Bioadhesive Drug Delivery Systems
Edith Mathiowitz 1999-07-13 This invaluable reference presents a comprehensive review of the basic methods for characterizing bioadhesive materials and improving vehicle targeting and uptake-offering possibilities for reformulating existing compounds to create new pharmaceuticals at lower development costs. Evaluates the unique carrier characteristics of bioadhesive polymers and their power to enhance localization of delivered agents, local bioavailability, and drug absorption and transport! Written by over 50 international experts and reflecting broad knowledge of both traditional bioadhesive strategies and novel clinical applications, Bioadhesive Drug Delivery Systems discusses mechanical and chemical bonding, polymer-mucus interactions, the effect of surface energy in bioadhesion, polymer hydration, and mucin rheology analyzes biochemical properties of mucus and glycoproteins, cell adhesion molecules, and cellular interaction with two- and three-dimensional surfaces covers microbalances and magnetic force transducers, atomic force microscopy, direct measurements of molecular level adhesions, and methods to measure cell-cell interactions examines bioadhesive carriers, diffusion or penetration enhancers, and lectin-targeted vehicles describes vaginal, nasal, buccal, ocular, and transdermal drug delivery reviews bioadhesive interactions with the mucosal tissues of the eye and mouth, and those in the respiratory, urinary, and gastrointestinal tracts explores issues of product development, clinical testing, and production and more! Amply referenced with over 1400 bibliographic citations, and illustrated with more than 300 drawings, photographs, tables, and display equations, Bioadhesive Drug Delivery Systems serves as a sound basis for innovation in bioadhesive systems and an excellent introduction to the subject. This unique reference is ideal for pharmaceutical scientists and technologists; chemical, polymer, and plastics engineers; biochemists; physical, surface, and colloid chemists; biologists; and upper-level undergraduate and graduate students in these disciplines.

Bioadhesives in Drug Delivery
K. L. Mittal 2020-05-12 Understanding the phenomenon of bioadhesion i.e. its theories or mechanism(s) are of critical importance in developing optimum bioadhesive polymers (used in bioadhesives). Such bioadhesive polymers are the key for exhibiting the process of bioadhesion, controlled/sustained release of drugs, and drug targeting. The use of bioadhesives restricts the delivery system to the site of interest and thus offers a useful and efficient technique for targeting a drug to the desired location for a prolonged duration. This book addresses the various relevant aspects of bioadhesives in drug delivery in an easily accessible and unified manner; The book containing 12 chapters written by eminent researchers from many parts of the globe is divided into three parts: Part 1: Fundamental Aspects; Part 2: Bioadhesive Formulations; Part 3: Drug Delivery Applications. The topics covered include: Theories and mechanisms of bioadhesion; bioadhesive polymers for drug delivery applications; methods for characterization of bioadhesiveness of drug delivery systems; bioadhesive films and drug delivery applications; bioadhesive nanoparticles; and bioadhesive hydrogels and applications.

Mucoadhesive Materials and Drug Delivery Systems
Vitaliy V. Khutoryanskiy 2014-06-12 Mucoadhesion defined as attachment of synthetic or natural materials to mucosal tissues has been widely exploited in pharmaceutical forms. This multi-author book provides an up-to-date account of current research on mucoadhesive materials and drug delivery systems. The introductory section describes the structure and physiology of various mucosal surfaces (oral, nasal, ocular, gastrointestinal and vaginal mucosa). This is followed by chapters on the various methods used to study mucoadhesion and to characterise mucoadhesive properties of various dosage forms. The final section will summarise information on traditional and novel types of mucoadhesive materials, such as chitosans, thiomers, and liposome-based formulations. This book is unique as there is currently no modern book considering mucoadhesion - all other existing books on the topic are either narrowly focused or more than 10 years old. Furthermore, each contributor offers specialist perspectives from a variety of global locations in both industrial and academic research centres.

