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Titanium Dioxide Dongfang Yang 2018-06-27 Titanium dioxide is currently being used in many industrial products. It provides unique photocatalytic properties for water splitting and purification, bacterial inactivation, and organics degradation. It has also been widely used as the photoanode for dye-sensitized solar cells and coatings for self-cleaning surfaces, biomedical implants, and nanomedicine. This book covers various aspects of titanium dioxide nanomaterials including their unique one-dimensional, two-dimensional, mesoporous, and hierarchical nanostructures and their synthetic methods such as sol-gel, hydrothermal, anodic oxidation, and electrophoretic deposition, as well as its key applications in environmental and energy sectors. Through these 24 chapters written by experts from the international scientific community, readers will have access to a comprehensive overview of the recent research and development findings on the titanium dioxide nanomaterials.

Localized Waves Hugo E. Hernández-Figueroa 2008-02-04 The first book on Localized Waves—a subject of phenomenal worldwide research with important applications from secure communications to medicine Localized waves—also known as non-diffractive waves—are beams and pulses capable of resisting diffraction and dispersion over long distances even in non-guiding media. Predicted to exist in the early 1970s and obtained theoretically and experimentally as solutions to the wave equations starting in 1992, localized waves now garner intense worldwide research with applications in all fields where a role is played by a wave equation, from electromagnetism to acoustics and quantum physics. In the electromagnetics areas, they are paving the way, for instance, to ubiquitous secure communications in the range of millimeter waves, terahertz frequencies, and optics. At last, the localized waves with an envelope at rest are expected to have important applications especially in medicine. Localized Waves brings together the world’s most productive researchers in the field to offer a well-balanced presentation of theory and experiments in this new and exciting subject. Composed of thirteen chapters, this dynamic volume: Presents a thorough review of the theoretical foundation and historical aspects of localized waves Explores the interconnections of the subject with other technologies and scientific areas Analyzes the effect of arbitrary anisotropies on both continuous-wave and pulsed non-diffracting fields Describes the physical nature and experimental implementation of localized waves Provides a general overview of wave localization, for example in photonic crystals, which have received increasing attention in recent years Localized Waves is the first book to cover this emerging topic, making it an indispensable resource in particular for researchers in electromagnetics, acoustics, fundamental physics, and free-space communications, while also serving as a requisite text for graduate students.

Heat and Mass Transfer Ashim K. Datta 2017-01-23 This substantially revised text represents a broader based biological engineering title. It includes medicine and other applications that are desired in curricula supported by the American Society of Agricultural and Biological Engineers, as well as many bioengineering departments in both U.S. and worldwide departments. This new edition will focus

Advances in Chitin/Chitosan Characterization and Applications Marguerite Rinaudo 2019-04-23 Functional advanced biopolymers have received far less attention than renewable biomass (cellulose, rubber, etc.) used for energy production. Among the most advanced biopolymers known is chitosan. The term chitosan refers to a family of polysaccharides obtained by partial de-N-acetylation from chitin, one of the most abundant renewable resources in the biosphere. Chitosan has been firmly established as having unique material properties as well as biological activities. Either in its native form or as a chemical derivative, chitosan is amenable to being processed—typically under mild conditions—into soft materials such as hydrogels, colloidal nanoparticles, or nanofibers. Given its multiple biological properties, including biodegradability, antimicrobial effects, gene transfectability, and metal adsorption—to name but a few—chitosan is regarded as a widely versatile building block in various sectors (e.g., agriculture, food, cosmetics, pharmacy) and for various applications (medical devices, metal adsorption, catalysis, etc.). This Special Issue presents an updated account addressing some of the major applications, including also chemical and enzymatic modifications of oligos and polymers. A better understanding of the properties that underpin the use of chitin and chitosan in different fields is key for boosting their more extensive industrial utilization, as well as to aid regulatory agencies in establishing specifications, guidelines, and standards for the different types of products and applications.

