Glatt Fluid Bed Technology

Developing Solid Oral Dosage Forms is intended for pharmaceutical professionals engaged in research and development of oral dosage forms. It covers essential principles of physical pharmacy, biopharmaceutics and industrial pharmacy as well as various aspects of state-of-the-art techniques and approaches in pharmaceutical sciences and technologies along with examples and/or case studies in produ
of this book is to offer updated (or current) knowledge and skills required for rational oral product design and development. The specific goals are to provide readers with: Basics of modern theories of physical pharmacy, biopharmaceutics and industrial pharmacy and their applications throughout the entire process of research and development of oral dosage forms Tools and approaches of preformulation i
formulation/process design, characterization and scale-up in pharmaceutical sciences and technologies New developments, challenges, trends, opportunities, intellectual property issues and regulations in solid product development The first book (ever) that provides comprehensive and in-depth coverage of what's required for developing high quality pharmaceutical products to meet international standards
topics that encompass the entire spectrum of solid dosage form development for the global market, including the most updated science and technologies, practice, applications, regulation, intellectual property protection and new development trends with case studies in every chapter A strong team of more than 50 well-established authors/co-authors of diverse background, knowledge, skills and experience
regulatory agencies

Thoroughly updated and expanded, this new Third Edition provides the latest information on dosage, forms, film defects, and polymer characterization. Written by renowned leaders in the field, Aqueous Polymeric Coatings for Pharmaceutical Dosage Forms is easily the most comprehensive book available on the market today. New to the Third Edition: the interaction of drugs with functional polymers the inf
parameters on coating quality the stabilization of polymeric film coats plasticizers and their applications in pharmaceutical coatings adhesion of polymeric films to solid substrates basic properties of latex and pseudolatex colloidal dispersions Key topics included: polymer interactions with drugs and excipients physical aging of polymeric films a complete overview and in-depth analysis of recent advances in t
information on the latest equipment used to apply polymers to a pharmaceutical system illustrated examples explaining the appropriate steps to be taken in order to solve formulation, processing, and stability problems to achieve an optimized dosage form

In this era of increased pharmaceutical industry competition, success for generic drug companies is dependent on their ability to manufacture therapeutic-equivalent drug products in an economical and timely manner, while also being cognizant of patent infringement and other legal and regulatory concerns.Generic Drug Product Development: Solid Oral

Pharmaceutical Technology – Concepts and Applications articulates on the various pharmaco-technological concepts associated with industrial pharmacy. The book not only focuses on providing comprehensive information on formulation development and affiliated areas but also emphasizes on their industrial applications. With a plethora of examples that illustrate important concepts, the book equips stud
the requirements of the industry.

Part of the Expertise in Pharmaceutical Process Technology Series

The Science and Practice of Pharmacy

Project Summary Reports

Encapsulation Technologies for Active Food Ingredients and Food Processing

Science and Technology for Biological Rhythm Guided Therapy and Prevention of Diseases

A Practical Implementation Guide

This fully revised edition of Handbook of Pharmaceutical Granulation Technology covers the rapid advances in the science of agglomeration, process control, process modelling, scale-up, emerging particle engineering technologies, along with current regulatory changes presented by some of the prominent scientist and subject matter experts around the globe. Learn from more than 50 global subject matter experts who share their years of experience in areas ranging from drug delivery and pharmaceutical technology to advances in nanotechnology. Every pharmaceutical scientist should own a copy of this fourth edition resource. Key Features: Theoretical discussions covering granulation and engineering perspectives. Covers new advances in expert systems, process modelling and bioavailability Chapters on emerging technologies in particle engineering Updated Current research and developments in granulation technologies

The field of encapsulation, especially microencapsulation, is a rapidly growing area of research and product development. The Handbook of Encapsulation and Controlled Release covers the entire field, presenting the fundamental processes involved and exploring how to use those processes for different applications in industry. Written at a level comp