Biodrug Delivery Systems
Strategies to Modify the Drug Release from Pharmaceutical Systems—Marcos Luciano Bruschi 2015-06-16 Since the earliest dosage forms to modern drug delivery systems, came a great development and growth of knowledge with respect to drug delivery. Strategies to Modify the Drug Release from Pharmaceutical Systems will address principles, systems, applications and advances in the field. It will be principally a textbook and a reference source of strategies to modify the drug release. Moreover, the characterization, mathematical and physicochemical models, applications and the systems will be discussed. Addressing the principles, systems, applications and advances in the field of drug delivery Highlights the mathematical and physicochemical principles related to strategies Discusses drug release and its possible modifications

Drug Delivery—Monika Schäfer-Korting 2010-03-10 In the view of most experts pharmacology is on drugs, targets, and actions. In the context the drug as a rule is seen as an active pharmaceutical ingredient and not as a complex mixture of chemical entities of a well-defined structure. Today, we are becoming more and more aware of the fact that delivery of the active compound to the target site is a key. This present volume gives a topical overview on various modern approaches to drug targeting covering today’s options for specific carrier systems allowing successful drug treatment at various sites of the body difficult to address and allowing to increase the benefit-risk ratio to the optimum possible.

Fundamentals of Drug Delivery—Heather A. Benson 2011-10-26 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. The Fundamentals of Drug Delivery offers 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 or 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, pharmacological sciences, biomedical engineering, polymer and materials science, and chemical and biochemical engineering.

Engineering Polymer Systems for Improved Drug Delivery—Rebecca A. Badar 2014-01-17 Polymers have played a critical role in the rational design and application of drug delivery systems that increase the efficacy and reduce the toxicity of new and conventional therapeutics. Beginning with an introduction to the fundamentals of drug delivery, Engineering Polymer Systems for Improved Drug Delivery explores traditional drug delivery techniques as well as emerging advanced drug delivery techniques. By reviewing many types of polymeric drug delivery systems, and including key points, worked examples and homework problems, this book will serve as a guide to specialists and non-specialists as well as a graduate level text for drug delivery courses.

Modeling and Control of Drug Delivery Systems—Ahmad Taher Azar 2021-02-06 Modeling and Control of Drug Delivery Systems provides comprehensive coverage of various drug delivery and targeting systems and their state-of-the-art related works, ranging from theory to real-world deployment and future perspectives. Various drug delivery and targeting systems have been developed to minimize drug degradation and adverse effect and increase drug bioavailability. Site-specific drug delivery may be either an active and/or passive process. Improving delivery techniques that minimize toxicity and increase efficacy offer significant potential benefits to patients and open up new markets for pharmaceutical companies. This book will attract many researchers working in DDS field as it provides an essential source of information for pharmaceutical scientists and pharmacologists working in academia as well as in the industry. In addition, it has useful information for pharmaceutical physicians and scientists in many disciplines involved in designing DDS, such as chemical engineering, biomedical engineering, protein engineering, gene therapy. Presents some of the latest innovations of approaches to DDS from dynamic controlled drug delivery, modeling, system analysis, optimization, control and monitoring Provides a unique, recent and comprehensive reference on DDS with the focus on cutting-edge nanomedicine and t-trend research trends in the area. Covers the most recent works, in particular, the challenging areas related to modeling and control techniques applied to DDS

Biomedical and Biomimetics—Havaeza B. Peled 2015-03-02 Bioadhesion is often defined as the state in which two materials, at least one of which is biological in nature, are held together for extended periods of time by interfacial forces. It is an area of active multidisciplinary research, where engineers, scientists—including chemists, physicists, biologists, and medical experts—materials’ producers, and manufacturers combine their knowledge. From the practical point of view, bioadhesive systems have been used for several years to work with nanotechnology in drug delivery. Highlights crucial topics, such as biopharmaceutical and toxicity issues, quality by design, drug targeting, and more.