Aulton’s Pharmaceutics Michael E. Aulton 2013 Pharmaceutics is one of the most diverse subject areas in all of pharmaceutical science. In brief, it is concerned with the scientific and technological aspects of the design and manufacture of dosage forms or medicines. An understanding of pharmaceutics is therefore vital for all pharmacists and those pharmaceutical scientists who are involved with converting a drug or a potential drug into a medicine that can be delivered safely, effectively and conveniently to the patient. Now in its fourth edition, this best-selling textbook in pharmaceutics has been brought completely up to date to reflect the rapid advances in delivery methodologies by eye and injection, advances in drug formulations and delivery methods for special groups (such as children and the elderly), nanomedicine, and pharmacognosy. At the same time the editors have striven to maintain the accessibility of the text for students of pharmacy, preserving the balance between being a suitably pitched introductory text and a clear reflection of the state of the art. provides a logical, comprehensive account of drug design and manufacture includes the science of formulation and drug delivery designed and written for newcomers to the design of dosage forms New to this edition New editor: Kevin Taylor, Professor of Clinical Pharmaceutics, School of Pharmacy, University of London. Twenty-two new contributors. Six new chapters covering parenteral and ocular delivery; design and administration of medicines for the children and elderly; the latest in plant medicines; nanotechnology and nanomedicines, and the delivery of biopharmaceuticals. Thoroughly revised and updated throughout.

The Use of Dispersants in Marine Oil Spill Response National Academies of Sciences, Engineering, and Medicine 2020-04-24 Whether the result of an oil well blowout, vessel collision or grounding, leaking pipeline, or other incident at sea, each marine oil spill will present unique circumstances and challenges. The oil type and properties, location, time of year, duration of spill, water depth, environmental conditions, affected biomes, potential human community impact, and available resources may vary significantly. Also, each spill will be governed by policy guidelines, such as those set forth in the National Response Plan, Regional Response Plans, or Area Contingency Plans. To respond effectively to the specific conditions presented during an oil spill, spill responders have used a variety of response options—including mechanical recovery of oil using skimmers and booms, in situ burning of oil, monitored natural attenuation of oil, and dispersion of oil by chemical dispersants. Because each response method has advantages and disadvantages, it is important to understand specific scenarios where a net benefit may be achieved by using a particular tool or combination of tools. This report builds on two previous National Research Council reports on dispersant use to provide a current understanding of the state of science and to inform future marine oil spill response operations. The response to the 2010 Deepwater Horizon spill included an unprecedented use of dispersants via both surface application and subsea injection. The magnitude of the spill stimulated interest and funding for research on oil spill response, and dispersant use in particular. This study assesses the effects and efficacy of dispersants as an oil spill response tool and evaluates trade-offs associated with dispersant use.

Particle Size Measurements Henk G. Merkus 2009-01-07 This book focuses on the practical aspects of particle size measurement: a major difference with existing books, which have a more theoretical approach. Of course, the emphasis still lies on the measurement techniques. For optimum application, their theoretical background is accompanied by quantitative quality aspects, limitations and problem identification. In addition the book covers the phenomena of sampling and dispersion of powders, either of which may be dominant in the overall analysis error. Moreover, there are chapters on the general aspects of quality for particle size analysis, quality management, reference materials and written standards, in- and on-line measurement, definitions and multilingual terminology, and on the statistics required for adequate interpretation of results. Importantly, a relation is made to product performance, both during processing as well as in final application. In view of its set-up, this book is well suited to support particle size measurement courses.

Membrane Technology and Applications Richard W. Baker 2004-05-31 Table of Contents Preface Acknowledgments for the first edition Acknowledgments for the second edition 1 Overview of Membrane Science and Technology 1 2 Membrane Transport Theory 15 3 Membranes and Modules 89 4 Concentration Polarization 161 5 Reverse Osmosis 191 6 Ultrafiltration 237 7 Microfiltration 275 8 Gas Separation 301 9 Pervaporation 355 10 Ion Exchange Membrane Processes - Electrodialysis 393 11 Carrier Facilitated Transport 425 12 Medical Applications of Membranes 465 13 Other Membrane Processes 491 Appendix 523 Index 535.

