Pharmaceutical Powder Compaction Technology

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Advances in Food and Nutrition Research - Steve Taylor 2005-05-04
Advances in Food and Nutrition Research is an eclectic serial established in 1948. The serial recognizes the integral relationship between the food and nutritional sciences and brings together outstanding and comprehensive reviews that highlight this relationship. Contributions detail the scientific developments in the broad areas encompassed by the fields of food science and nutrition and are intended to ensure that food scientists in academia and industry, as well as professional nutritionists and dieticians, are kept informed concerning emerging research and developments in these important disciplines. Series established since 1948 Advisory Board consists of 8 respected scientists Unique series as it combines food science and nutrition research
Dosage Form Design Parameters - 2018-07-25
Dosage Form Design Parameters, Volume II, 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
Pharmaceutical Powder Compaction Technology - Metin Çelik 2021-03-31
Revised to reflect modern pharmaceutical compacting techniques, this Second Edition explores compaction of powder constituents (both active ingredient and excipients) and guides pharmaceutical engineers, formulation scientists, product development and quality assurance personnel through the compaction formulation process to ensure consistent and
Pharmaceutical Powder Compaction Technology, Second Edition - Metin Çelik 2011-08-22
Compaction of powder constituents—both active ingredient and excipients—is examined to ensure consistent and reproducible disintegration and dispersion profiles. Revised to reflect modern pharmaceutical compacting techniques, this second edition of Pharmaceutical Powder Compaction Technology guides pharmaceutical engineers, formulation scientists, and product development and quality assurance personnel through the compaction formulation process and application. This unique reference covers: The physical structure of pharmaceutical compacts Bonding phenomena that occur during powder compaction Compression mechanisms of pharmaceutical particles Theories and basic principles of powder compaction New topics include: Compaction data analysis techniques The migration of powder constituents into commercial manufacture Instrumentation for compaction Compaction functionality testing, which is likely to become a USP requirement Design space for compaction Metrics required for scalability in tablet compression Interactive compaction and preformulation database for commonly used excipients
Modelling of Powder Die Compaction - Peter R. Brewin 2010-10-22
Manufacture of components from powders frequently requires a compaction step. Modelling of Powder Die Compaction presents a number of case studies that have been developed to test compaction models. It will be bought by researchers involved in developing models of powder compaction as well as by those working in industry, either using powder compaction to make products or using products made by powder compaction.
Pharmaceutical Dosage Forms - Larry L. Augsburger 2017-10-30
Pharmaceutical Dosage Forms: Capsules covers the development, composition, and manufacture of capsules. Despite the important role that capsules play in drug delivery and product development, few comprehensive texts on the science and technology of capsules have been available for the research and academic environments. This text addresses this gap, discussing how capsules provide unique capabilities and options for dosage form design and formulation.
Particle-particle Adhesion In Pharmaceutical Powder Handling - Fridrun Podczeck 1998-07-31
This monograph describes the physical principles of adhesion between particles and surfaces. These principles are applied to pharmaceutical processes involved in the manufacture of solid dosage forms such as powders, granules, tablets and dry powder inhalations. To help in the understanding of these systems, physical properties of solid surfaces, and an introduction to the theory of friction is given. Techniques for measuring particle adhesion and fracture mechanical properties of powders are introduced, as far as these are relevant to the processes discussed. The philosophy of the book deviates from that of standard pharmaceutical textbooks, in that it focuses primarily on physical principles involved in the manufacture of dosage forms rather than describing these processes purely by observation.
Excipient Development for Pharmaceutical, Biotechnology, and Drug Delivery Systems - Ashok Katdare 2006-07-28
To facilitate the development of novel drug delivery systems and biotechnology-oriented drugs, the need for new excipients to be developed and approved continues to increase. Excipient Development for Pharmaceutical, Biotechnology, and Drug Delivery Systems serves as a comprehensive source to improve understanding of excipients and forge new avenue
Modern Pharmaceutics Volume 1 - Alexander T. Florence 2009-05-28
With over 100 illustrations, Volume 1 addresses the core disciplines of pharmaceutics (absorption, PK, excipients, tablet dosage forms, and packaging), and explores the challenges and paradigms of pharmaceutics. Key topics in Volume 1 include: • principles of drug absorption, chemical kinetics, and drug stability • pharmacokinetics • the effect of route of administration and distribution on drug action • in vivo imaging of dose forms: gamma scintigraphy, PET imaging NMR, MRI, etc. • powder technology • excipient design and characterization • preformulation • optimization techniques in pharmaceutical formulation and processing • disperse and surfactant systems • the solid state, tablet dosage forms, coating processes, and hard and soft shell capsules • parenteral products
Pharmaceutical Powder Compattion Technology - Goran Alderborn 2019-08-30

This unique reference examines the modern pharmaceutical compacting techniques used to form tablets out of powders-describing the physical structure of pharmaceutical compacts, the bonding phenomena that occur during powder compaction, and the compression mechanisms of pharmaceutical particles.

