This unique book provides comprehensive overview of the field of immunology related to engineered nanomaterials used for biomedical applications. It contains literature review, case studies and protocols. The book can serve as a source of information about nanoimmunotoxicology for both junior scientists and experts in the field. The authors have more than 10 years of experience with preclinical characterization of engineered nanomaterials used for medical applications, and they share their experience with the readers. In addition, the international team of experts in the field provides the opinion and share the expertise on individual topics related to nanoparticle physicochemical characterization, hematocompatibility, and effects on the immune cell function. The second edition contains updated chapters from the first edition plus new chapters covering areas of tumor immunology, nanoparticle interaction with the lymphatic system, mathematical modeling of protein corona, utilization of nanoparticles for the delivery of antiviral drugs, extensive analysis of nanoparticle anti-inflammatory and immunosuppressive properties, novel ways of protecting therapeutic nanoparticles from the immune recognition, as well as case studies regarding nanoparticle sterilization, complement activation, protein binding and immunotherapy of cancer. The second edition comes in 3 volumes. Volume 1 is focused on nanoparticle characterization, sterility and sterilization, pyrogen contamination and depyrigenation. It also contains overview of regulatory guidelines, protocols for in vitro and in vivo immunotoxicity studies, and correlation between in vitro and in vivo immunoassays. Volume 2 is focused on hematocompatibility of nanomaterials. It provides comprehensive review and protocols for investigating nanoparticle interaction with erythrocytes, platelets, endothelial cells, plasma coagulation factors and plasma proteins forming so called 'corona' around nanoparticles. Volume 3 is dedicated to nanoparticle interaction with and effects on the immune cell function. It also contains examples of nanoparticle use for delivery of antiviral and anti-inflammatory drugs.

With its focus on concrete methods and recent advances in applying nanotechnology to develop new drug therapies and medical diagnostics, this book provides an overall picture of the field, from the fundamentals of nanopharmacy with the characterisation and manufacturing methods to the role of nanoparticles and substances. Actual examples of utilization include drug development issues, translation to the clinic, market prospects, and industrial commercialization aspects. The applications described are taken from cancer treatment as well as other major therapeutic areas, such as infectious diseases and dermatology. An in-depth discussion on safety, regulatory, and societal aspects rounds off the book. Written by a top team of editors and authors composed of the leading experts in Europe and the USA who have pioneered the field of nanopharmacy!
Nanotechnologies are among the fastest growing areas of scientific research, and this is expected to have a substantial impact on human health care, especially in biomedical applications and nanomedicine now and in the near future. In the present scenario, nanotechnology is spreading its wings to address the key problems in the field of nanomedicine and human health care by improving diagnosis, prevention, treatment, and tissue engineering. This book provides an in-depth investigation of nanotechnology-based therapy and recent advancements in this field for revolutionizing the treatments for various fatal diseases, including cardiovascular and infectious diseases.

The book covers nanotechnology based approaches for improving the therapeutic efficacy of natural products. It critically explores lipid nanoarchitectonics, inorganic particles and nanoemulsion based tools for delivering them. With its chapters from eminent experts working in this discipline, it is ideal for researchers and professionals working in the area.

Publications Combined - Over 100 Studies In Nanotechnology With Medical, Military And Industrial Applications 2008-2017

Handbook of Immunological Properties of Engineered Nanomaterials

A multidisciplinary approach is increasingly being adapted by the Pharmaceutical industry to tackle several challenges in developing efficacious treatment solutions. The field of Ophthalmology is no less different. Treatise on Ocular Drug Delivery is a unique collection of information put together by various experts in the field. One of the major goals behind this volume is to link clinical information with the current strategies employed in ocular drug delivery. This monograph covers a range of topics on ocular pharmacology. Chapters in the e-book cover several aspects of drug delivery research such as the biochemical background of specific eye diseases, challenges for ocular drug delivery, the role of influx and efflux transporters, novel drug delivery systems, pharmacokinetics, regulatory aspects, and patenting opportunities for researchers. This E-Book would serve as a suitable reference for pharmacy graduates, medical students, professional scientists and ophthalmic clinicians in academic and industrial laboratories.
The Clinical Nanomedicine Handbook discusses the integration of nanotechnology, biology, and medicine from a clinical point of view. The book highlights relevant research and applications by specialty; it examines nanotechnology in depth, and the potential to solve medical problems. It also increases literacy in nanotechnology, and allows for more effective communication and collaboration between disciplines.