Dear Martin Nic Stone 2018-05-03 'Absolutely incredible, honest, gut-wrenching! A must-read!' Angie Thomas, author of The Hate U Give 'Painfully timely and deeply moving, this is the novel the next generation should be reading' Jodi Picoult 'Justyce's story is earnest, funny, achingly human, and unshakably hopeful. I am forever changed.' Becky Albertalli, author of Simon vs. the Homo Sapiens Agenda 'Raw and gripping' Jason Reynolds, author of Long Way Down 'A powerful, wrenching, and compulsively readable story that lays bare the history, and the present, of racism in America' John Green, author of The Fault in our Stars ----- Raw, captivating, and undeniably real, Nic Stone boldly tackles American race relations in this #1 New York Times bestselling novel. Justyce McAllister is top of his class and set for the Ivy League – but none of that matters to the police officer who just put him in handcuffs. And despite leaving his rough neighbourhood behind, he can't escape the scorn of his former peers or the ridicule of his new classmates. Justyce looks to the teachings of Dr. Martin Luther King Jr. for answers. But do they hold up anymore? He starts a journal to Dr. King to find out. Then comes the day Justyce goes driving with his best friend, Manny, windows rolled down, music turned up – way up, sparking the fury of a white off-duty police officer beside them. Words fly. Shots are fired. Justyce and Manny are caught in the crosshairs. In the media fallout, it's Justyce who is under attack. Return to the world of Dear Martin in the stunning NEW novel from Nic Stone, Dear Justyce. Available now! Also by Nic Stone Odd One Out Jackpot Dear Justyce

Polystyrene Cole Lynwood 2014-01-01 Polystyrene represents one of the oldest and the most widespread polymers in the world. Its starts as far back as 1839 when a German apothecary Edmon Simon distilled an oily liquid named styrol from the resin of Turkish sweet gum trees. In several days, the sterol converted into a jelly product that he thought resulted from the oxidation process. For that reason, the jelly product received the name styrolohide. This book discusses the synthesis of polystyrene, as well as the characteristics and applications of this polymer.

Nano and Quantum Optics Ulrich Hohenester 2019-12-18 This classroom-tested textbook is a modern primer on the rapidly developing field of quantum nano optics which investigates the optical properties of nanosized materials.

The essentials of both classical and quantum optics are presented before embarking through a stimulating selection of further topics, such as various plasmonic phenomena, thermal effects, open quantum systems, and photon noise. Didactic and thorough in style, and requiring only basic knowledge of classical electrodynamics, the text provides all further physics background and additional mathematical and computational tools in a self-contained way. Numerous end-of-chapter exercises allow students to apply and test their understanding of the chapter topics and to refine their problem-solving techniques.

Introduction to Sol-Gel Processing Alain C. Pierre 2020-03-10 This book presents a broad, general introduction to the processing of Sol-Gel technologies. This updated volume serves as a general handbook for researchers and students entering the field. This new edition provides updates in fields that have undergone rapid developments, such as Ceramics, Catalysis, Chromatopgraphy, biomaterials, glass science, and optics. It provides a simple, compact resource that can also be used in graduate-level materials science courses.

Design and Processing of Particulate Products Jim Litster 2016-10-31 A unique text providing comprehensive coverage of fundamental particle science, processing and technology. Including quantitative tools, real-world case studies and end-of-chapter problems, it is ideal for students in engineering and applied sciences, as well as for practitioners in a range of industries manufacturing particulate products.

Recent Developments in Forward Osmosis Processes Rodrigo Valladares Linares 2017-05-15 Forward osmosis (FO) is an emerging membrane technology with a range of possible water treatment applications (desalination and wastewater treatment and recovery). Recent Developments in Forward Osmosis Processes provides an overview of applications, advantages, challenges, costs and current knowledge gaps. Commercial technology, hybrid FO systems for both desalination and water recovery applications have shown to have higher capital cost compared to conventional technologies. Nevertheless, due to the demonstrated lower operational costs of hybrid FO systems, the unit cost for each m3 of fresh water produced with the FO system are lower than conventional desalination/water recovery technologies (i.e. ultrafiltration/RO systems). There are key benefits of using FO hybrid systems compared to RO: • chemical storage and feed systems may be reduced for capital, operational and maintenance cost savings, • reduced process piping costs, • more flexible treatment units, • higher overall sustainability of the desalination process, while producing high quality water.