Bioadhesion and Biomimetics—Havaeza B. Peled 2015-03-02 Bioadhesion is often defined as the state in which two materials, at least one of which is biological in nature, are held together for extended periods of time by interfacial forces. It is an area of active multidisciplinary research, where engineers, scientists—including chemists, physicists, biologists, and medical experts—materials’ producers, and manufacturers combine their knowledge. From the practical point of view, bioadhesive systems have been used for several years to work with nanotechnology in drug delivery. Highlights crucial topics, such as biopharmaceutical and toxicity issues, quality by design, drug targeting, and more.

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Recent Advances in Novel Drug Carrier Systems—Ali Demir Sezer 2012-10-31 This contribution book collects reviews and original articles from eminent experts working in the interdisciplinary arena of novel drug delivery systems and their uses. From their direct and recent experience, the readers can achieve a wide vision on the new and ongoing potentialities of different drug delivery systems. Since the advent of analytical technologies and capabilities to measure particle sizes in nanometer ranges, there has been tremendous interest in the use of nanoparticles for more efficient methods of drug delivery. On the other hand, this reference discusses advances in the design, optimization, and adaptation of gene delivery

Applications of Polymers in Drug Delivery-Ambikananand Misra 2020-10-02 Applications of Polymers in Drug Delivery, Second Edition, provides a comprehensive resource for anyone looking to understand how polymeric materials can be applied to current, new, and emerging drug delivery applications. Polymers play a crucial role in modulating drug delivery and have been fundamental in the successful development of many novel drug delivery systems. This book describes the development of polymeric systems, ranging from conventional dosage forms to the most recent smart systems. Regulatory and intellectual property aspects as well as the clinical applicability of polymeric drug delivery systems are also discussed. The chapters are organized by specific delivery route, offering methodical and detailed coverage throughout. This second edition has been thoroughly revised to include the latest developments in the field. This is an essential book for researchers, scientists, and advanced students, in polymer science, drug delivery, pharmacology/pharmaceuticals, materials science, tissue engineering, nanomedicine, chemistry, and biology. In industry, this book supports scientists, R&D, and other professionals, working on polymers for drug delivery applications. Explains how polymers can be prepared and utilized for all major drug delivery routes. Presents the latest advances, including drug targeting, polymeric micelles and polyplexes, and the delivery of biologics and nucleic acid therapeutics. Includes appendices with in-depth information on pharmaceutical properties of polymers and regulatory aspects.

Adhesion in Pharmaceutical, Biomedical, and Dental Fields-K. L. Mittal 2017-06-15 The phenomenon of adhesion is of cardinal importance in the pharmaceutical, biomedical and dental fields. A few eclectic examples will suffice to underscore the importance/relevance of adhesion in these three areas. For example, the adhesion between powdered solids is of crucial importance in tablet manufacture. The interaction between bioadhesives (e.g., orthodontic implants) and bodily components influences the performance of such devices, and there is burgeoning research activity in modifying the surfaces of such implements to render them compatible with bodily components. In the field of dentistry, the modern trend is to shift from retaining of restorative materials by mechanical interlocking to adhesive bonding. This unique book addresses all these three areas in an easily accessible single-source. The book contains 15 chapters written by leading experts and is divided into four parts: General Topics; Adhesion in Pharmaceutical Field; Adhesion in Biomedical Field; and Adhesion in Dental Field. The topics covered include: - Theories or mechanisms of adhesion. - Wettability of powders. - Role of surface free energy in tablet strength and powder flow behavior. - Mucoadhesive polymers for drug delivery systems. - Transdermal patches. - Skin adhesion in in vivo systems. - Factors affecting microbial adhesion. - Biofouling and ways to mitigate it. - Adhesion of coatings on surgical tools and bio-implants. - Adhesion in fabrication of microarrays in clinical diagnostics. - Antibacterial polymers for dental adhesives and composites. - Evolution of dental adhesives. - Testing of dental adhesives joints.