Active Pharmaceutical Ingredients - Stanley Nusim 2016-04-19

To successfully bring an Active Pharmaceutical Ingredient (API) to market, many steps must be followed to ensure compliance with governmental regulations. Active Pharmaceutical Ingredients is an unparalleled guide to the development, manufacturing, and regulation of the preparation and use of APIs globally. Topics include:Safety, efficacy, and envi

Pharmaceutical Powder ComPattion Technology - Goran Alderborn 1995-09-26

This unique reference examines the modern pharmaceutical compacting techniques used to form tablets out of powders-describing the physical structure of pharmaceutical compacts, the bonding phenomena that occur during powder compaction, and the compression mechanisms of pharmaceutical particles.

How to Design and Implement Powder-to-Tablet Continuous Manufacturing Systems - Fernando Muzzio 2022-04-15

How to Design and Implement Powder-to-Tablet Continuous Manufacturing Systems provides a comprehensive overview on the considerations necessary for the design of continuous pharmaceutical manufacturing processes. The book covers both the theory and design of continuous processing of associated unit operations, along with their characterization and control. In addition, it discusses practical insights and strategies that the editor and chapter authors have learned. Chapters cover Process Analytical Technology (PAT) tools and the application of PAT data to enable distributed process control. With numerous case studies throughout, this valuable guide is ideal for those engaged in, or learning about, continuous processing in pharmaceutical manufacturing. Discusses the development of strategy blueprints in the design of continuous processes Shows how to create process flowsheet models from individual unit operation models Includes a chapter on characterization methods for materials, the use of statistical methods to analyze material property data, and the use of material databases Covers the evolving regulatory expectations for continuous manufacturing Provides readers with ways to more effectively navigate these expectations

Pharmaceutical Crystals - Tonglei Li 2018-09-03

An important resource that puts the focus on understanding and handling of organic crystals in drug development Since a majority of pharmaceutical solid-state materials are organic crystals, their handling and processing are critical aspects of drug development. Pharmaceutical Crystals: Science and Engineering offers an introduction to and thorough coverage of organic crystals, and explores the essential role they play in drug development and manufacturing. Written contributions from leading researchers and practitioners in the field, this vital resource provides the fundamental knowledge and explains the connection between pharmaceutically relevant properties and the structure of a crystal. Comprehensive in scope, the text covers a range of topics including: crystallization, molecular interactions, polymorphism, analytical methods, processing, and chemical stability. The authors clearly show how to find solutions for pharmaceutical form selection and crystallization processes. Designed to be an accessible guide, this book represents a valuable resource for improving the drug development process of small drug molecules. This important text: Includes the most important aspects of solid-state organic chemistry and its role in drug development Offers solutions for pharmaceutical form selection and crystallization processes Contains a balance between the scientific fundamental and pharmaceutical applications Presents coverage of crystallography, molecular interactions, polymorphism, analytical methods, processing, and chemical stability Written for both practicing pharmaceutical scientists, engineers, and senior undergraduate and graduate students studying pharmaceutical solid-state materials, Pharmaceutical Crystals: Science and Engineering is a reference and textbook for understanding, producing, analyzing, and designing organic crystals which is an imperative skill to master for anyone working in the field.

Granulation - Agba D. Salman 2006-11-24

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

Powders and Grains 2005, Two Volume Set - R. Garcia-Rojo 2005-07-01

This volume contains the proceedings of the Fifth International Conference on the Micromechanics of Granular Media, Powders and Grains 2005. Powders and Grains is an international scientific conference held every 4 years that brings together engineers and physicists interested in the micromechanics of granular media.The book is a guide to the hotte