Details worldwide developments in nanomedicine
Provides a comprehensive roadmap of the state of nanomedicine in numerous medical specialties
Bridges the gap between basic science research, engineering, nanotechnology, and medicine

Nanotechnology in Medicine
Colloidal Metal Oxide Nanoparticles: Synthesis, Characterization and Applications is a one-stop reference for anyone with an interest in the fundamentals, synthesis and applications of this interesting materials system. The book presents a simple, effective and detailed discussion on colloidal metal oxide nanoparticles. It begins with a general introduction of colloidal metal oxide nanoparticles, then delves into the most relevant synthesis pathways, stabilization procedures, and synthesis and characterization techniques. Final sections discuss promising applications, including bioimaging, biosensing, diagnostic, and energy applications—i.e., solar cells, supercapacitors and environment applications—i.e., the treatment of contaminated soil, water purification and waste remediation.

Provides the most comprehensive resource on the topic, from fundamentals, to synthesis and characterization techniques
Presents key applications, including biomedical, energy, electronic and environmental
Discusses the most relevant techniques for synthesis, patterning and characterization

Nanotechnology in Drug Delivery
A suitable drug delivery system is an essential element in achieving efficient therapeutic responses of drug molecules. With this desirability in mind, the book unites different techniques through which extremely small-sized particles can be utilized as a successful carrier for curing chronic as well as life-threatening diseased conditions. This is a highly informative and prudently organized book, providing scientific insight for readers with an interest in nanotechnology. Beginning with an overview of nanocarriers, the book impetuses on to explore other essential ways through which these carriers can be employed for drug delivery to varieties of administrative routes. This book discusses the functional and significant features of nanotechnology in terms of Lymphatic and other drug targeting deliveries. The book is presenting depth acquaintance for various vesicular and particulate nano-drug delivery carriers, utilized successfully in Pharmaceutical as well as in Cosmeceutical industries along with brief information on their related toxicities. In addition, the work also explores the potential applications of nanocarriers in biotechnology sciences for the prompt and safe delivery of nucleic acid, protein, and peptide-based drugs. An exclusive section in the book illuminates the prominence and competent applicability of nanotechnology in the treatment of oral cancer. The persistence of this book is to provide basic to advanced information for different novel carriers which are under scale-up consideration for the extensive commercialization. The book also includes recent discoveries and the latest patents of such nanocarriers. The cutting-edge evidence of these nanocarriers available in this book is beneficial to students, research scholars, and fellows for promoting their advanced research.

The Era of Nanotechnology
The reader will be introduced to various aspects of the fundamentals of nanotechnology based drug delivery systems and the application of these systems for the delivery of small molecules, proteins, peptides, oligonucleotides and genes. How these systems overcome challenges offered by biological barriers to drug absorption and drug targeting will also be described.

Medical Nanotechnology and Nanomedicine
Design of Nanostructures for Versatile Therapeutic Applications focuses on antimicrobial, antioxidant and nutraceutical applications of nanostructured materials. Many books discuss
Where To Download Reviews Nanotechnology In Ocular Drug Delivery