Remington: The Science and Practice of Pharmacy, Twenty Third Edition, offers a trusted, completely updated source of information for education, training, and development of pharmacists. Published for the first time with Elsevier, this edition includes coverage of biologics and biosimilars as uses of those therapeutics have increased substantially since the previous edition. Also discussed are formulations, drug delivery (including prodrugs, salts, polymorphism. With clear, detailed color illustrations, fundamental information on a range of pharmaceutical science areas, and information on new developments in industry, pharmaceutical industry scientists, especially those involved in drug discovery and development will find this edition of Remington an essential reference. Intellectual property professionals will also find this reference helpful to cite in patents and resulting litigations. Additional graduate and postgraduate students in Pharmacy and Pharmaceutical Sciences will refer to this book in courses dealing with medicinal chemistry and pharmaceutics. Contains a comprehensive source of principles of drug discovery and development topics, especially for scientists that are new in the pharmaceutical industry such as those with trainings/degrees in chemistry and engineering Provides a detailed source for formulation scientists and compounding pharmacists, from produg to excipient issues Updates this excellent source with the latest information to verify facts and refresh on basics for professionals in the broadly defined pharmaceutical industry

Pharmaceutical Extrusion Technology is the only resource to provide in-depth descriptions and analyses of the key parameters of extruders and extrusion processes. The book highlights the applicability of melt extrusion in pharmaceutical drug development and product manufacturing, including controlled release, dissolution rate and bioavailability enhancement, and granulation technology. It brings together the technical information necessary to develop and market pharmaceutical dosage forms that meet current quality and regulatory requirements and details extruder hardware and controls, process definition and troubleshooting of single and twin screw extrusion processes, and more.

Microcapsules and Nanoparticles in Medicine and Pharmacy

Multiparticulate Drug Delivery

Encapsulation and Controlled Release Technologies in Food Systems

Aqueous Polymeric Coatings for Pharmaceutical Dosage Forms, Third Edition

Vacuum Technology in the Chemical Industry

Dosage Form Design Considerations

A comprehensive source of information about modern drying technologies that uniquely focus on the processing of pharmaceuticals and biologicals Drying technologies are an indispensable production step in the pharmaceutical industry and the knowledge of drying technologies and applications is absolutely essential for current drug product development. This book focuses on the application of various drying technologies to the processing of pharmaceuticals and biologicals. It offers a complete overview of innovative as well as standard drying technologies, and addresses the issues of why drying is required and what the critical considerations are for implementing this process operation during drug product development. Drying Technologies for Biotechnology and Pharmaceutical Applications discusses the state-of-the-art of established drying technologies like freeze- and spray- drying and highlights limitations that need to be overcome to achieve the future state of pharmaceutical manufacturing. The book also describes promising next generation drying technologies, which are currently used in fields outside of pharmaceuticals, and how they can be implemented and adapted for future use in the pharmaceutical industry. In addition, it deals with the generation of synergistic effects (e.g. by applying process analytical technology) and provides an outlook toward future developments. -Presents a full technical overview of well established standard drying methods alongside various other drying technologies, possible improvements, limitations, synergies, and future directions -Outlines different drying technologies from an application-oriented point of view and with consideration of real world challenges in the field of drug product development -Edited by renowned experts from the pharmaceutical industry and assembled by leading experts from industry and academia Drying Technologies for Biotechnology and Pharmaceutical Applications is an important book for pharma engineers, process engineers, chemical engineers, and others who work in related industries.

Encapsulated and Powdered Foods is a practical guide to the characterization and applications of the powdered form of foods. It details the uses of food powder as well as the physical, chemical, and functional properties of particular food powders, such as milk, cocoa, salts, and sugars. The author describes the powder manufacturing processes and a range of related topics, including drying technologies; storage, moisture, lumping, and bridging in the bin; and the blending and segregation of powders. The book concludes with discussions on the creation of specialty ingredients and engineered powders.

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, prefomulation 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

First published in 1992: This book provides a comprehensive look at the design and production of microcapsules, microspheres, and nanoparticles. It discusses the diverse aspects and skills that must be mastered to prepare and test products that will work correctly and be clinically acceptable for human or animal use.

Granulation

Handbook of Pharmaceutical Granulation Technology

Manufacturing, Properties and Application

Drying Technologies for Biotechnology and Pharmaceutical Applications

Solid Oral Dosage Forms, Second Edition

Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems

Foods are ingested and become part of our body. This book describes the science and procedure behind the materials in foods that impart their desirable properties. The book can serve as a text in a course in food materials science at the senior or graduate level or as a supplemental text in an advanced food technology course. It cac also serve as a reference book for professionals in the food industry.

