

CONTROLLED  
DRUG RELEASE  
OF ORAL DOSAGE  
FORMS

JEAN-MAURICE VERGNAUD



# [EPUB] Controlled Drug Release Of Oral Dosage Forms (Ellis Horwood Series In Water And Wastewater Technology)

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**Controlled Drug Release Of Oral Dosage Forms**-Jean-Maurice Vergnaud 1993-07-31 Numerical analysis of matter transfer is an area that pharmacists find difficult, but which is a technique frequently used in preparing controlled drug release and oral dosage forms. This book provides clear and straightforward information enabling the reader to carry out numerical analysis of matter transfer - a vital process when looking at the formulation of oral dosage forms with controlled drug release. The drug is dispersed in a polymeric matrix either biodegradable or not, the basis of which is the transfer of the liquid and the drug through dosage form. Information on this diffusion is found either through mathematical treatment when the problem is simple, or through numerical analysis for more complex problems. Professor Vergnaud demonstrates and clarifies these, modelling the process of drug delivery by using numerical analysis and computerization. A simulation of the process is provided, together with a determination of the effects of all parameters, and the author uses both mathematical and numerical models to predict the preparation of new dosage forms able to fulfil specific conditions.

**Oral Controlled Release Formulation Design and Drug Delivery**-Hong Wen 2011-01-14 This book describes the theories, applications, and challenges for different oral controlled release formulations. This book differs from most in its focus on oral controlled release formulation design and process development. It also covers the related areas like preformulation, biopharmaceutics, in vitro-in vivo correlations (IVIVC), quality by design (QbD), and regulatory issues.

**Controlled Release in Oral Drug Delivery**-Clive G. Wilson 2011-09-22 Controlled Release in Oral Drug Delivery provides focus on specific topics, complementing other books in the initial CRS series. Each chapter sets the context for the inventions described and describe the latitude that the inventions allow. In order to provide some similar look to each chapter, the coverage includes the historical overview, candidate drugs, factors influencing design and development, formulation and manufacturing and delivery system design. This volume was written along three main sections: the relevant anatomy and physiology, a discussion on candidates for oral drug delivery and the major three groups of controlled release systems: diffusion control (swelling and inert matrices); environmental control (pH sensitive coatings, time control, enzymatic control, pressure control) and finally lipidic systems.

**Nanotechnology for Oral Drug Delivery**-João Pedro Martins 2020-07-30 Nanotechnology for Oral Drug Delivery: From Concept to Applications discusses the current challenges of oral drug delivery, broadly revising the different physicochemical barriers faced by nanotechnology-based oral drug delivery systems, and highlighting the challenges of improving intestinal permeability and drug absorption. Oral delivery is the most widely used form of drug administration due to ease of ingestion, cost effectiveness, and versatility, by allowing for the accommodation of different types of drugs, having the highest patient compliance. In this book, a comprehensive overview of the most promising and up-to-date engineered and surface functionalized drug carrier systems, as well as opportunities for the development of novel and robust delivery platforms for oral drug administration are discussed. The relevance of controlling the physicochemical properties of the developed particle formulations, from size and shape to drug release profile are broadly reviewed. Advances in both in vitro and in vivo scenarios are discussed, focusing on the possibilities to study the biological-material interface. The industrial perspective on the production of nanotechnology-based oral drug delivery systems is also covered. Nanotechnology for Oral Drug Delivery: From Concept to Applications is essential reading for researchers, professors, advanced students and industry professionals working in the development, manufacturing and/or commercialization of nanotechnology-based systems for oral drug delivery, targeted drug delivery, controlled drug release, materials science and biomaterials, in vitro and in vivo testing of potential oral drug delivery technologies. Highlights the relevance of oral drug delivery in the clinical setting Covers the most recent advances in the field of nanotechnology for oral drug delivery Provides the scientific community with data that can facilitate and guide their research