Nano-Biomaterials For Ophthalmic Drug Delivery

Considering the fluid nature of nano breakthroughs—and the delicate balance between benefits and consequences as they apply to medicine—readers at all levels require a practical, understandable base of information about these developments to take greatest advantage of them. Medical Nanotechnology and Nanomedicine meets that need by introducing non-experts to nanomedicine and its evolving organizational infrastructure. This practical reference investigates the impact of nanotechnology on applications in medicine and biomedical sciences, and the broader societal and economic effects. Eschewing technological details, it focuses on enhancing awareness of the business, regulatory, and administrative aspects of medical applications. It gives readers a critical, balanced, and realistic evaluation of existing nanomedicine developments and future prospects—an ideal foundation upon which to plan and make decisions. Covers the use of nanotechnology in medical applications including imaging, diagnosis and monitoring, drug delivery systems, surgery, tissue regeneration, and prosthetics Part of the Perspectives in Nanotechnology series—which contains broader coverage of the societal implications of nanotechnology—this book can be used as a standalone reference. Organized by historical perspective, current status, and future prospects, this powerful book: Explores background, definitions and terms, and recent trends and forces in nanomedicine Surveys the landscape of nanomedicine in government, academia, and the private sector Reviews projected future directions, capabilities, sustainability, and equity of nanomedicine, and choices to be made regarding its use Includes graphical illustrations, references, and keywords to reinforce concepts and aid further research In its assessment of alternative and sometimes conflicting concepts proposed for the application of nanotechnology to medicine, this book surveys major initiatives and the work of leading labs and innovators. It uses informative examples and case summaries to illustrate proven accomplishments and imagined possibilities in research and development.

Nano-Biomaterials For Ophthalmic Drug Delivery

Assesses the most recently developed nanostructures that have potential antimicrobial properties, explaining their novel mechanical aspects Shows how nanoantibiotics can be used to more effectively treat disease Provides a cogent summary of recent developments in nanoantimicrobial discovery, allowing readers to quickly familiarize themselves with the topic

Nanobiotechnology in Bioformulations

A comprehensive guide to the current research, major challenges, and future prospects of controlled drug delivery systems Controlled drug delivery has the potential to significantly improve therapeutic outcomes, increase clinical benefits, and enhance the safety of drugs in a wide range of diseases and health conditions. Fundamentals of Drug Delivery provides comprehensive and up-to-date coverage of the essential principles and processes of modern controlled drug delivery systems. Featuring contributions by respected researchers, clinicians, and pharmaceutical industry professionals, this edited volume reviews the latest research in the field and addresses the many issues central to the development of effective, controlled drug delivery. Divided in three parts, the book begins by introducing the concept of drug delivery and discussing both challenges and opportunities within the rapidly evolving field. The second section presents an in-depth critique of the common administration routes for controlled drug delivery, including delivery through skin, the lungs, and via ocular, nasal, and otic routes. The concluding section summarizes the current state of the field and examines specific issues in drug delivery and advanced delivery technologies, such as the use of nanotechnology in dermal drug delivery and advanced drug delivery systems for biologics. This authoritative resource: Covers each main stage of the drug development process, including selecting pharmaceutical candidates and evaluating their physicochemical characteristics Describes the role and application of mathematical modelling and the influence of drug transporters in pharmacokinetics and drug disposition Details the physiology and barriers to drug delivery for each administration route Presents a historical perspective and a look into the possible future of advanced drug delivery systems Explores nanotechnology and cell-mediated drug delivery, including applications for targeted delivery and toxicological and safety issues Includes comprehensive references and links to the primary literature Edited by a team of of internationally-recognized experts, Fundamentals of Drug Delivery is essential reading for researchers, industrial scientists, and advanced students in all areas of drug delivery including pharmaceutics, pharmaceutical sciences, biomedical engineering, polymer and materials science, and chemical and biochemical engineering.

Where To Download Reviews Nanotechnology In Ocular Drug Delivery

The book presents a broad overview of the field of nanotechnology, focusing on key essentials, and delivers examples of applications in various fields. It offers a basic to advanced level understanding of the developments in the field of nanotechnology and nanostructured materials, which will provide a valuable resource for all involved in the study related to nanotechnology. The book looks at nanotechnology applications in a variety of fields, including health care, pharmaceutical sciences and drug delivery, nanomedicine, renewable energy, and more. The chapters study of the emerging, developing, and growing nanotechnology field by highlighting the key fundamentals and application of advanced nanotechnology in real-life applications. The book offers some realistic examples and the latest research in the field of nanoscience and nanotechnology. With chapters written by internationally recognized experts that describe topics from a basic to advanced level, this volume will provide a comprehensive overview of the field of nanotechnology.
Where To Download Reviews Nanotechnology In Ocular Drug Delivery