Principles of Powder Technology M. J. Rhodes 1990 Powder processing. Characterizing the single particle. Characterization of powder. mixing and segregation in powders. the storage and flow of powders. Gas fluidization. Pneumatic conveying. Solid-gas separation. Size enlargement. Size reduction. Explosion and fire hazards of powders. health risks of fine powders. Flow of liquid-solid suspensions. Solid-liquid separation.

Solution Models Based on Symmetric and Asymmetric Information Edmundas Kazimieras Zavadskas This Special Issue covers symmetry and asymmetry phenomena occurring in real-life problems. We invited authors to submit their theoretical or experimental research presenting engineering and economic problem solution models dealing with the symmetry or asymmetry of different types of information. The issue gained interest in the research community and received many submissions. After rigorous scientific evaluation by editors and reviewers, nine papers were accepted and published. The authors proposed different solution models as integrated tools to find a balance between the components of sustainable global development, i.e., to find a symmetry axis concerning goals, risks, and constraints to cope with the complicated problems. We hope that a summary of the Special Issue as provided in this editorial will encourage a detailed analysis of the papers.

Powder Sampling and Particle Size Determination Terence Allen 2003 Important new work in rapidly expanding field of powder technology.

Speech & Language Processing Dan Jurafsky 2000-09

Particle Accelerator Physics Helmut Wiedemann 2013-11-11 Particle Accelerator Physics covers the dynamics of relativistic particle beams, basics of particle guidance and focusing, lattice design, characteristics of beam transport systems and circular accelerators. Particle-beam optics is treated in the linear approximation including sextupoles to correct for chromatic aberrations. Perturbations to linear beam dynamics are analyzed in detail and correction measures are discussed, while basic lattice design features and building blocks leading to the design of more complicated beam transport systems and circular accelerators are studied. Characteristics of synchrotron radiation and quantum effects due to the statistical emission of photons on particle trajectories are derived and applied to determine particle-beam parameters. The discussions specifically concentrate on relativistic particle beams and the physics of beam optics in beam transport systems and circular accelerators such as synchrotrons and storage rings. This book forms a broad basis for further, more detailed studies of nonlinear beam dynamics and associated accelerator physics problems, discussed in the subsequent volume.

The Nature of Technology W. Brian Arthur 2009-08-06 The Nature of Technology will change the way you think about this fundamental subject forever. W. Brian Arthur’s many years of thinking and writing about technology have culminated in a unique understanding of his subject. Here he examines the nature of technology itself: what is it and how does it evolve? Giving rare insights into the evolution of specific technologies and a new framework for thinking about others, every sentence points to some further truth and fascination. At a time when we are ever more reliant on technological solutions for the world’s problems, it is extraordinary how little we actually understand the processes that lead to innovation and invention. Until now. This will be a landmark book that will define its subject, and inspire people to think about technology in depth for the very first time.

Handbook of Fluidization and Fluid-Particle Systems Wen-Ching Yang 2003-03-19 This reference details particle characterization, dynamics, manufacturing, handling, and processing for the employment of multiphase reactors, as well as procedures in reactor scale-up and design for applications in the chemical, mineral, petroleum, power, cement and pharmaceuticals industries. The authors discuss flow through fixed beds, elutriati

Autonomous Horizons Greg Zacharias 2019-04-05 Dr. Greg Zacharias, former Chief Scientist of the United States Air Force (2015-18), explores next steps in autonomous systems (AS) development, fielding, and training. Rapid advances in AS development and artificial intelligence (AI) research will change how we think about machines, whether they are individual vehicle platforms or networked enterprises. The payoff will be considerable, affording the US military significant protection for aviators, greater effectiveness in employment, and unlimited opportunities for novel and disruptive concepts of operations. Autonomous Horizons: The Way Forward identifies issues and makes recommendations for the Air Force to take full advantage of this transformational technology.