Spray drying is a well-established method for transforming liquid materials into dry powder form. Widely used in the food and pharmaceutical industries, this technology produces high quality powders with low moisture content, resulting in a wide range of shelf stable food and other biologically significant products. Encapsulation technology for bioactive compounds has gained momentum in the last few decades and a series of valuable food compounds, namely flavours, carotenoids and microbial cells have been successfully encapsulated using spray drying. Spray Drying Technique for Food Ingredient Encapsulation provides an insight into the engineering aspects of the spray drying process in relation to the encapsulation of food ingredients, choice of wall materials, and an overview of the various food ingredients encapsulated using spray drying. The book also throws light upon the recent advancements in the field of encapsulation by spray drying, i.e., nanospray dryers for production of nanocapsules and computational fluid dynamics (CFD) modeling. Addressing the basics of the technology and its applications, the book will be a reference for scientists, engineers and product developers in the industry.

Microencapsulation is being used to deliver everything from improved nutrition to unique consumer sensory experiences. It's rapidly becoming one of the most important opportunities for expanding brand potential. Microencapsulation in the Food Industry: A Practical Implementation Guide is written for those who see the potential benefit of using microencapsulation but need practical insight into using the technology. With coverage of the process technologies, materials, testing, regulatory and even economic insights, this book presents the key considerations for putting microencapsulation to work. Application examples as well as online access to published and issued patents provide information on freedom to operate, building an intellectual property portfolio, and leveraging ability into potential in licensing patents to create produce pipeline. This book bridges the gap between fundamental research and application by combining the knowledge of new and novel processing techniques, materials and selection, regulatory concerns, testing and evaluation of materials, and application-specific uses of microencapsulation. Practical applications based on the authors' more than 50 years combined industry experience Focuses on application, rather than theory Includes the latest in processes and methodologies Provides multiple "starting point" options to jump-start encapsulation use

Consumers prefer food products that are tasty, healthy, and convenient. Encapsulation is an important way to meet these demands by delivering food ingredients at the right time and right place. For example, encapsulates may allow flavor retention, mask bad tasting or bad smelling components, stabilize food ingredients, and increase their bioavailability. Encapsulation may also be used to immobilize cells or enzymes in the production of food materials or products, such as fermentation or metabolite production. This book provides a detailed overview of the encapsulation technologies available for use in food products, food processing, and food production. The book aims to inform those who work in academia or R&D about both the delivery of food compounds via encapsulation and food processing using immobilized cells or enzymes. The structure of the book is according to the use of encapsulates for a specific application. Emphasis is placed on strategy, since encapsulation technologies may change. Most chapters include application possibilities of the encapsulation technologies in specific food products or processes. The first part of the book reviews general technologies, food-grade materials, and characterization methods for encapsulates. The second part discusses encapsulates of active ingredients (e.g., aroma, fish oil, minerals, vitamins, peptides, proteins, probiotics) for specific food applications. The last part describes immobilization technologies of cells and enzymes for use within food fermentation processes (e.g., beer, wine, dairy, meat), and food production (e.g., sugar conversion, production of organic acids or amino acids, hydrolysis of triglycerides). Edited by two leading experts in the field, Encapsulation Technologies for Food Active Ingredients and Food Processing will be a valuable reference source for those working in the academia or food industry. The editors work in both industry or academia, and they have brought together in this book contributions from both fields.