This consolidated reference book addresses the various aspects of nano biomaterials used in ophthalmic drug delivery, including their characterization, interactions with ophthalmic system and applications in treatments of the ophthalmic diseases and disorders. In the last decade, a significant growth in polymer sciences, nanotechnology and biotechnology has resulted in the development of new nano- and bioengineered nano-bio-materials. These are extensively explored as drug delivery carriers as well as for implantable devices and scaffolds. At the interface between nanomaterials and biological systems, the organic and synthetic worlds merge into a new science concerned with the safe use of nanotechnology and nano material design for biological applications. For this field to evolve, there is a need to understand the dynamic forces and molecular components that shape these interactions. While it is impossible to describe with certainty all the bio physicochemical interactions at play at the interface, we are at a point where the pockets of assembled knowledge are providing a conceptual framework to guide this exploration, and review the impact on future product development. The book is intended as a valuable resource for academics and pharmaceutical scientists working in the field of polymers, polymers materials for drug delivery, drug delivery systems and ophthalmic drug delivery systems, in addition to medical and health care professionals in these areas.

In-Vitro and In-Vivo Tools in Drug Delivery Research for Optimum Clinical Outcomes

The Year Book of Ophthalmology brings you abstracts of articles carefully selected from more than 500 journals worldwide. Expert commentaries evaluate the clinical importance of each article and discuss its application to your practice. The summary is accompanied by brief discussion of the relevance (or irrelevance) of the paper to practicing ophthalmologists. It is what you need to know! There's no faster or easier way to stay informed!

Ocular Drug Delivery: Advances, Challenges and Applications

An Introduction to Green Nanotechnology, Volume 28, provides students, scientists and chemical engineers with an overview of several types of nanostructures, discusses the synthesis and characterization of nanostructures, and provides applications of nanotechnology in daily life. The book offers a foundation to green nanotechnology by explaining why green nanotechnology is important. Covers biological sources in green nanotechnology, antioxidants, green nanostructures, mechanism, synthesis and characterization. The book ends with an evaluation of the risks of nanotechnology in human life and future perspectives. Introduces novel sources of plants having a high potential to be used as bio media to synthesize nanostructures Provides phytochemical properties and antioxidant potential, and their effects on stability, morphology and size of green nanostructures Includes a medicinal and technological comparison of green synthesized nanostructures to nano-products from non-green methods Uses accessible language, avoiding complex concepts of mathematics, biology and chemistry

Nanotechnology in Health Care

This book summarizes the synthesis, properties, characterization, and application of viral and antiviral nanomaterials by using interdisciplinary subjects ranging from materials science to biomedical science. Viral and Antiviral Nanomaterials: Synthesis, Properties, Characterization, and Application highlights attainments in utilizing nanomaterials as powerful tools for the treatment of viral infections in plants, animals, and humans. It reviews the adopted strategies for designing viral and antiviral nanomaterials for medical applications, including cancer therapy and drug delivery. It also explains the different kinds of antiviral nanosized structures, their chemistries, and the attributes that enable them to be suitable targets for nanotherapeutics. The contributors have prepared the content in a comprehensive manner for readers to use their research findings to improve the healthcare of all living beings.

FEATURES
Reviews the novel tools for synthesis and characterization of nanomaterials as viral and antiviral agents Explores the different applications of currently available nanomaterials for the treatment of viral infections Investigates the role of antiviral nanodrugs in human and plant systems Addresses the activity of nanostructures in drug-delivery systems for cancer treatment Allows readers from various backgrounds to access the advanced research and practices across traditional frontiers Discusses viral nanomaterials as the viable future of antiviral drugs and nanovaccines in animals and humans

This authoritative book is of exceptional relevance to postgraduate scholars, researchers, and scientists interested in nanomedicine, biomedical science, materials science, biopharmaceutical technology, microbiology, and virology to improve virus- and cancer-based therapeutic tools for animal and human welfare.
Colloids in Drug Delivery