**Handbook of Pharmaceutical Controlled Release Technology**-Donald L. Wise 2000-08-24 The Handbook of Pharmaceutical Controlled Release Technology reviews the design, fabrication, methodology, administration, and classifications of various drug delivery systems, including matrices, and membrane controlled reservoir, bioerodible, and pendant chain systems. Contains cutting-edge research on the controlled delivery of biomolecules! Discussing the advantages and limitations of controlled release systems, the Handbook of Pharmaceutical Controlled Release Technology covers oral, transdermal, parenteral, and implantable delivery of drugs discusses modification methods to achieve desired release kinetics highlights constraints of system design for practical clinical application analyzes diffusion equations and mathematical modeling considers environmental acceptance and tissue compatibility of biopolymeric systems for biologically active agents evaluates polymers as drug delivery carriers describes peptide, protein, micro-, and nanoparticulate release systems examines the cost, comfort, disease control, side effects, and patient compliance of numerous delivery systems and devices and more!

**Modeling and Control of Drug Delivery Systems**-Ahmad Taher Azar 2021-02-15 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 developing 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 technologies and the latest research trends in the area Covers the most recent works, in particular, the challenging areas related to modeling and control techniques applied to DDS

**Biomaterials And Bioengineering Handbook**-Donald L. Wise 2000-03-30 A report on progress in the development of materials used in or on the human body, ranging from biopolymers used in controlled-release drug delivery systems and prosthetic devices to metals used in bone repair and plastics used in absorbable mechanisms such as sutures.

**Controlled Drug Delivery Systems**-Emmanuel C. Opara 2020 "This book will describe current research on drug delivery systems that encompass four broad categories, namely: routes of delivery, delivery vehicles, payload, and targeting strategies"--Provided by publisher.

**Controlled Drug Delivery**-M A Mateescu 2014-12-09 In complex macromolecules, minor modifications can generate major changes, due to self-assembling capacities of macromolecular or supramolecular networks. Controlled Drug Delivery highlights how the multifunctionality of several materials can be achieved and valorized for pharmaceutical and biopharmaceutical applications. Topics covered in this comprehensive book include: the concept of self-assembling; starch and derivatives as pharmaceutical excipients; and chitosan and derivatives as biomaterials and as pharmaceutical excipients. Later chapters discuss polyelectrolyte complexes as excipients for oral administration; and natural semi-synthetic and synthetic materials. Closing chapters cover protein-protein associative interactions and their involvement in bioformulations; self-assembling materials, implants and xenografts; and provide conclusions and perspectives. Offers novel perspectives of a new concept: how minor alterations can induce major self-stabilization by cumulative forces exerted at short and long distances Gives

guidance on how to approach modifications of biopolymers for drug delivery systems and materials for implants Describes structure-properties relationships in proposed excipients, drug delivery systems and biomedical materials

**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.

**Oral Controlled Drug Delivery System - Formulation Design and Delivery**-Debjit Bhowmik 2018

**Hydrophilic Matrix Tablets for Oral Controlled Release**-Peter Timmins 2014-10-11 This detailed volume addresses key issues and subtle nuances involved in developing hydrophilic matrix tablets as an approach to oral controlled release. It brings together information from more than five decades of research and development on hydrophilic matrix tablets and provides perspective on contemporary issues. Twelve comprehensive chapters explore a variety of topics including polymers (hypromellose, natural polysaccharides and polyethylene oxide) and their utilization in hydrophilic matrices, critical interactions impacting tablet performance, in vitro physical and imaging techniques, and microenvironmental pH control and mixed polymer approaches, among others. In one collective volume, Hydrophilic Matrix Tablets for Oral Controlled Release provides a single source of current knowledge, including sections of previously unpublished data. It is an important resource for industrial and academic scientists investigating and developing these oral controlled release formulations.