Model-IT : Madrid, Spain, June 9-11, 2008

International Food Marketing & Technology

Pharmaceutical Technology: Concepts and applications

Drying 96

Formulation, Processing and Manufacturing

Manufacturing Methods and Technology Project Summary Reports

How to Optimize Fluid Bed Processing Technology: Part of the Expertise in Pharmaceutical Process Technology Series addresses the important components of fluid bed granulation, providing answers to problems that commonly arise and using numerous practical examples and case studies as reference. This book covers the theoretical concepts involved in fluidization, also providing a description of the choice and functionality of equipment. Additional chapters feature key aspects of the technology, including formulation requirements, process variables, process scale-up, troubleshooting, new development, safety, and process evaluation. Given its discussion of theoretical principles and practical solutions, this is a go-to resource for all those scientists and new researchers working with fluid bed granulation as a unit operation. Written by an expert in the field with several years of experience in product development, manufacturing, plant operations, and process engineering Illustrates when fluid bed granulation is needed, when to use less common fluid bed granulation methods, and the advantages of fluid bed granulation when compared to other granulation techniques Offers troubleshooting tips and practical advice for scientists working with this technique

ORAL DRUG DELIVERY FOR MODIFIED RELEASE FORMULATIONS Provides pharmaceutical development scientists with a detailed reference guide for the development of MR formulations Oral Drug Delivery for Modified Release Formulations is an up-to-date review of the key aspects of oral absorption from modified-release (MR) dosage forms. This edited volume provides in-depth coverage of the physiological factors that influence drug release and of the design and evaluation of MR formulations. Divided into three sections, the book begins by describing the gastrointestinal tract (GIT) and detailing the conditions and absorption processes occurring in the GIT that determine a formulation's oral bioavailability. The second section explores the design of modified release formulations, covering early drug substance testing, the biopharmaceutics classification system, an array of formulation technologies that can be used for MR dosage forms, and more. The final section focuses on in vitro, in silico, and in vivo evaluation and regulatory considerations for MR formulations. Topics include biorelevant dissolution testing, preclinical evaluation, and physiologically-based pharmacokinetic modelling (PBPK) of in vivo behaviour. Featuring contributions from leading researchers with expertise in the different aspects of MR formulations, this volume: Provides authoritative coverage of physiology, physicochemical determinants, and in-vitro in-vivo correlation (IVIVC) Explains the different types of MR formulations and defines the key terms used in the field Discusses the present status of MR technologies and identifies current gaps in research Includes a summary of regulatory guidelines from both the US and the EU Shares industrial experiences and perspectives on the evaluation of MR dosage formulations Oral Drug Delivery for Modified Release Formulations is an invaluable reference and guide for researchers, industrial scientists, and graduate students in general areas of drug delivery including pharmaceutics, pharmaceutical sciences, biomedical engineering, polymer and materials science, and chemical and biochemical engineering.

Chronopharmaceutics Science and Technology for Biological Rhythm Guided Therapy and Prevention of Diseases Edited by Bi-Botti C. Youan The first standard reference on chronopharmaceutics As we better understand how biological processes unfold in real time through advances in chronobiology and related fields, we can create safer, more effective drugs, drug delivery systems, and disease monitoring and prevention systems. When administered in correct coordination with a patient's body rhythms, such drugs can maximize therapeutic outcome while minimizing unwanted side effects. Chronopharmaceutics presents the first standard reference text on this emerging cross-disciplinary field and its potential for therapeutic and preventive medicine. Bringing together the latest findings from experienced investigators, this edited work presents a much-needed single source on chronopharmaceutics. After an introduction that includes a timeline of key discoveries, an overview of regula-tory, formulation, manufacturing and key resource issues associated with chronopharmaceutics, the detailed coverage examines: Chronogenetics Chronopharmacokinetics Chronotherapy Controlled release systems triggered by physical and/or chemical activation Chronopharmacodynamics, chronomics, and anesthesia Markers-guided chronotheranostics Filling a gap in both the graduate classroom and the working industrial or research laboratory, Chronopharmaceutics offers students, instructors, and professionals a unique and comprehensive reference for this cutting-edge field.

The emergence of the discipline of encapsulation and controlled release has had a great impact on the food and dietary supplements sectors; principally around fortifying food systems with nutrients and health-promoting ingredients. The successful incorporation of these actives in food formulations depends on preserving their stability and bioavailability as well as masking undesirable flavors throughout processing, shelf life and consumption. This second edition of Encapsulation and Controlled Release Technologies in Food Systems serves as an improvement and a complement companion to the first. However, it differentiates itself in two main aspects. Firstly, it introduces the reader to novel encapsulation and controlled release technologies which have not yet been addressed by any existing book on this matter, and secondly, it offers an in-depth discussion on the impact of encapsulation and controlled release technologies on the bioavailability of health ingredients and other actives. In common with the first edition the book includes chapters written by distinguished authors and researchers in their respective areas of specialization. This book is designed as a reference for scientists and formulators in the food, nutraceuticals and consumer products industries who are looking to formulate new or existing products using microencapsulated ingredients. It is also a post-graduate text designed to provide students with an introduction to encapsulation and controlled release along with detailed coverage of various encapsulation technologies and their adaptability to specific applications.

