of different length scales. The book discusses the effects of a range of nanofillers, their dispersion, the effect of different polymers, and organic and inorganic nanomaterials in the pervaporation process. In addition, the book explores how the different properties of a variety of nanocomposite materials make them better for use in different types of liquids, while also discussing the challenges of using different nanocomposites for this purpose effectively and safely. In particular, polymer nanocomposites for g nanoscale dispersion, filler/polymer interactions, and morphology are addressed. This is an important reference source for materials scientists, chemical engineers and environmental engineers who want to learn more about how polymer nanocomposites are being used to make the pervaporation separation process more effective.

Nanofluids

Optical and Molecular Physics

Proceedings of IWPSD 2017

Types, Preparation and Applications

**Design, Fabrication, and Characterization of Multifunctional Nanomaterials** covers major techniques for the design, synthesis, and development of multifunctional nanomaterials. The chapters highlight the main characterization techniques, including X-ray diffraction, scanning electron microscopy, high-resolution transmission electron microscopy, energy dispersive X-ray spectroscopy, and scanning probe microscopy. The book explores major synthesis methods and functional studies, including: Brillouin spectroscopy; Temperature-dependent Raman spectroscopic studies; Magnetic, ferroelectric, and magneto-electric coupling analysis; Organ-on-a-chip methods for testing nanomaterials; Magnetron sputtering techniques; Pulsed laser deposition techniques; Positron annihilation spectroscopy to prove defects in nanomaterials; Electroanalytical techniques. This is an important reference source for materials science students, scientists, and engineers who are looking to increase their understanding of design and fabrication techniques for a range of multifunctional nanomaterials. Explains the major design and fabrication techniques and processes for a range of multifunctional nanomaterials; Demonstrates the design and development of magnetic, ferroelectric, multiferroic, and carbon nanomaterials for electronic applications, energy generation, and storage; Green synthesis techniques and the development of nanofibers and thin films are also emphasized.

**Laser and Holography (Nano Technology & Super Conductivity) Crystallography & Modern Engineering Ultrasonics I Fibre Optics Applications Of Optical Fibres**

**Biomedical Applications of Magnetic Particles** discusses fundamental magnetic nanoparticle physics and chemistry and explores important biomedical applications and future challenges. The first section presents the fundamentals of the field by explaining the theory of magnetism, describing techniques to synthesize magnetic particles, detailing methods to characterize magnetic particles, and quantitatively describing the applied magnetic forces, torques, and the resultant particle motions. The second section describes the wide range of biomedical applications, including chemical sensors, cellular actuators, drug delivery, magnetic hyperthermia, magnetic resonance imaging contrast enhancement, and toxicity. Additional key features include: Covers both introduction to physics and characterization of magnetic nanoparticles and the state of the art in biomedical applications Authoritative reference for scientists and engineers for all new or old to the field Describes how the size of magnetic nanoparticles affects their magnetic properties, colloidal properties, and biological properties. Written by a team of internationally respected experts, this book provides an up-to-date authoritative reference for scientists and engineers.