**Focal Controlled Drug Delivery**-Abraham J. Domb 2014-02-17 The concept of focal controlled drug delivery has been applied for treating illnesses that are localized to a certain tissue or organ. These delivery systems are applied directly to the diseased site and deliver a desired dose for an extended time period while minimizing systemic distribution of toxic drug. Controlled drug delivery systems have been focused on oral extended release formulations and on systemic delivery of small drugs and peptides. Despite the upsurge of interest in focal targeted drug delivery, there is currently no single reference text on the subject. By comparison, there are numerous authored and edited books on oral, systemic and transdermal drug delivery or books on biodegradable polymers as drug carriers. Thus, the aim of Focal Drug Delivery is to bring together leading experts and researchers in the field to provide an authoritative account of the essential pharmaceutical, technological, physiological and biological sciences underpinning the topic. In addition, the book will review advances in treatment options for diseases localized at a certain tissue or organ.

**Treatise on Controlled Drug Delivery**-Agis F. Kydonieus 2017-10-02 An introductory but detailed treatise which includes some 1,000 references and solved examples and end-of-chapter problems, making it useful to both students and practitioners. The pharmacokinetics, pharmacodynamics, and biological and biopharmaceutical parameters pertinent to each route of administra

**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.

**Dosage Form Design Considerations**- 2018-07-28 Dosage Form Design Parameters, Volume I, examines the history and current state of the field within the pharmaceutical sciences, presenting key developments. Content includes drug development issues, the scale up of formulations, regulatory issues, intellectual property, solid state properties and polymorphism. Written by experts in the field, this volume in the Advances in Pharmaceutical Product Development and Research series deepens our understanding of dosage form design parameters. Chapters delve into a particular aspect of this fundamental field, covering principles, methodologies and the technologies employed by pharmaceutical scientists. In addition, the book contains a comprehensive examination suitable for researchers and advanced students working in pharmaceuticals, cosmetics, biotechnology and related industries. Examines the history and recent developments in drug dosage forms for pharmaceutical sciences Focuses on physicochemical aspects, preformulation solid state properties and polymorphism Contains extensive references for further discovery and learning that are appropriate for advanced undergraduates, graduate students and those interested in drug dosage design

**Recent Advances in Drug Delivery Systems**-James M. Anderson 2012-12-06 The evident rapid expansion of scientific work and intense interest in both experimental and clinical aspects of new drug delivery systems provided strong motivation for planning this symposium. In designing the program, speakers were identified for their particular expertise in a wide range of topics such as dermal delivery systems, pro-drugs, oral prolonged release, rate-controlled drug delivery, the pharmacokinetics of drug release systems, the synthesis of polymeric drug carriers and the refinement of drug delivery pumps. Because of the considerable involvement of diverse scientists from laboratories around the world where investigations relevant to the topic are now being pursued, a deliberate effort was made to invite international leaders in the field to share their knowledge and experimental outcomes. Thus, plenary papers and panel discussions were offered by organic chemists, bioengineers, pathologists, material scientists, physical chemists, and pharmacokineticists from academic and industrial laboratories in some dozen countries. This book which records the presentations offered at the symposium covers a broad array of topics ranging from general overviews of the physicochemical concepts and analytical methodology which underpin the refinement of drug delivery systems and the tissue responses associated with the use of such systems through detailed discussions of a variety of current approaches employed in the development of new systems.

**Cellular Transplantation**-Craig Halberstadt 2011-10-10 There have been tremendous strides in cellular transplantation in recent years, leading to accepted practice for the treatment of certain diseases, and use for many others in trial phases. The long history of cellular transplantation, or the transfer of cells from one organism or region of the body to another, has been revolutionized by advances in stem cell research, as well as developments in gene therapy. Cellular Transplants: From Lab to Clinic provides a thorough foundation of the basic science underpinning this exciting field, expert overviews of the state-of-the-art, and detailed description of clinical success stories to date, as well as insights into the road ahead. As highlighted by this timely and authoritative survey, scale-up technologies and whole organ transplantation are among the hurdles representing the next frontier. The contents are organized into four main sections, with the first covering basic biology, including transplant immunology, the use of immunosuppressive drugs, stem cell biology, and the development of donor animals for transplantation. The next part looks at peripheral and reconstructive applications, followed by a section devoted to transplantation for diseases of the central nervous system. The last part presents efforts to address the key challenges ahead, such as identifying novel transplantable cells and integrating biomaterials and nanotechnology with cell matrices. Provides detailed description of clinical trials in cell transplantation Review of current therapeutic approaches Coverage of the broad range of diseases addressed by cell therapeutics Discussion of stem cell biology and its role in transplantation