Preclinical Development Handbook - Shayne Cox Gad 2008-03-14

A clear, straightforward resource to guide you through preclinical drug development Following this book's step-by-step guidance, you can successfully initiate and complete critical phases of preclinical drug development. The book serves as a basic, comprehensive reference to prioritizing and optimizing leads, dose formulation, ADME, pharmacokinetics, modeling, and regulations. This authoritative, easy-to-use resource covers all the issues that need to be considered and provides detailed instructions for current methods and techniques. Each chapter is written by one or more leading experts in the field. These authors, representing the many disciplines involved in preclinical toxicology screening and testing, give you the tools needed to apply an effective multidisciplinary approach. The editor has carefully reviewed all the chapters to ensure that each one is thorough, accurate, and clear. Among the key topics covered are: * Modeling and informatics in drug design * Bioanalytical chemistry * Absorption of drugs after oral administration * Transporter interactions in the ADME pathway of drugs * Metabolism kinetics * Mechanisms and consequences of drug-drug interactions Each chapter offers a full exploration of problems that may be encountered and their solutions. The authors also set forth the limitations of various methods and techniques used in determining the safety and efficacy of a drug during the preclinical stage. This publication should be readily accessible to all pharmaceutical scientists involved in preclinical testing, enabling them to perform and document preclinical safety tests to meet all FDA requirements before clinical trials may begin.

Biomass Densification - Jaya Shankar Tumuluru 2021-01-26

This monograph discusses the various biomass feedstocks currently available for biofuels production, and mechanical preprocessing technologies to reduce the feedstock variability for biofuels applications. Variability in the properties of biomass—in terms of moisture, particle size distribution, and low-density—results in storage, transportation, handling, and feeding issues. Currently, biorefineries face serious particle bridging issues, uneven discharge, jamming of equipment, and transportation problems. These issues must be solved in order for smooth operations to be possible. Mechanical preprocessing technologies, such as size reduction, densification, and moisture management using drying and dewatering, can help to overcome these issues. Many densification systems exist that will assist in converting low-density biomass to a high-density commodity type feedstock. In 6 chapters, the impact of densification process variables, such as temperature, pressure, moisture, etc., on biomass particle agglomeration, the quality of the densified products, and the overall energy consumption of the process are discussed, as are the various compression models for powders that can be used for biomass particles agglomeration behavior

and optimization of the densification process using statistical and evolutionary methods. The suitability of these densified products for biochemical and thermochemical conversion pathways is also discussed, as well as the various international standards (CEN and ISO) they must adhere to. The author has worked on biomass preprocessing at Idaho National Laboratory for the last ten years. He is the principal investigator for the U.S. Department of Energy Bioenergy Technologies Office-funded “Biomass Size Reduction and Densification” project. He has developed preprocessing technologies to reduce cost and improve quality. The author has published many papers and books focused on biomass preprocessing and pretreatments. Biomass process engineers and biorefinery managers can benefit from this book. Students in chemical, mechanical, biological, and environmental engineering can also use the book to understand preprocessing technologies, which greatly assist in improving the biomass critical material attributes. The book can help policymakers and energy systems planners to understand the biomass properties limitations and technologies to overcome the same.

Pharmaceutical Dosage Forms - Tablets - Larry L. Augsburger 2016-04-19

The ultimate goal of drug product development is to design a system that maximizes the therapeutic potential of the drug substance and facilitates its access to patients. Pharmaceutical Dosage Forms: Tablets, Third Edition is a comprehensive resource of the design, formulation, manufacture, and evaluation of the tablet dosage form, an

Developing Solid Oral Dosage Forms - Yihong Qiu 2009-03-10

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 product development. The objective 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 investigation, 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 It covers a broad scope of 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 from industry, academia and regulatory agencies

Particulate Interactions in Dry Powder Formulation for Inhalation - Xian Ming Zeng 2000-10-26

Interactions between drug particulates are crucial in determining drug dispersion and deaggregation, and ultimately delivery efficiency. This book combines principles established in surface and colloidal chemistry with pharmaceutical powder technology. It discusses some of the factors affecting particulate interactions, and particle-fluid interaction in the respiratory tract. It review some of the studies carried out in dry powder formulation development, and proposes possible strategies in improving DPI efficiency. The majority of these principles are applicable to other pharmaceutical solid dosage forms (e.g. tablets and capsules).

Chemical Engineering in the Pharmaceutical Industry - Mary T. am Ende 2019-04-09

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.