Theory and Practice

Pharmaceutical Pelletization Technology

A Novel Method for Predicting Product Properties in Fluidized Bed Spray Granulation (Band 19)

Handbook of Encapsulation and Controlled Release

Pharmaceutical Theory and Practice

From Concept to Prescribing

Pesticide Formulation and Adjuvant Technology brings together experts from industry, academia, regulatory offices, and the legal profession to provide a complete and international reference on agrichemical formulations and modern adjuvant technology. Global specialists discuss key topics, from scientific and technical issues to regulatory and legal aspects, including:

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

Fluidized bed spray granulation is a process that facilities particle size enlargement by injecting solids in the form of a suspension, solution or melt. The produced particles are often of high value due to their highly specific, functionalized nature. This work provides a method for utilizing particle-scale simulations method like the coupled Computational Fluid Dynamics-Discrete Element Method (CFD-DEM) to predict the properties of particles produced in scaled-up apparatuses based on laboratory-scale experiments by correlating the conditions that particle experience to the properties they develop. Furthermore, a method for calibrating DEM models of weakly wetted particle systems by utilizing a novel, probabilistic liquid bridge state model is proposed.

This book serves as a formulation and processing guide during the development of pelletized dosage forms. It provides the pharmaceutical technologist with basic information about the design aspects of the relevant processing equipment.

Generic Drug Product Development

Pesticide Formulation and Adjuvant Technology

How to Optimize Fluid Bed Processing Technology

Oral Drug Delivery for Modified Release Formulations

Encapsulated and Powdered Foods

This e-book presents recent advances in research in the field of particulate systems. A comprehensive background on operations involving particulate materials with a didactic approach is illustrated. Fundamentals and applications in a variety of multi-phase flow reactors are explained with a clear focus on the analysis of transport phenomena, experimental techniques and modeling. The volume spans 10 chapters covering different aspects of transport phenomena including fixed and fluidized systems, spouted beds, electrochemical and wastewater treatment reactors. This e-book will be valuable for students, engineers and researchers aiming to keep updated on the latest developments on particulate systems.

Microencapsulation in the Food Industry: A Practical Implementation Guide, Second Edition continues to focus on the development of new microencapsulation techniques for researchers and scientists in the field. This practical reference combines the knowledge of new and novel processing techniques, materials and selection, regulatory aspects and testing and evaluation of materials. It provides application specific uses of microencapsulation as it applies to the food and nutraceutical industries. This reference offers unique solutions to some very specific product needs in the field of encapsulation. This second edition highlights changes in the industry as a result of a field that has traversed from the micro scale level to nano-scaled encapsulation and includes two new chapters, one on regulatory, quality, process scale-up, packaging, and economics and the other on testing and quality control. Includes new characterization methodologies to understand chemical and physical properties for functionality of the final microencapsulated material Presents the latest research and developments in the area of nano-scale encapsulation and intelligent packaging Provides new testing tools to assess products containing microencapsulated actives

This book aims to address the major aspects of future drug product development and therapy for older adults, giving practical guidance for the rational product and clinical development and prescribing of drug products to this ever growing segment of the population. With authors coming from key "aging" markets such as Europe, the USA, China and Japan, the book will provide valuable information for students, scientists, regulators, practitioners, and other healthcare professionals from academia, industry and regulatory bodies.

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.