**Drug Targeting and Stimuli Sensitive Drug Delivery Systems**-Alexandru Mihai Grumezescu 2018-05-21 Drug Targeting and Stimuli Sensitive Drug Delivery Systems covers recent advances in the area of stimuli sensitive drug delivery systems, providing an up-to-date overview of the physical, chemical, biological and multimulti-responsive nanosystems. In addition, the book presents an analysis of clinical status for different types of nanoplatforms. Written by an internationally diverse group of researchers, it is an important reference resource for both biomaterials scientists and those working in the pharmaceutical industry who are looking to help create more effective drug delivery systems. Shows how the use of nanomaterials can help target a drug to specific tissues and cells Explores the development of stimuli-responsive drug delivery systems Includes case studies to showcase how stimuli responsive nanosystems are used in a variety of therapies, including camptothecin delivery, diabetes and cancer therapy

**Medical Applications of Controlled Release**-Robert S. Langer 2019-06-04 First Published in 1984, this book offers a full, comprehensive guide into drug administration. Carefully compiled and filled with a vast repertoire of notes, pictures, and references this book serves as a useful reference for Students of Medicine, and other practitioners in their respective fields.

**Stimuli-responsive Drug Delivery Systems**-Amit Singh 2018-07-09 The increased understanding of molecular aspects associated with chronic diseases, such as cancer and the role of tumor microenvironment, has led to the identification of endogenous and exogenous stimuli that can be exploited to devise "stimuli-responsive" materials for site-specific drug delivery applications. This book provides a comprehensive account on the design, materials chemistry, and application aspects behind these novel stimuli-responsive materials. Setting the scene, the editors open with a chapter addressing the need for smart materials in delivery applications for therapy, imaging and disease diagnosis. The following chapter describes the key physical and chemical aspects of smart materials, from lipids to polymers to hybrid materials, providing the reader with a springboard to delve into the more application oriented chapters that follow. With in-depth coverage of key drug delivery systems such as pH-responsive, temperature responsive, enzyme-responsive and light responsive systems, this book provides a rigorous foundation to the field. A perfect resource for graduate students and newcomers, the closing chapter on regulatory and commercialization challenges also makes the book ideal for those wanting to take the next step towards clinical translation.

**Biological Activities and Application of Marine Polysaccharides**-Emad Shalaby 2017-01-11 Marine organisms have been under research for the last decades as a source for different active compounds with various biological activities and application in agriculture, pharmacy, medicine, environment, and industries. Marine polysaccharides from these active compounds are used as antibacterial, antiviral, antioxidant, anti-inflammation, bioremediations, etc. During the last three decades, several important factors that control the production of phytoplankton polysaccharides have been identified such as chemical concentrations, temperature, light, etc. The current book includes 14 chapters contributed by experts around the world; the chapters are categorized into three sections: Marine Polysaccharides and Agriculture, Marine Polysaccharides and Biological Activities, and Marine Polysaccharides and Industries.

**Applied Biopharmaceutics and Pharmacokinetics**-Leon Shargel 1993 The third edition of this introductory text covers the factors which influence the release of the drug from the drug product and how the body handles the drug. A stronger focus has been placed on the basics with clear explanations and illustrated examples. There is also more information on statistics and population pharmacokinetics and new chapters on drug distribution, computer applications, enzyme kinetics and pharmacokinetics models.

**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. In 11 authoritative chapters, the book affords 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.