Modern Pharmaceutics, Two Volume Set - Alexander T. Florence 2016-04-19

This new edition brings you up-to-date on the role of pharmaceutics and its future paradigms in the design of medicines. Contributions from over 30 international thought leaders cover the core disciplines of pharmaceutics and the impact of biotechnology, gene therapy, and cell therapy on current findings. Modern Pharmaceutics helps you stay current

Aulton's Pharmaceutics E-Book - Kevin M.G. Taylor 2021-04-23

The essential pharmaceutics textbook One of the world’s best-known texts on pharmaceutics, Aulton's Pharmaceutics offers a complete course in one book for students in all years of undergraduate pharmacy and pharmaceutical sciences degrees. Thoroughly revised, updated and extended by experts in their fields and edited by Professors Kevin Taylor and Michael Aulton, this new edition includes the science of formulation, pharmaceutical manufacturing and drug delivery. All aspects of pharmaceutics are covered in a clear and readily accessible way and extensively illustrated throughout, providing an essential companion to the entire pharmaceutics curriculum from day one until the end of the course. Fully updated throughout, with the addition of new chapters, to reflect advances in formulation and drug delivery science, pharmaceutical manufacturing and medicines regulation Designed and written for newcomers to the design and manufacture of dosage forms Relevant pharmaceutical science covered throughout Includes the science of formulation and drug delivery Reflects current practices and future applications of formulation and drug delivery science to small drug molecules, biotechnology products and nanomedicines Key points boxes throughout Over 400 online multiple choice questions

Discovering and Developing Molecules with Optimal Drug-Like Properties - Allen C Templeton 2014-10-31

This authoritative volume provides a contemporary view on the latest research in molecules with optimal drug-like properties. It is a valuable source to access current best practices as well as new research techniques and strategies. Written by leading scientists in their fields, the text consists of fourteen chapters with an underlying theme of early collaborative opportunities between pharmaceutical and discovery sciences. The book explores the practical realities of performing physical pharmaceutical and biopharmaceutical research in the context of drug discovery with short timelines and low compound availability. Chapters cover strategies and tactics to enable discovery as well as predictive approaches to establish, understand and communicate risks in early development. It also examines the detection, characterization, and assessment of risks on the solid state properties of advanced discovery and early development candidates, highlighting the link between solid state properties and critical development parameters such as solubility and stability. Final chapters center on techniques to improve molecular solubilization and prevent precipitation, with particularly emphasis on linking physiochemical properties of molecules to formulation selection in preclinical and clinical settings.

Pharmaceutical Formulation Design - Usama Ahmad 2020-02-05

Pharmaceutical formulations have evolved from simple and traditional systems to more modern and complex novel dosage forms. Formulation development is a tedious process and requires an enormous

amount of effort from many different people. Developing a stable novel dosage form and further targeting it to the desired site inside the body has always been a challenge. The purpose of this book is to bring together scholarly articles that highlight recent developments and trends in pharmaceutical formulation science. Each article has been written by authors specializing in the subject area and hailing from top institutions around the world. The book has been written in a systematic and lucid style explaining all basic concepts and fundamentals in a very simple way. This book aims to serve the need of all individuals involved at any level in the pharmaceutical dosage form development. I sincerely hope that the book will be liked by inquisitive students and learned colleagues.

Pharmaceutical Preformulation and Formulation - Mark Gibson 2016-04-19

Pharmaceutical Preformulation and Formulation: A Practical Guide from Candidate Drug Selection to Commercial Dosage Form reflects the mounting pressure on pharmaceutical companies to accelerate the new drug development and launch process, as well as the shift from developing small molecules to the growth of biopharmaceuticals. The book meets the need for advanced information for drug preformulation and formulation and addresses the current trends in the continually evolving pharmaceutical industry. Topics include: Candidate drug selection Drug discovery and development Preformulation predictions and drug selections Product design to commercial dosage form Biopharmaceutical support in formulation Development The book is ideal for practitioners working in the pharmaceutical arena—including R&D scientists, technicians, and managers—as well as for undergraduate and postgraduate courses in industrial pharmacy and pharmaceutical technology.