New Developments for Nanosensors in Pharmaceutical Analysis presents an overview of developments in nanosensor usage in pharmaceutical analysis, thereby helping pharmaceutical companies attain reliable, precise, and accurate analysis of pharmaceuticals. This book presents very simple, precise, sensitive, selective, fast, and relatively inexpensive methods for pretreatment, prior to analysis. These methods may be considered for further application in clinical studies and assays. The book includes the manufacturing of sensors for pharmaceutical analysis at nano- or smaller scales, and gives simple and relatable designs for the fabrication of sensors. Twelve chapters cover an introduction to the topic, immobilization techniques, mechanism effect of nanomaterials on structure, optical nanosensors for pharmaceutical detection, chemical nanosensors in pharmaceutical analysis, noble metal nanoparticles in electrochemical analysis of drugs, photo-electrochemical nanosensors for drug analysis, molecularly imprinted polymer based nanosensors for pharmaceutical analysis, nanomaterials for drug delivery systems, nanomaterials enriched nucleic acid-based biosensors, nanosensors in biomarker detection, and nanomaterials-based enzyme biosensors for electrochemical applications. Presents nanosensor types, synthesis, immobilizations and applications in different fields Gives simple repeatable designs for the fabrication of sensors for pharmaceutical analysis Details how to carry out sensitive analysis of pharmaceuticals using nanosensors Describes how to synthesize and immobilize nanosensors, and how nanosensors can be applied in drug assay Proposes innovative ways to optimize pharmaceutical processes with nanosensors

Sustainable Agriculture Reviews 44

Colloidal drug delivery systems present a range of therapeutic benefits in the treatment of a number of challenging conditions, allowing researchers to cross barriers that have previously prevented efficient treatment while offering improved and more targeted absorption. Summarizing recent research in the field, Colloids in Drug Delivery assembles

Colloidal Metal Oxide Nanoparticles

Nanotechnology in Modern Animal Biotechnology: Concepts and Applications discusses the advancement of nanotechnologies in almost every field, ranging from materials science, to food, forensic, agriculture and life sciences, including biotechnology and medicine. Nanotechnology is already being harnessed to address many of the key problems in animal biotechnology, with future applications covering animal biotechnology (e.g. animal nutrition, health, disease diagnosis, and drug delivery). This book provides the tools, ideas and techniques of nanoscale principles to investigate, understand and transform biological systems. Nanotechnology provides the ability to manipulate materials at atomic and molecular levels and also arrange atom-by-atom on a scale of ∼1–100 nm to create, new materials and devices with fundamentally new functions and properties arising due to their small scale. Details the basics of nanotechnology, along with comprehensive information on the state-of-the-art and future perspectives of nanotechnology in biosensors Provides recent perspectives and the challenges of nanomedicine Provides new insights into the role nanomaterials can play in curing various diseases Includes the most recent diagnostic methods, such as nanosensors

Viral and Antiviral Nanomaterials

Nanotechnology, Volume 46, the latest release in the Methods in Microbiology series, contains review articles on the application of nanotechnology in various fields of microbiology,
Micro- and Nanotechnologies-Based Product Development

This book provides an overview of the recent advances in micro- and nanotechnologies and their applications in product development. It covers topics such as biotechnology, nanotechnology, and microbiology, and discusses the development of new products and technologies in various industries. The book is intended for researchers, students, and practitioners who are interested in understanding the latest developments in this field.

Nanobiotechnology in Agro-Environment

This book presents timely discussion and coverage on the use of microbial formulations, which range from powdered or charcoal-based to solution and secondary metabolite-based. With the recent shift of chemical fertilizers and pesticides to organic agriculture, the employment of microbes that perform significant beneficial functions for plants has been highlighted.

Bioformulations covers the constraints associated with large-scale development and commercialization of bioinoculant formations. Furthermore, exclusive emphasis is be placed on next-to-existing technology, as the bioformulation would explicitly target the particular pathogen without harming the natural microbiome of the ecosystem. Nanobiotechnology in agro-environment is a rapidly growing field, and this book provides a comprehensive overview of the latest developments and applications.

Bioformulation Strategies: The Use of Microorganisms in Agriculture and Aquaculture

This book covers the development of bioformulations for use in agriculture and aquaculture. It discusses the use of microorganisms for a variety of purposes, including biocontrol, growth promotion, and nutrient recycling. The book provides a detailed overview of the scientific principles underlying bioformulation strategies and includes numerous case studies to illustrate the practical application of these techniques.