**Cosmetic and Pharmaceutical Applications of Polymers**-T. Cheng 2012-12-06 Polymers continue to show almost amazing versatility. We have always known that polymers could be used for trinkets, toys and dishes. Now, however, we are no longer surprised to encounter these adaptable materials in almost every place we look. We find them in our cars, tools, electronic devices, building materials, etc. The use of polymeric materials in medicine is also well documented in previous books by one of the Editors (Gebelein) and by others. Likewise, the use of polymeric materials in pharmaceutical applications, especially in controlled release systems, is also well established. Nevertheless, the use of these ubiquitous chemicals is far less obvious in the field of cosmetics, although modern cosmetic preparations rely heavily on polymers and this trend is certain to increase. This book brings together much of the basic information on polymers in cosmetics and compares this usage with similar applications in pharmaceutical and medical applications. Cosmetics, like medicine and pharmacy, dates back to antiquity. We can find uses of perfumes, balms and ointments in various old books, such as the Bible. For example, the use of ointments and balms is noted more than thirty eight times, and perfumes and related materials are cited at least twenty nine times in the Bible.

**Chemical Engineering in the Pharmaceutical Industry**-Mary T. am Ende 2019-04-08 A guide to the important chemical engineering concepts for the development of new drugs, revised second edition The revised and updated second edition of Chemical Engineering in the Pharmaceutical Industry offers a guide to the experimental and computational methods related to drug product design and development. The second edition has been greatly expanded and covers a range of topics related to formulation design and process development of drug products. The authors review basic analytics for quantitation of drug product quality attributes, such as potency, purity, content uniformity, and dissolution, that are addressed with consideration of the applied statistics, process analytical technology, and process control. The 2nd Edition is divided into two separate books: 1) Active Pharmaceutical Ingredients (API's) and 2) Drug Product Design, Development and Modeling. The contributors explore technology transfer and scale-up of batch processes that are exemplified experimentally and computationally. Written for engineers working in the field, the book examines in-silico process modeling tools that streamline experimental screening approaches. In addition, the authors discuss the emerging field of continuous drug product manufacturing. This revised second edition: Contains 21 new or revised chapters, including chapters on quality by design, computational approaches for drug product modeling, process design with PAT and process control, engineering challenges and solutions Covers chemistry and engineering activities related to dosage form design, and process development, and scale-up Offers analytical methods and applied statistics that highlight drug product quality attributes as design features Presents updated and new example calculations and associated solutions Includes contributions from leading experts in the field Written for pharmaceutical engineers, chemical engineers, undergraduate and graduation students, and professionals in the field of pharmaceutical sciences and manufacturing, Chemical Engineering in the Pharmaceutical Industry, Second Edition contains information designed to be of use from the engineer's perspective and spans information from solid to semi-solid to lyophilized drug products.

**Aqueous Polymeric Coatings for Pharmaceutical Dosage Forms**-Linda A. Felton 2016-09-19 Aqueous-based film coating has become routine in the pharmaceutical industry. This process eliminates the use of organic solvents and thus avoids economic, environmental, and toxicological issues related to residual solvents and solvent recovery. Aqueous-based coating, however, is complex and many variables may impact the final product and its performance. This fourth edition of Aqueous Polymeric Coatings for Pharmaceutical Dosage Forms aims to provide insight into the factors and parameters that should be considered and controlled for the successful development and commercialization of a coated product. The fourth edition has been revised and expanded to reflect the most recent scientific advancements from the literature. The contributing authors explain in detail, using illustrated examples, appropriate steps to solve and ideally avoid formulation, processing, and stability problems and to achieve an optimized dosage form. Trade names and chemical names of commercially marketed coatings are used throughout the text to help familiarize the reader with the various materials available for pharmaceutical applications. This book will be a valuable resource for anyone in the pharmaceutical industry working in the area of aqueous-based film coating.