Chemistry and Technology of Soft Drinks and Fruit Juices Philip R. Ashurst 2008-04-15 Soft drinks and fruit juices are produced in almost every country in the world and their availability is remarkable. From the largest cities to some of the remotest villages, soft drinks are available in a variety of flavours and packaging. The market for these products continues to show a remarkable potential for growth. The variety of products and packaging types continues to expand, and among the more significant developments in recent years has been the increase in diet drinks of very high quality, many of which are based on spring or natural mineral water. This book provides an overview of the chemistry and technology of soft drinks and fruit juices. The original edition has been completely revised and extended, with new chapters on Trends in Beverage Markets, Fruit and Juice Processing, Carbohydrate and Intense Sweeteners, Non-Carbonated Beverages, Carbonated Beverages, and Functional Drinks containing Herbal Extracts. It is directed at graduates in food science, chemistry or microbiology entering production, quality control, new product development or marketing in the beverage industry or in companies supplying ingredients or packaging materials to the beverage industry.

Particle Size Characterization Ajit Jillavenkatesa 2001

Food Powders Enrique Ortega-Rivas 2006-04-04 This useful reference is the first book to address key aspects of food powder technology. It assembles organized and updated information on the physical properties, production, and functionality of food powder, previously unavailable in book form.

Multiparticulate Drug Delivery Ali R. Rajabi-Siahboomi 2017-05-26 Authored by leading experts from academia, users and manufacturers, this book provides an authoritative account of the science and technology involved in multiparticulate drug delivery systems which offer superior clinical and technical advantages over many other specialized approaches in drug delivery. The book will cover market trends, potential benefits and formulation challenges for various types of multiparticulate systems. Drug solubility, dose, chemistry and therapeutic indications as well as excipient suitability coupled with manufacturing methods will be fully covered. Key approaches for taste-masking, delayed release and extended release of multiparticulates systems are of significant interest, especially their in-vivo and in-vitro performance. In addition, the principles of scale-up, QbD, and regulatory aspects of common materials used in this technology will be explained, as well as recent advances in materials and equipment enabling robust, flexible and cost-effective manufacture. Case studies illustrating best practices will also make the book a valuable resource to pharmaceutical scientists in industry and academia.

Handbook of Surface Plasmon Resonance Richard B. M. Scharfoot 2017-05-30 Surface plasmon resonance (SPR) plays a dominant role in real-time interaction sensing of biomolecular binding events, this book provides a total system description including optics, fluidics and sensor surfaces for a wide researcher audience.

Unit Operations of Particulate Solids Enrique Ortega-Rivas 2016-04-19 Suitable for practicing engineers and engineers in training, this book covers the most important operations involving particulate solids. Through clear explanations of theoretical principles and practical laboratory exercises, the text provides an understanding of the behavior of powders and pulverized systems. It also helps readers develop skills for operating, optimizing, and innovating particle processing technologies and machinery in order to carry out industrial operations. The author explores common bulk solids processing operations, including milling, agglomeration, fluidization, mixing, and solid-fluid separation.

Basic Semiconductor Physics Chihiro Hamaguchi 2013-04-17 A detailed description of the basic physics of semiconductors. All the important equations describing the properties of these materials are derived without the help of other textbooks. The reader is assumed to have only a basic command of mathematics and some elementary semiconductor physics. The text covers a wide range of important semiconductor phenomena, from the simple to the advanced.

Introduction to Particle Technology Martin J. Rhodes 2008-06-09 Particle technology is a term used to refer to the science and technology related to the handling and processing of particles and powders. The production of particulate materials, with controlled properties tailored to subsequent processing and applications, is of major interest to a wide range of industries, including chemical and process, food, pharmaceuticals, minerals and metals companies and the handling of particles in gas and liquid solutions is a key technological step in chemical engineering. This textbook provides an excellent introduction to particle technology with worked examples and exercises. Based on feedback from students and practitioners worldwide, it has been newly edited and contains new chapters on slurry transport, colloids and fine particles, size enlargement and the health effects of fine powders. Topics covered include: Characterization (Size Analysis) Processing (Granulation, Fluidization) Particle Formation (Granulation, Size Reduction) Storage and Transport (Hopper Design, Pneumatic Conveying, Standpipes, Slurry Flow) Separation (Filtration, Settling, Cyclones) Safety (Fire and Explosion Hazards, Health Hazards) Engineering the Properties of Particulate Systems (Colloids, Respirable Drugs, Slurry Rheology) This book is essential reading for undergraduate students of chemical engineering on particle technology courses. It is also valuable supplementary reading for students in other branches of engineering, applied chemistry, physics, pharmaceuticals, mineral processing and metallurgy. Practitioners in industries in which powders are handled and processed may find it a useful starting point for gaining an understanding of the behavior of particles and powders. Review of the First Edition taken from High Temperatures - High pressures 1999 31 243 – 251 ".This is a modern textbook that presents clear-cut knowledge. It can be successfully used both for teaching particle technology at universities and for individual study of engineering problems in powder processing."