Continuous Manufacturing of Pharmaceuticals - Peter Kleinebudde 2017-09-05

A comprehensive look at existing technologies and processes for continuous manufacturing of pharmaceuticals As rising costs outpace new drug development, the pharmaceutical industry has come under intense pressure to improve the efficiency of its manufacturing processes. Continuous process manufacturing provides a proven solution. Among its many benefits are: minimized waste, energy consumption, and raw material use; the accelerated introduction of new drugs; the use of smaller production facilities with lower building and capital costs; the ability to monitor drug quality on a continuous basis; and enhanced process reliability and flexibility. Continuous Manufacturing of Pharmaceuticals prepares professionals to take advantage of that exciting new approach to improving drug manufacturing efficiency. This book covers key aspects of the continuous manufacturing of pharmaceuticals. The first part provides an overview of key chemical engineering principles and the current regulatory environment. The second covers existing technologies for manufacturing both small-molecule-based products and protein/peptide products. The following section is devoted to process analytical tools for continuously operating manufacturing environments. The final two sections treat the integration of several individual parts of processing into fully operating continuous process systems and summarize state-of-art approaches for innovative new manufacturing principles. Brings together the essential know-how for anyone working in drug manufacturing, as well as chemical, food, and pharmaceutical scientists working on continuous processing Covers chemical engineering principles, regulatory aspects, primary and secondary manufacturing, process analytical technology and quality-by-design Contains contributions from researchers in leading pharmaceutical companies, the FDA, and academic institutions Offers an extremely well-informed look at the most promising future approaches to continuous manufacturing of innovative pharmaceutical products Timely, comprehensive, and authoritative, Continuous Manufacturing of Pharmaceuticals is an important professional resource for researchers in industry and academe working in the fields of pharmaceuticals development and manufacturing.

Basic Principles of Formulation Types - Tharwat F. Tadros 2018-05-22

Volume 2 of Formulation Science and Technology is a survey of the different types of formulations used in the chemical industry and offers numerous real-world examples of foams, gels, latexes etc. It offers in-depth explanations for research scientists, universities, and industry practitioners looking for a complete understanding of which type formulation works best for a certain application and why.

Encyclopedia of Pharmaceutical Technology - James Swarbrick 2013-07-01

Presenting authoritative and engaging articles on all aspects of drug development, dosage, manufacturing, and regulation, this Third Edition enables the pharmaceutical specialist and novice alike to keep abreast of developments in this rapidly evolving and highly competitive field. A dependable reference tool and constant companion for years to com

Handbook of Pharmaceutical Granulation Technology - Dilip M. Parikh 2021-05-12

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

Handbook of Modern Pharmaceutical Analysis - Satinder Ahuja 2010-11-11

Handbook of Modern Pharmaceutical Analysis, Second Edition, synthesizes the complex research and recent changes in the field, while covering the techniques and technology required for today's laboratories. The work integrates strategy, case studies, methodologies, and implications of new regulatory structures, providing complete coverage of quality assurance from the point of discovery to the point of use. Treats pharmaceutical analysis (PA) as an integral partner to the drug development process rather than as a service to it Covers method development, validation, selection, testing, modeling, and simulation studies combined with advanced exploration of assays, impurity testing, biomolecules, and chiral separations Features detailed coverage of QA, ethics, and regulatory guidance (quality by design, good manufacturing practice), as well as high-tech methodologies and technologies from "lab-on-a-chip" to LC-MS, LC-NMR, and LC-NMR-MS

Handbook of Polymers for Pharmaceutical Technologies, Processing and Applications - Vijay Kumar Thakur 2015-07-27

Polymers are one of the most fascinating materials of the present era finding their applications in almost every aspects of life. Polymers are either directly available in nature or are chemically synthesized and used depending upon the targeted applications.Advances in polymer science and the introduction of new polymers have resulted in the significant development of polymers with unique properties. Different kinds of polymers have been and will be one of the key in several applications in many of the advanced pharmaceutical research being carried out over the globe. This 4-partset of books contains precisely referenced chapters, emphasizing different kinds of polymers with basic fundamentals and practicality for application in diverse pharmaceutical technologies. The volumes aim at explaining basics of polymers based materials from different resources and their chemistry along with practical applications which present a future direction in the pharmaceutical industry. Each volume offer deep insight into the subject being treated. Volume 1: Structure and Chemistry Volume 2: Processing and Applications Volume 3: Biodegradable Polymers Volume 4: Bioactive and Compatible Synthetic/Hybrid Polymers

Pharmaceutical Powder Compaction Technology, Second Edition - Metin Çelik 2016-04-19