Design of Controlled Release Drug Delivery Systems-Xiaoling Li 2005-11-24 The goal of every drug delivery system is to deliver the precise amount of a drug at a pre-programmed rate to the desired location in order to achieve the drug level necessary for the treatment. An essential guide for biomedical engineers and pharmaceutical designers, this resource combines physicochemical principles with physiological processes to facilitate the design of systems that will deliver medication at the time and place it is most needed.

Nanofibres in Drug Delivery-Gareth R. Williams 2018-09-17 In recent years there has been an explosion of interest in the production of nanoscale fibres for drug delivery and tissue engineering. Nanofibres in Drug Delivery aims to outline to new researchers in the field the utility of nanofibres in drug delivery, and to explain to them how to prepare fibres in the laboratory. The book begins with a brief introduction to nanofibres, the definition of the term, and the characteristics and properties of nanofibres. The chapter then introduces the key techniques that can be used for fibre production and explains briefly the theory behind them. They discuss the experimental implementation of fibre production, starting with the simplest possible set-up and then moving on to consider more complex arrangements. As they do so, they offer advice from their own experience of fibre production, and use examples from current literature to show how each particular type of fibre can be applied to drug delivery. They also consider how fibre production could be moved beyond the research laboratory into industry, discussing regulatory and scale-up aspects.

Fundamentals and Applications of Controlled Release Drug Delivery-Juergen Siepmann 2011-12-15 This book approaches the subject from a mechanistic perspective that pitches the language at a level that is understandable to those entering the field and who are not familiar with its common phrases or complex terms. It provides a simple encapsulation of concepts and expands on them. In each chapter the basic concept is explained as simply and clearly as possible without a great deal of detail, then in subsequent sections additional material, exceptions to the general rule, examples, etc., is introduced and built up. Such material was generously supplemented with diagrams; conceptually elegant line diagrams in two or three colors. The artwork was well thought out and able to condense the scientific principles into a novel and visually exciting form. The diagrams encourage browsing or draw the reader to salient points. In addition, the technique of highlighting key concepts in a separate box is used throughout each chapter.

Mucosal Drug Delivery System-Avinash Hosmani 2013 In the recent days, the technology of Mucoadhesive drug delivery system has gained so much attention from the researchers in the field of formulation development. The drug delivery system enables the formulator to bring the drug in the close proximity to the mucus membrane with enhanced contact time and contact area. Thus the technology has been successful to bring out benefits like bio-availability enhancement along with the extended release. This book gives the idea about the basic fundamentals of Mucosal Adhesion systems. From the presented work, one may get information about the properties of mucoadhesive polymers. One may study the formulation of different mucoadhesive drug delivery systems like tablet, suspension and microsphere.

Inhaler Devices-Polina Prokopovich 2013-04-23 Given their direct impact on the health and quality of life for millions, inhalers represent a major turning point in the history of modern medicine. Inhaler devices: Fundamentals, design and drug delivery provides readers with an introduction to the fundamentals of inhaler technology, with a comprehensive discussion of the history of inhalers as well as a discussion on current research and development. Part one discusses the fundamentals and development of inhaler devices as well as drug formulations for inhalers. The treatment of asthma is also discussed. Part two reviews recent developments in drug formulation and nanotechnology for inhaler devices, emerging inhaler technology and possible future trends. Inhaler devices: Fundamentals, design and drug delivery is an essential design guide for good industrial practice, and will be an invaluable resource for those researching and treating conditions such as asthma; and those developing and manufacturing inhalation devices. Introduces the fundamentals of inhaler technology Discusses the history of inhalers as well as current research and development as well as possible future trends. Considers the development of inhaler devices, drug formulations and discusses the treatment of asthma.

Designing Hydrogels for Controlled Drug Delivery-Sonia Trombino 2020-02-14 The aim of this book is to provide an analysis of the main characteristics and applications of hydrogels. Hydrogels are frequently used for manufacturing contact lenses, hygiene products, tissue engineering scaffolds, drug delivery systems, and wound dressings. These materials are useful in everyday life, so publicizing them in both academic and pharmaceutical fields is essential.