**Functional Polymers for Controlled Drug Release**-Umile Gianfranco Spizzirri 2020-03-19 This Special Issue focuses on the synthesis and characterization of hydrogels specifically used as carriers of biological molecules for pharmaceutical and biomedical employments. Pharmaceutical applications of hydrophilic materials has emerged as one of the most significant trends in the area of nanotechnology. To propose some of the latest findings in this field, each contribution involves an in-depth analysis including different starting materials and their physico-chemical and biological properties with the aim of synthesizing high-performing devices for specific use. In this context, intelligent polymeric devices able to be morphologically modified in response to an internal or external stimulus, such as pH or temperature, have been actively pursued. In general, hydrophilic polymeric materials lead to high in vitro and/or in vivo therapeutic efficacy, with programmed site-specific feature showing remarkable potential for targeted therapy. This Special Issue serves to highlight and capture the contemporary progress in this field. Relevant resources and people to approach - American Association Pharmaceutical Scientists (AAPS): web: www.aaps.org; email: (marketing division): Marketing@aaps.org; (meeting division): Meetings@aaps.org - International Association for Pharmaceutical Technology (APV): web: apv-mainz.de; email (managing director): stieneker@apv-mainz.de; (congresses and trade fairs): it@apv-mainz.de - International Society of Drug Delivery Sciences and Technology (APGI): web: http://www.apgi.org; email: apgi.asso@u-psud.fr; - The Society of Chemical Industry (SCI): web: www.soci.org; email: secretariat@soci.org - Italian society of researchers in pharmaceutical technology (A.D.R.I.T.E.L.F.): web: www-3.unipv.it/adritelf; email (head): mfadda@unica.it; - Italian Chemical Society (SCI): web: www.soc.chim.it; email: soc.chim.it@agora.it - Associazione Farmaceutici Industria (AFI): web: http://www.afiweb.it; email: segreteria@afiscientifica.it - Società Italiana di Chimica e Scienze Cosmetologiche (SICC): web: www.sicc.tv; mail: segreteria@sicc.it - Society for biomaterials: web: www.biomaterials.org; email: info@biomaterials.org - European Society for Biomaterials (ESB): web: www.esbiomaterials.eu; email: - Società Italiana Biomateriali (SIB): web: www.biomateriali.org; email: webmaster@biomateriali.org - Medical Device Manufacturers Association (MDMA): web: www.medicaldevices.org; - European Polymer Federaton (EPF): web: www.europolyfed.org; email: epf.gensec@gmail.com - Society of Plastics Engineers (SPE): web: www.4spe.org; email: info@4spe.org - Polymer Processing Society (PPS): web: www.poly-eng.uakron.edu/ppps; email: cakmak@uakron.edu; - American Chinese Pharmaceutical Association; web: www.acpa-rx.org; - Chinese Pharmaceutical Association: web: www.pharmachinaonline.com - Society of Polymer Science, Japan: web: www.spsj.or.jp; email: intl@spsj.or.jp

**Polysaccharide based Nano-Biocarrier in Drug Delivery**-Tapan Kumar Giri 2018-09-03 This book discusses various fundamental aspects of polysaccharide based nano-biocarrier drug delivery systems and its application in the delivery of small molecules, proteins, peptides, oligonucleotides and genes. It also discusses advances in drug delivery systems in treatment of cancer, cardiovascular, pulmonary, and infectious diseases.

**Drug Delivery**-Anya M Hillery 2016-09-15 This book provides a comprehensive introduction to advanced drug delivery and targeting, covering their principles, current applications, and potential future developments. This edition has been updated to reflect significant trends and cutting-edge advances that have occurred since the first edition was published. All the original chapters have been retained, but the material therein has been updated. Eight new chapters have been added that deal with entirely new technologies and approaches. Features: Offers a comprehensive introduction to the fundamental concepts and underlying scientific principles of drug delivery and targeting Presents an in-depth analysis of the opportunities and obstacles afforded by the application of nanotechnologies for drug delivery and targeting Includes a revised and expanded section on the major epithelial routes of drug delivery currently under investigation Describes the most recent, emerging, and innovative technologies of drug delivery Provides real-life examples of the clinical translation of drug delivery technologies through the use of case studies Discusses the pertinent regulatory hurdles and safety issues of drug delivery and targeting systems—crucial considerations in order to achieve licensing approval for these new technologies

**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 Biology™ series format, offering readily reproducible results vital for pharmaceutical physicians and scientists.