Microsound Curtis Roads 2001 A comprehensive presentation of the techniques and aesthetics of composition with sound particles.

Nuclear Energy Raymond L. Murray 2013-10-22 This expanded, revised, and updated fourth edition of Nuclear Energy maintains the tradition of providing clear and comprehensive coverage of all aspects of the subject, with emphasis on the explanation of trends and developments. As in earlier editions, the book is divided into three parts that achieve a natural flow of ideas: Basic Concepts, including the fundamentals of energy, particle interactions, fission, and fusion; Nuclear Systems, including accelerators, isotope separators, detectors, and nuclear reactors; and Nuclear Energy and Man, covering the many applications of radionuclides, radiation, and reactors, along with a discussion of wastes and weapons. A minimum of mathematical background is required, but there is ample opportunity to learn characteristic numbers through the illustrative calculations and the exercises. An updated Solution Manual is available to the instructor. A new feature to aid the student is a set of some 50 Computer Exercises, using a diskette of personal computer programs in BASIC and spreadsheet, supplied by the author at a nominal cost. The book is of principal value as an introduction to nuclear science and technology for early college students, but can be of benefit to science teachers and lecturers, nuclear utility trainees and engineers in other fields.

Introduction to Nanoscience Stuart Lindsay 2009-10-22 Nanoscience is not physics, chemistry, engineering or biology. It is all of them, and it is time for a text that integrates the disciplines. This is such a text, aimed at advanced undergraduates and beginning graduate students in the sciences. The consequences of smallness and quantum behaviour are well known and described Richard Feynman's visionary essay 'There's Plenty of Room at the Bottom' (which is reproduced in this book). Another, critical, but thus far neglected, aspect of nanoscience is the complexity of nanostructures. Hundreds, thousands or hundreds of thousands of atoms make up systems that are complex enough to show what is fashionably called 'emergent behaviour'. Quite new phenomena arise from rare configurations of the system. Examples are the Kramer's theory of reactions (Chapter 3), the Marcus theory of electron transfer (Chapter 8), and enzyme catalysis, molecular motors, and fluctuations in gene expression and splicing, all covered in the final Chapter on Nanobiology. The book is divided into three parts. Part I (The Basics) is a self-contained introduction to quantum mechanics, statistical mechanics and chemical kinetics, calling on no more than basic college calculus. A conceptual approach and an array of examples and conceptual problems will allow even those without the mathematical tools to grasp much of what is important. Part II (The Tools) covers microscopy, single molecule manipulation and measurement, nanofabrication and self-assembly. Part III (Applications) covers electrons in nanostructures, molecular electronics, nano-materials and nanobiology. Each chapter starts with a survey of the required basics, but ends by making contact with current research literature.