Applications of Nanotechnology in Food Industry

This book provides a comprehensive overview of the use of nanotechnology in the food industry. It covers topics such as food production, processing, packaging, and preservation, as well as the use of nanotechnology to enhance flavor and color, nutrient delivery, and bioavailability, and to improve food safety and in quality management. The book is intended for researchers, practitioners, and students who are interested in understanding the latest developments in this field.

Drug Delivery Systems in Ophthalmology

This book provides a comprehensive review of the development and application of drug delivery systems in ophthalmology. It covers a wide range of topics, including the use of nanoparticles in ocular drug delivery systems, the development of currently marketed devices, and recent trends in the topical delivery of drugs to the posterior of the eye. The book is intended for researchers, practitioners, and students who are interested in understanding the latest developments in this field.

Nanotechnology Applications in the Food Industry

This book is a comprehensive reference book containing exhaustive information on nanotechnology and the scope of its applications in the food industry. It covers topics such as nanosized materials, nanobiotechnology, and the use of nanosized particles in food production. The book is intended for researchers, practitioners, and students who are interested in understanding the latest developments in this field.

Year Book of Ophthalmology 2015

This book presents current information on ocular disease and the state of the art in ocular drug delivery. It covers a wide range of topics, including the development of currently marketed devices, recent trends in the topical delivery of drugs to the posterior of the eye, and the use of nanoparticles in ocular drug delivery systems. The book is intended for researchers, practitioners, and students who are interested in understanding the latest developments in this field.
Where To Download Reviews Nanotechnology In Ocular Drug Delivery

Pharmaceutical Nanotechnology

Nanotechnology enable medicine (nanomedicine) is expected to be the next advent of the health care market, facilitating efficient, safe, and personalized therapies. But there has been limited success penetrating the market. Despite numerous publications demonstrating the utility of nanoparticle platforms for drug delivery, analyses on commercial viability show there are several challenges to be addressed. This thesis work addresses some of these challenges, with a focus on ocular drug delivery. Topical administration is the most popular route of ocular drug delivery. However, only 5% of the administered dose is bioavailable for action at the target site, while the remaining 95% is removed via blinking, nasolacrimal drainage, or degradation. Frequent administrations of concentrated solutions are required to overcome these barriers to maintain therapeutic concentrations. Self-assembled mucoadhesive polymer nanoparticles (MNPs) composed of a poly(lactic acid) core, and dextran corona functionalized with phenylboronic acid have been successful in addressing some of these challenges for ocular drug delivery. This work is intended to optimize the commercial viability of these nanoparticle drug carriers. A review of the current state of nanomedicine for ocular drug delivery aimed at improving retention on the ocular surface is presented. The manufacturing process of the mucoadhesive block copolymer is investigated and optimized resulting in significant time and cost savings. In addition, a method for modification of carbohydrates without the use of organic solvents based on solid-state chemistry is described. Strategies to improve the shelf-life of the colloid suspension are explored and optimized for the MNPs with pharmacopoeia guidelines. A novel method of utilizing freeze-drying to drive self-assembly of polymer micelles is demonstrated. Further steps to improve the commercial viability and success of the MNP platform are discussed in the conclusions.

Applied Pharmaceutical Science and Microbiology

Intelligent Nanomaterials for Drug Delivery Applications discusses intelligent nanomaterials with a particular focus on commercial and premarket tools. The book looks at the applications of intelligent nanomaterials within the field of medicine and discusses their future role. This includes the use of intelligent nanomaterials for drugs used in cardiovascular and cancer treatments and examines the promising market of nanoparticles for biomedical and biosensing applications.