**Chemical Engineering in the Pharmaceutical Industry, Active Pharmaceutical Ingredients**-David J. am Ende 2019-04-23 A guide to the development and manufacturing of pharmaceutical products written for professionals in the industry, revised second edition The revised and updated second edition of Chemical Engineering in the Pharmaceutical Industry is a practical book that highlights chemistry and chemical engineering. The book's regulatory quality strategies target the development and manufacturing of pharmaceutically active ingredients of pharmaceutical products. The expanded second edition contains revised content with many new case studies and additional example calculations that are of interest to chemical engineers. The 2nd Edition is divided into two separate books: 1) Active Pharmaceutical Ingredients (API's) and 2) Drug Product Design, Development and Modeling. The active pharmaceutical ingredients book puts the focus on the chemistry, chemical engineering, and unit operations specific to development and manufacturing of the active ingredients of the pharmaceutical product. The drug substance operations section includes information on chemical reactions, mixing, distillations, extractions, crystallizations, filtration, drying, and wet and dry milling. In addition, the book includes many applications of process modeling and modern software tools that are geared toward batch-scale and continuous drug substance pharmaceutical operations. This updated second edition: • Contains 30 new chapters or revised chapters specific to API, covering topics including: manufacturing quality by design, computational approaches, continuous manufacturing, crystallization and final form, process safety • Expanded topics of scale-up, continuous processing, applications of thermodynamics and thermodynamic modeling, filtration and drying • Presents updated and expanded example calculations • Includes contributions from noted experts in the field Written for pharmaceutical engineers, chemical engineers, undergraduate and graduate students, and professionals in the field of pharmaceutical sciences and manufacturing, the second edition of Chemical Engineering in the Pharmaceutical Industry focuses on the development and chemical engineering as well as operations specific to the design, formulation, and manufacture of drug substance and products.

**Remington Education Pharmaceutics**-Shelley Chambers Fox 2014-06-25 Remington Education: Pharmaceutics covers the basic principles of pharmaceutics, from dosage forms to drug delivery and targeting. It addresses all the principles covered in an introductory pharmacy course. As well as offering a summary of key information in pharmaceutics, it offers numerous case studies and MCQs for self assessment.

**Drug Delivery**-Ashim K. Mitra 2014-08-18 Drug Delivery is the latest and most up-to-date text on drug delivery and offers an excellent working foundation for students and clinicians in health professions and graduate students including nursing, pharmacy, medicine, dentistry, as well as researchers and scientists. Presenting this complex content in an organized and concise format, Drug Delivery allows students to gain a strong understanding of the key concepts of drug delivery. This text focuses on the basic concepts of drug delivery while thoroughly examining various topics such as: CNS delivery Gene delivery Ocular delivery World-wide research on drug delivery Recent advances in drug delivery A significant advancement has been made in the field of drug delivery. This text provides a detailed overview of drug delivery systems, routes of drug administration and development of various formulations. The cutting edge research being carried out in this field will be compiled and a focus on worldwide research on drug delivery and targeting at the molecular, cellular, and organ levels will also be summarized. Each new print copy includes access to the Navigate Companion Website including: Chapter Quizzes, Interactive Glossary, Crossword Puzzles, Interactive Flashcards, and Matching Exercises

**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.

**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.

**Sustained and Controlled Release Drug Delivery Systems**-Joseph R. Robinson 1978

**Modified-release Drug Delivery Technology**- 2008

**Applications of Encapsulation and Controlled Release**-Munmaya K. Mishra 2019-09-18 The field of

encapsulation, especially microencapsulation, is a rapidly growing area of research and product development. Applications of Encapsulation and Controlled Release offers a broad perspective on a variety of applications and processes, including, up-to-date research, figures, tables, illustrations, and references. Written at a level comprehensible to non-experts, it is a rich source of technical information and current practices in research and industry.

**Prodrugs**-Valentino Stella 2007-03-12 These volumes represent a comprehensive guide to prodrugs. They guide the reader through the current status of the prodrug concept and its many applications and highlight its many successes in overcoming formulation and delivery of problematic drugs. Replete with examples of approved and marketed prodrugs, these volumes introduce the topic to the novice as well as professional in the design of prodrugs.