Pharmaceutical Manufacturing Handbook-Shayne Cox Gad 2008-03-21 This handbook features contributions from a team of expert authors representing the many disciplines within science, engineering, and technology that are involved in pharmaceutical manufacturing. They provide the information and tools you need to design, implement, operate, and troubleshoot a pharmaceutical manufacturing system. The editor, with more than thirty years’ experience working with pharmaceutical and biotechnology companies, carefully reviewed all the chapters to ensure that each one is thorough, accurate, and clear.

Drug Delivery Systems-Kewal K. Jain 2008-03-07 In this concise and systematic book, a team of experts select the most important, cutting-edge technologies used in drug delivery systems. They take into account significant drugs, new technologies such as nanoparticles, and therapeutic applications. The chapters present step-by-step laboratory protocols following the highly successful Methods in Molecular BiologyTM series format, offering readily reproducible results vital for pharmaceutical physicians and scientists.
Advanced Biomaterials in Biomedical Engineering and Drug Delivery Systems - Naoya Ogata 2012-12-06 First of all, I would like to share the great pleasure of the successful five-day symposium with everyone participant in the 5th Iketani Conference which was held in Kagoshima from April15 (Tuesday) to 22 (Saturday), 1995. Outstanding speakers enthusiastically presented their up-to-the-minute results. Relatively little time was allotted for each presentation to ensure asmuch time as possible for intensive discussions on the particular topics that had just been p—sented: I was delighted to see that the lectures were of high quality, and the discourse was lively, exciting, and productive in a congenial atmosphere. We also had 92 papers in the poster session, in which young (and relatively young) scientists made every effort to present the novel results of their research in advanced biomaterials and drug delivery systems (DDS). I believe some of the research is most promising and will become noteworthy in the twenty-first century. It was a privilege for me to deliver a lecture at the special session of the symposium. In my introductory remarks, I pointed out five key terms in multifaceted biomaterials research: materials design, concept or methodology, devices, properties demanded, and fundamentals. I am confident that innovative progress in device manufacturing for end-use, e.g., artificial organs, vascular grafts, and DDS, can be brought about only through properly designed advanced materials that exhibit the desired functionality at the interface with any living body.

Polymers in Drug Delivery Systems - Glen S. Kwon 2005-04-12 Emphasizing four major classes of polymers for drug delivery-water-soluble polymers, hydrogels, biodegradable polymers, and polymer assemblies—this reference surveys efforts to adapt, modify, and tailor polymers for challenging molecules such as poorly water-soluble compounds, peptides/proteins, and plasmid DNA.

Gibaldi's Drug Delivery Systems in Pharmaceutical Care - Mary Lee 2007 It is important to make therapeutics a critical component of teaching about dosage forms and to make dosage forms and drug delivery systems an integral part of therapeutics. This book will be the first to focus on the therapeutic impact of drug dosage forms. Tying together concepts of traditional pharmaceutics with therapeutics, Drug Delivery Systems in Pharmaceutical Care demonstrates how the modern clinical pharmacist can integrate knowledge in pharmaceutical sciences and therapeutics with appreciation of patient needs and nuances to advise on preferable and optimal product choices. Each chapter represents a collaboration of a clinical pharmacist practitioner and a pharmaceutical scientist. This unique perspective takes the science of dosage form design and helps translate the theory into the pragmatic. Special Features: Case studies and problems to help students get a better understanding of concepts. Well-organized chapters with outlines and objectives. Summary tables and helpful figures, along with reasonable compilations of original references. Final sections with 'Learning Points' that reinforce essential material. Foreword by William J. Justko, PhD, Professor and Chair, University of Buffalo, Department of Pharmaceutical Sciences.