Nanotechnology

The Handbook of Immunological Properties of Engineered Nanomaterials provides a comprehensive overview of the current literature, methodologies, and translational and regulatory considerations in the field of nanoimmunotoxicology. The main subject is the immunological properties of engineered nanomaterials. Focus areas include interactions between engineered nanomaterials and red blood cells, platelets, endothelial cells, professional phagocytes, T cells, B cells, dendritic cells, complement and coagulation systems, and plasma proteins, with discussions on nanoparticle sterility and sterilization. Each chapter presents a broad literature review of the given focus area, describes protocols and resources available to support research in the individual focus areas, highlights challenges, and outlines unanswered questions and future directions. In addition, the Handbook includes an overview of and serves a guide to the physicochemical characterization of engineered nanomaterials essential to conducting meaningful immunological studies of nanoparticles. Regulations related to immunotoxicity testing of materials prior to their translation into the clinic are also reviewed. The Handbook is written by top experts in the field of nanomedicine, nanotechnology, and translational bionanotechnology, representing academia, government, industry, and consulting organizations, and regulatory agencies. The Handbook is designed to serve as a textbook for students, a practical guide for research laboratories, and an informational resource for scientific consultants, reviewers, and policy makers. It is written such that both experts and beginners will find the information highly useful and applicable.
Polymers are one of the most fascinating materials of the present era finding their applications in almost every aspect of life. Polymers are either directly available in nature or are chemically synthesized and used depending upon the targeted applications. Advances in polymer science and the introduction of new polymers have resulted in the significant development of polymers with unique properties. Different kinds of polymers have been and will be one of the key in several applications in many of the advanced pharmaceutical research being carried out over the globe. This 4-part set of books contains precisely referenced chapters, emphasizing different kinds of polymers with basic fundamentals and practicality for application in diverse pharmaceutical technologies. The volumes aim at explaining basics of polymers based materials from different resources and their chemistry along with practical applications which present a future direction in the pharmaceutical industry. Each volume offers deep insight into the subject being treated. Volume 1: Structure and Chemistry Volume 2: Processing and Applications Volume 3: Biodegradable Polymers Volume 4: Bioactive and Compatible Synthetic/Hybrid Polymers

Nanocarriers: Drug Delivery System

As a paradigm for the future, micro-scale technology seeks to fuse revolutionary concepts in science and engineering and then translate it into reality. Nanotechnology is an interdisciplinary field that aims to connect what is seen with the naked eye and what is unseen on the molecular level. The Handbook of Research on Diverse Applications of Nanotechnology in Biomedicine, Chemistry, and Engineering examines the strengths and future potential of micro-scale technologies in a variety of industries. Highlighting the benefits, shortcomings, and emerging perspectives in the application of nano-scale technologies, this book is a comprehensive reference source for synthetic chemists, engineers, graduate students, and researchers with an interest in the multidisciplinary applications, as well as the ongoing research in the field.

Optimization of Mucoadhesive Polymer Micelles for Drug Delivery and Ophthalmic Formulations

A comprehensive guide to the current research, major challenges, and future prospects of controlled drug delivery systems. Controlled drug delivery has the potential to significantly improve therapeutic outcomes, increase clinical benefits, and enhance the safety of drugs in a wide range of diseases and health conditions. Fundamentals of Drug Delivery provides comprehensive and up-to-date coverage of the essential principles and processes of modern controlled drug delivery systems. Featuring contributions by respected researchers, clinicians, and pharmaceutical industry professionals, this edited volume reviews the latest research in the field and addresses the many issues central to the development of effective, controlled drug delivery. Divided into three parts, the book begins by introducing the concept of drug delivery and discussing both challenges and opportunities within the rapidly evolving field. The second section presents an in-depth critique of the common administration routes for controlled drug delivery, including delivery through skin, the lungs, and via ocular, nasal, and otic routes. The concluding section summarizes the current state of the field and examines specific issues in drug delivery and advanced delivery technologies, such as the use of nanotechnology in dermal drug delivery and advanced drug delivery systems for biologics. This authoritative resource: Covers each main stage of the drug development process, including selecting pharmaceutical candidates and evaluating their physicochemical characteristics Describes the role and application of mathematical modelling and the influence of drug transporters in pharmacokinetics and drug disposition Details the physiology and barriers to drug delivery for each administration route Presents a historical perspective and a look into the possible future of advanced drug delivery systems Explores nanotechnology and cell-mediated drug delivery, including applications for targeted delivery and toxicological and safety issues Includes comprehensive references and links to the primary literature Edited by a team of internationally-recognized experts, Fundamentals of Drug Delivery is essential reading for researchers, industrial scientists, and advanced students in all areas of drug delivery including pharmaceutics, pharmaceutical sciences, biomedical engineering, polymer and materials science, and chemical and biochemical engineering.