Unit Operations of Particulate Solids

Spray Drying Techniques for Food Ingredient Encapsulation

International Journal of Powder Metallurgy

Remington

Multifunctional Metallic Hollow Sphere Structures

How to Optimize Fluid Bed Processing TechnologyPart of the Expertise in Pharmaceutical Process Technology SeriesAcademic Press

Based on the very successful German edition and a seminar held by the German Engineers` Association (VDI) on a regular basis for years now, this English edition has been thoroughly updated and revised to reflect the latest developments. It supplies in particular the special aspects of vacuum technology, applied vacuum pump types and vacuum engineering in the chemical, pharmaceutical and process industry application-segments. The text includes chapters dedicated to latest European regulations for operating in hazardous zones with vacuum systems, methods for process pressure control and regulation and leak detection. All of the authors work or did work at a selection of the most important German companies involved in vacuum technology, and their expertise is disseminated here for engineers working in vacuum technology, chemical process design, plant operation, and mechanical engineering.

Granulation provides a complete and comprehensive introduction on the state-of-the-art of granulation and how it can be applied both in an academic context and from an industrial perspective. Coupling science and engineering practices it covers differing length scales from the sub-granule level through behaviour through single granules, to bulk granule behaviour and equipment design. With special focus on a wide range of industrially relevant areas from fertilizer production, through to pharmaceuticals. Experimental data is complemented by mathematical modelling in this emerging field, allowing for a greater understanding of the basis of particle products and this important industry sector. Four themes run through the book: 1. The Macro Scale processing for Granulation – including up to date descriptions of the methods used for granulation and how they come about and how to monitor – on-line these changes. 2. The Applications of granulation from an industrial perspective, with current descriptive roles and how they are undertaken with relevance to industry, and effective properties. 3. Mechanistic descriptions of granulation and the different rate processes occurring within the granulator. This includes methods of modelling the process using Population – Balance Equations, and Multi-level Computational Fluid Dynamics Models. 4. The Micro Scale: Granules and Smaller, looking at single granules and there interactions and modelling, while also considering the structure of granules and their constituent liquid bridges.

*** Covers a wide range of subjects and industrial applications * Provides an understanding of current issues for industrial and academic environments * Allows the reader an understanding of the science behind engineered granulation processes**

Multifunctional Metallic Hollow Sphere Structures are an emerging new material category, belonging like metal foams to the class cellular metals. Thanks to their advantageous mechanical and sound absorbing properties, Multifunctional Metallic Hollow Sphere Structures are very promising for various applications and our technological knowledge makes them ready for industrial usage. This reference gives a complete overview on this new materials class, the fundamentals, the applications and the perspective for future use. It provides the foundations for a profound understanding (production and processing), their physical properties (surface properties and stalility) and applicaltion (in particular for sound absorption and chemical adsorption in structural parts). The book is written for material scientists, product designers and developers as well as academic researches and scientists.

Chronopharmaceutics

Microencapsulation in the Food Industry

Handbook of Industrial Drying

Proceedings of the IVth International Symposium on Applications of Modelling as an Innovative Technology in the Agri-Food-Chain

Principles and Practice

Developing Solid Oral Dosage Forms

Still the Most Complete, Up-To-Date, and Reliable Reference in the FieldDrying is a highly energy-intensive operation and is encountered in nearly all industrial sectors. With rising energy costs and consumer demands for higher quality dried products, it is increasingly important to be aware of the latest developments in industrial drying technolog

The most trusted source on the subject available today, Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems, 12th Edition equips pharmacy students with everything they need to master the intricacies of pharmaceutical dosage form design and production and achieve successful outcomes in their courses and beyond. Reflecting the latest CAPE, APhA, and NAPLEX® competencies, this trusted, extensively updated resource clarifies the interrelationships between pharmaceutical and biopharmaceutical principles, product design, formulation, manufacture, compounding, and the clinical application of the various dosage forms in patient care, as well as regulations and standards governing the manufacturing and compounding of pharmaceuticals. New and revised content throughout keeps students up to date with current approaches to key coverage areas, and additional case studies demonstrate concepts in action to reinforce understanding and prepare students for the clinical challenges ahead.

The Third Edition presents all pharmaceutical industry personnel and those in academia with critical updates on the recent advances in granulation technology and changes in FDA regulatory guidelines. Addressing precisely how these recent innovations and revisions affect unit operation of particle generation and granulation, this text assists the re

Food Materials Science

Transport Phenomena In Particulate Systems

Developing Drug Products in an Aging Society

Pharmaceutical Extrusion Technology