Oral Mucosal Drug Delivery - Michael J. Rathbone 1996-05-23 Offering comprehensive coverage of the latest developments concerning every important aspect of drug delivery to or via the oral cavity, this state-of-the-art reference examines the problems, limitations, and advantages of the oral cavity as a site for drug delivery, as well as the design, fabrication, optimization, and assessment of a wide range of local and systemic oral mucosal drug delivery systems.

Oral Mucosal Drug Delivery and Therapy - Michael J. Rathbone 2015-03-13 This volume provides a comprehensive overview of the current issues facing scientists working on delivering drugs locally and systemically via the membranes that line the mouth. The book describes the anatomical and physiological challenges of this route for drug delivery and how they impact the design of oral mucosal drug delivery systems. It also provides a detailed description of current oral mucosal drug delivery technologies that overcome these challenges alongside research, development, and assessment methods. With contributions by experts, it offers an in-depth evaluation of the major issues associated with this route of administration, namely the retention of the drug/product at the site of administration and increasing drug permeability through the oral mucosa. The book provides insights into the in vitro and in vivo methods available to assess drug permeability and retention, offers solutions on how to improve the permeation of the drugs through the oral mucosa, and explores approaches to prolong drug/product retention at the site of administration. It also indicates future directions in research and product development. Oral Mucosal Drug Delivery and Therapy is a key resource for those wishing to extend their knowledge of this field.

Mucosal Delivery of Biopharmaceuticals - José das Neves 2014-02-03 Biopharmaceutical medicines, the newest class of therapeutics, are quite heterogeneous and include a range of molecules such as proteins, peptides, vaccines, and nucleic acids, with use in virtually all therapeutic fields (e.g., cancer and infectious diseases, vaccination, metabolic dysfunctions) and diagnostics. This edited book gives a concise and up-to-date overview of the biological features justifying the use of different human mucosa as delivery routes for biopharmaceuticals, the technological strategies that have been followed so far regarding the optimization of mucosal potentialities as well as the challenges that arise with the advent of new biopharmaceutical drugs and alternative means of administration. Following a brief introduction, the first section addresses general aspects of the biology of mucosal tissues and their unique aspects toward beneficial or deleterious interaction with biopharmaceuticals and their delivery systems. The second part reviews the different delivery strategies that have recently been investigated for different mucosal sites. The third section describes the development and clinical applications of drug delivery systems and products enclosing biopharmaceuticals for mucosal delivery, with a focus on the most successful case studies of recent years. The last section briefly centers on relevant aspects of the regulatory, toxicological and market issues of mucosal delivery of biopharmaceuticals. Scientists and researchers in the fields of drug delivery, material science, biomedical science and bioengineering as well as professionals, regulators and policy makers in the pharmaceutical, biotechnology and healthcare industries will find in this book an important compendium of fundamental concepts and practical tools for their daily research and activities.

Application of Nanotechnology in Drug Delivery - Ali Demir Sezer 2014-07-25 This book collects reviews and original articles from eminent experts working in the interdisciplinary arena of nanotechnology use in drug delivery. From their direct and recent experience, the readers can achieve a wide vision on the new and ongoing potentialities of nanotechnology application of drug delivery. Since the advent of analytical techniques and capabilities to measure particle sizes in nanometer ranges, there has been tremendous interest in the use of nanoparticles for more efficient methods of drug delivery. On the other hand, this reference discusses advances in design, optimization, and adaptation of gene delivery systems for the treatment of cancer, cardiovascular, pulmonary, genetic, and infectious diseases, and considers assessment and review procedures involved in the development of gene-based pharmaceuticals.

Polysaccharides for Drug Delivery and Pharmaceutical Applications - R. H. Marchessault 2006 Cellulose and starch are dry binders for tablets. They are essential for drug formulation and for slow-release to maintain drug concentration in the blood. Unusual excipient uses are described such as protein separation and purification, gene delivery and iron content in human physiology.