New Developments in Nanosensors for Pharmaceutical Analysis

Nanotechnology in biology and medicine: Research advancements & future perspectives is focused to provide an interdisciplinary, integrative overview on the developments made in nanotechnology till date along with the ongoing trends and the future prospects. It presents the basics, fundamental results/current applications and latest achievements on nanobiotechnological researches worldwide scientific era. One of the major goals of this book is to highlight the multifaceted issues on or surrounding of nanotechnology on the basis of
Where To Download Reviews Nanotechnology In Ocular Drug Delivery

Nanotechnology Applications in the Food Industry

Discover thorough insights into the toxicology of nanomaterials used in medicine In Nanotechnology in Medicine: Toxicity and Safety, an expert team of nanotechnologists delivers a robust and up-to-date review of current and future applications of nanotechnology in medicine with a special focus on neurodegenerative diseases, cancer, diagnostics, nano-nutraceuticals, dermatology, and gene therapy. The editors offer resources that address nanomaterial safety, which tends to be the greatest hurdle to obtaining the benefits of nanomedicine in healthcare. The book is a one-stop resource for recent and comprehensive information on the toxicological and safety aspects of nanotechnology used in human health and medicine. It provides readers with cutting-edge techniques for delivering therapeutic agents into targeted cellular compartments, cells, tissues, and organs by using nanoparticulate carriers. The book also offers methodological considerations for toxicity, safety, and risk assessment. Nanotechnology in Medicine: Toxicity and Safety also provides readers with: A thorough introduction to the nanotoxicological aspects of nanomedicine, including translational nanomedicine and nanomedicine personalization Comprehensive introductions to nanoparticle toxicity and safety, including selenium nanoparticles and metallic nanoparticles Practical discussions of nanotoxicology and drug delivery, including gene delivery using nanocarriers and the use of nanomaterials for ocular delivery applications In-depth examinations of nanotechnology ethics and the regulatory framework of nanotechnology and medicine Perfect for researchers, post-doctoral candidates, and specialists in the fields of nanotechnology, nanomaterials, and nanocarriers, Nanotechnology in Medicine: Toxicity and Safety will also prove to be an indispensable part of the libraries of nanoengineering, nanomedicine, and biopharmaceutical professionals and nanobiotechnologists.

Handbook of Polymers for Pharmaceutical Technologies, Structure and Chemistry

Biomaterials in Translational Medicine delivers timely and detailed information on the latest advances in biomaterials and their role and impact in translational medicine. Key topics addressed include the properties and functions of these materials and how they might be applied for clinical diagnosis and treatment. Particular emphasis is placed on basic fundamentals, biomaterial formulations, design principles, fabrication techniques and transitioning bench-to-bed clinical applications. The book is an essential reference resource for researchers, clinicians, materials scientists, engineers and anyone involved in the future development of innovative biomaterials that drive advancement in translational medicine. Systematically introduces the fundamental principles, rationales and methodologies of creating or improving biomaterials in the context of translational medicine Includes the translational or commercialization status of these new biomaterials Provides the reader with enough background knowledge for a fundamental grip of the difficulties and technicalities of using biomaterial translational medicine Directs the reader on how to find other up-to-date sources (i.e. peer reviewed journals) in the field of translational medicine and biomaterials

Nanotechnology in Modern Animal Biotechnology

This book covers the essentials of drug delivery research and provides a unique forum for scientific experimental methods that are exclusively focused by the in-vitro, ex-vivo, and in-vivo methodologies of drug delivery research and felicitates translational research. The book includes recent and novel approaches in evaluation methods of transdermal, nasal, ocular, oral and intraoral, gastro-retentive, colon-targeted, and brain-targeted drug delivery systems. Providing up to date and comprehensive information, this text is invaluable to students, teachers, scientists, and others employed in the field of drug delivery.
Where To Download Reviews Nanotechnology In Ocular Drug Delivery

The eye is a computerized system that has been designed for self-defense, and these defense mechanisms create challenges in administration of medications to the eye. Therefore, ocular drug delivery has been a major challenge to drug delivery researchers. There are on-going studies, in search of treatment especially for the diseases affecting the posterior segment of the eye. This book gives an overview of the background of ocular drug delivery and is unique for pharmacists, medical practitioners, students and drug delivery researchers.