Compaction of powder constituents—both active ingredient and excipients—is examined to ensure consistent and reproducible disintegration and dispersion profiles. Revised to reflect modern pharmaceutical compacting techniques, this second edition of Pharmaceutical Powder Compaction Technology guides pharmaceutical engineers, formulation scientists, and product development and quality assurance personnel through the compaction formulation process and application. This unique reference covers: The physical structure of pharmaceutical compacts Bonding phenomena that occur during powder compaction Compression mechanisms of pharmaceutical particles Theories and basic principles of powder compaction New topics include: Compaction data analysis techniques The migration of powder constituents into commercial manufacture Instrumentation for compaction Compaction functionality testing, which is likely to become a USP requirement Design space for compaction Metrics required for scalability in tablet compression Interactive compaction and preformulation database for commonly used excipients

Confectionery Science and Technology - Richard W. Hartel 2017-10-09

This book examines both the primary ingredients and the processing technology for making candies. In the first section, the chemistry, structure, and physical properties of the primary ingredients are described, as are the characteristics of commercial ingredients. The second section explores the processing steps for each of the major sugar confectionery groups, while the third section covers chocolate and coatings. The manner in which ingredients function together to provide the desired texture and sensory properties of the product is analyzed, and chemical reactions and physical changes that occur during processing are examined. Trouble shooting and common problems are also discussed in each section. Designed as a complete reference and guide, Confectionery Science and Technology provides personnel in industry with solutions to the problems concerning the manufacture of high-quality confectionery products.

Pharmaceutical Capsules - Fridrun Podczeck 2004

Updated and expanded second edition covers all aspects of capsule technology, including history, standards, methods and equipment used in manufacture, filling, printing, weighing, cleaning and inspecting of both hard and soft capsules.

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.

Continuous Pharmaceutical Processing - Zoltan K Nagy 2020-06-10

Continuous pharmaceutical manufacturing is currently receiving much interest from industry and regulatory authorities, with the joint aim of allowing rapid access of novel therapeutics and existing medications to the public, without compromising high quality. Research groups from different academic institutions have significantly contributed to this field with an immense amount of published research addressing a variety of topics related to continuous processing. The book is structured to have individual chapters on the different continuous unit operations involved in drug substance and drug product manufacturing. A wide spectrum of topics are covered, including basic principles of continuous manufacturing, applications of continuous flow chemistry in drug synthesis, continuous crystallization, continuous drying, feeders and blenders, roll compaction and continuous wet granulation.The underlying theme for each of these chapters is to present to the reader the recent advances in modeling, experimental investigations and equipment design as they pertain to each individual unit operation. The book also includes chapters on quality by design (QbD) and process analytical technology (PAT) for continuous processing, process control strategies including new concepts of quality-by-control (QbC), real-time process management and plant optimization, business and supply chain considerations related to continuous manufacturing as well as safety guidelines related to continuous chemistry. A separate chapter is dedicated to discussing regulatory aspects of continuous manufacturing, with description of current regulatory environment quality/GMP aspects, as well as regulatory gaps and challenges. Our aim from publishing this book is to make it a valuable reference for readers interested in this topic, with a desire to gain a fundamental understanding of engineering principles and mechanistic studies utilized in understanding and developing continuous processes. In addition, our advanced readers and practitioners in this field will find that the technical content of Continuous Pharmaceutical Processing is at the forefront of recent technological advances, with coverage of future prospects and challenges for this technology.

Polymorphism in the Pharmaceutical Industry - Rolf Hilfiker 2019-04-29

"Polymorphism in the Pharmaceutical Industry - Solid Form and Drug Development" highlights the relevance of polymorphism in modern pharmaceutical chemistry, with a focus on quality by design (QbD) concepts. It covers all important issues by way of case studies, ranging from properties and crystallization, via thermodynamics, analytics and theoretical modelling right up to patent issues. As such, the book underscores the importance of solid-state chemistry within chemical and pharmaceutical development. It emphasizes why solid-state issues are important, the approaches needed to avoid problems and the opportunities offered by solid-state properties. The authors include true polymorphs as well as solvates and hydrates, while providing information on physicochemical properties, crystallization thermodynamics, quantum-mechanical modelling, and up-scaling. Important analytical tools to characterize solid-state forms and to quantify mixtures are summarized, and case studies on solid-state development processes in industry are also provided. Written by acknowledged experts in the field, this is a high-quality reference for researchers, project managers and quality assurance managers in pharmaceutical, agrochemical and fine chemical companies as well as for academics and newcomers to organic solid-state chemistry.

Aulton's Pharmaceutics - Michael E. Aulton 2013

"Pharmaceutics is the art of pharmaceutical preparations. It encompasses design of drugs, their manufacture and the elimination of micro-organisms from the products. This book encompasses all of these areas."--Provided by publisher.