Bio-manufactured Nanomaterials - Kausik Pal 2021-06-17 This book is based on the principles, limitations, challenges, improvements and applications of nanotechnology in medical science as described in the literature. It highlights various parameters affecting the synthesis of bio-nanomaterials and exclusive techniques utilized for characterizing the nanostructures for their potential use in biomedical and environmental applications. Moreover, biodegradable synthesis of nanomaterials is regarded as an important tool to reduce the destructive effects associated with the traditional methods of synthesis for nanostructures commonly utilized in laboratory and industry and as well as academic scale of innovative research foundation.

Acrylic Polymers in Healthcare - Boreddy Reddy 2017-11-02 This book on Acrylic Polymers for Healthcare presents eight chapters organised into three parts by providing new ideas in design, synthesis and a detailed study of new acrylic materials in healthcare applications. Part I represents Chapters 1, 2, 3 and 4 focussing on tuning up of technologies for making dental dentures with better properties. Part II comprises Chapters 5 and 6 dealing with synthetic polymer-based nanoparticles as intelligent drug delivery systems and bismuth nanoparticles for improved green light emission. Part III represents Chapters 7 and 8 describing the aspects of mitigation of acrylamide in foods in the context of an African perspective and the importance of acrylate-based polymeric adsorbents so that the reader can get an idea about the various types and forms of polymeric materials used for the removal of heavy metals from water.

Colloids in Drug Delivery - Monzer Fanun 2014-04-19 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

Smart Drug Delivery System - Ali Demir Sezer 2016-02-10 This contribution book collects reviews and original articles from eminent experts working in the interdisciplinary arena of novel delivery systems and their uses. From their direct and recent experience, the readers can achieve a wide vision on the new and ongoing potentials of different smart drug delivery systems. Since the advent of analytical techniques and capabilities to measure particle sizes in nanometer ranges, there has been tremendous interest in the use of nanoparticles for more efficient methods of drug delivery. On the other hand, this reference discusses advances in the design, optimization, and adaptation of gene delivery systems for the treatment of cancer, cardiovascular, diabetic, genetic, and infectious diseases, and considers assessment and review procedures involved in the development of gene-based pharmaceuticals.


Ocular Drug Delivery: Advances, Challenges and Applications - Richard T. Addo 2016-11-16 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 ongoing 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.

Modified-Release Drug Delivery Technology - Michael J. Rathbone 2002-11-07 Describing formulation challenges and their solutions in the design, development, and commercialization of modified-release drugs delivery systems, this book contains eighty papers that review recent developments in design and manufacturing techniques. It includes detailed descriptions of extended release drug products for the oral, nasal, ophthalmic, pulmonary, vaginal, dermal and transdermal pathways. With the exception of the final section addressing regulatory issues, each section covers a particular route for drug delivery and opens with an overview of the anatomical, physiological, and pharmaceutical basics of each route before moving on to cover specific technologies.

Targeting Chronic Inflammatory Lung Diseases Using Advanced Drug Delivery Systems - Kamal Dua 2020-08-04 Targeting Chronic Inflammatory Lung Diseases Using Advanced Drug Delivery Systems explores the development of novel therapeutics and diagnostics to improve pulmonary disease management, looking down to the nanoscale level for an efficient system of targeting and managing respiratory disease. The book examines numerous nanoparticle-based drug systems such as nanocrystals, dendrimers, polymeric micelles, protein-based, carbon nanotube, and liposomes that can offer advantages over traditional drug delivery systems. Starting with a brief introduction on different types of nanoparticles in respiratory disease conditions, the book then focuses on current trends in disease pathology that use different in vitro and in vivo models. The comprehensive resource is designed for those new to the field and to specialized scientists and researchers involved in pulmonary research and drug development. Explores recent perspectives and challenges regarding the management and diagnosis of chronic respiratory diseases Provides insights into how advanced drug delivery systems can be effectively formulated and delivered for the management of various pulmonary diseases Includes the most recent information on diagnostic methods and treatment strategies using controlled drug delivery systems (including nanotechnology)