Fundamentals of Multiphase Flow C. E. Brennen 2005-04-18 Publisher Description

Introduction to Particle Technology Martin J. Rhodes 2013-03-25 Particle technology is a term used to refer to the science and technology related to the handling and processing of particles and powders. The production of particulate materials, with controlled properties tailored to subsequent processing and applications, is of major interest to a wide range of industries, including chemical and process, food, pharmaceuticals, minerals and metals companies and the handling of particles in gas and liquid solutions is a key technological step in chemical engineering. This textbook provides an excellent introduction to particle technology with worked examples and exercises. Based on feedback from students and practitioners worldwide, it has been newly edited and contains new chapters on slurry transport, colloids and fine particles, size enlargement and the health effects of fine powders. Topics covered include: Characterization (Size Analysis) Processing (Granulation, Fluidization) Particle Formation (Granulation, Size Reduction) Storage and Transport (Hopper Design, Pneumatic Conveying, Standpipes, Slurry Flow) Separation (Filtration, Settling, Cyclones) Safety (Fire and Explosion Hazards, Health Hazards) Engineering the Properties of Particulate Systems (Colloids, Respirable Drugs, Slurry Rheology) This book is essential reading for undergraduate students of chemical engineering on particle technology courses. It is also valuable supplementary reading for students in other branches of engineering, applied chemistry, physics, pharmaceuticals, mineral processing and metallurgy. Practitioners in industries in which powders are handled and processed may find it a useful starting point for gaining an understanding of the behavior of particles and powders. Review of the First Edition taken from High Temperatures - High pressures 1999 31 243 – 251 ".This is a modern textbook that presents clear-cut knowledge. It can be successfully used both for teaching particle technology at universities and for individual study of engineering problems in powder processing."

Neurobiology of Chemical Communication Carla Mucignat-Caretta 2014-02-14 Intraspecific communication involves the activation of chemoreceptors and subsequent activation of different central areas that coordinate the responses of the entire organism—ranging from behavioral modification to modulation of hormones release. Animals emit intraspecific chemical signals, often referred to as pheromones, to advertise their presence to members of the same species and to regulate interactions aimed at establishing and regulating social and reproductive bonds. In the last two decades, scientists have developed a greater understanding of the neural processing of these chemical signals. Neurobiology of Chemical Communication explores the role of the chemical senses in mediating intraspecific communication. Providing an up-to-date outline of the most recent advances in the field, it presents data from laboratory and wild species, ranging from invertebrates to vertebrates, from insects to humans. The book examines the structure, anatomy, electrophysiology, and molecular biology of pheromones. It discusses how chemical signals work on different mammalian and non-mammalian species and includes chapters on insects, *Drosophila*, honey bees, amphibians, mice, tigers, and cattle. It also explores the controversial topic of human pheromones. An essential reference for students and researchers in the field of pheromones, this is also an ideal resource for those working on behavioral phenotyping of animal models and persons interested in the biology/ecology of wild and domestic species.

Nuclear and Particle Physics Brian R. Martin 2011-08-31 An accessible introduction to nuclear and particle physics with equal coverage of both topics, this text covers all the standard topics in particle and nuclear physics thoroughly and provides a few extras, including chapters on experimental methods; applications of nuclear physics including fission, fusion and biomedical applications; and unsolved problems for the future. It includes basic concepts and theory combined with current and future applications. An excellent resource for physics and astronomy undergraduates in higher-level courses, this text also serves well as a general reference for graduate studies.

The Restoration of Engravings, Drawings, Books, and Other Works on Paper Max Schweidler 2006 Ever since its original publication in Germany in 1938, Max Schweidler's *Die Instandsetzung von Kupferstichen, Zeichnungen, Buchern usw.* has been recognized as a seminal modern text on the conservation and restoration of works on paper. This volume, based on the authoritative revised German edition of 1950, makes Schweidler's work available in English for the first time, in a meticulously edited and annotated scholarly edition. An extensively illustrated appendix presents case studies of eleven Old Master prints that were treated using the techniques Schweidler discusses. *Fast Food Nation* Eric Schlosser 2012 Explores the homogenization of American culture and the impact of the fast food industry on modern-day health, economy, politics, popular culture, entertainment, and food production.

Polymeric Materials Marta Fernández-García 2019-05-28 This book collects the articles published in the Special Issue "Polymeric Materials: Surfaces, Interfaces and Bioapplications". It shows the advances in polymeric materials, which have tremendous applications in agricultural films, food packaging, dental restoration, antimicrobial systems, and tissue engineering. These polymeric materials are presented as films, coatings, particles, fibers, hydrogels, or networks. The potential to modify and modulate their surfaces or their content by different techniques, such as click chemistry, ozonation, breath figures, wrinkle formation, or electrospray, are also explained, taking into account the relationship between the structure and properties in the final application. Moreover, new trends in the development of such materials are presented, using more environmental friendly and safe methods, which, at the same time, have a high impact on our society.