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Encyclopedia of Food Chemistry 2018-11-22 Encyclopedia of Food Chemistry, Three Volume Set is the ideal primer for food scientists, researchers, students and young professionals who want to acquaint themselves with food chemistry. Well-organized, clearly written, and abundantly referenced, the book provides a foundation for readers to understand the principles, concepts, and techniques used in food chemistry applications. Articles are written by international experts and cover a wide range of topics, including food chemistry, food components and their interactions, properties (flavor, aroma, texture) the structure of food, functional foods, processing, storage, nanoparticles for food use, antioxidants, the Maillard and Strecker reactions, process derived contaminants, and the detection of economically-motivated food adulteration. The encyclopedia will provide readers with an introduction to specific topics within the wider context of food chemistry, as well as helping them identify the links between the various sub-topics. Offers readers a comprehensive understanding of food chemistry and the various connections between the sub-topics Provides an authoritative introduction for non-specialists and readers from undergraduate levels and upwards Meticulously organized, with articles structured logically based on the various elements of food chemistry

Practical Guide to Hot-Melt Extrusion Mohammed Maniruzzaman 2015-07-22 Over the past few decades, hot-melt extrusion (HME) techniques have been shown to exhibit remarkable potential for the manufacture of various pharmaceutical products. HME is an emerging processing technology used primarily for the manufacture of pharmaceutical solid dispersions, combining the advantages of a solvent-free process with fewer production steps making it suitable for easy to scale-up and continuous manufacturing applications. A single unit HME based operation, employing heat and mechanical shear, has displayed a significant potential to retain the stability even of thermo-labile therapeutics e.g., proteins. HME has now explicitly been established from a quality-by-design viewpoint for in-line data monitoring as per the recent guidelines issued by the US Food and Drugs Administration (FDA).This book will focus primarily on the foregoing subject areas and will be of significant interest to a broad/interdisciplinary readership across the industries and academia for, (but not limited to) the following reasons:- Emerging HME processes and applications for multiple drug delivery.- Solid-state engineering, solubility enhancement, controlled release, taste masking and sustained release case studies from a continuous manufacturing view-point.- Means to explore the potential of continuous manufacture of co-crystals for promoting solvent free production methods.- Scale-up case study and issue considerations and studies on the regulatory guidelines (FDA) for continuous manufacturing involving emerging HME techniques.

Kirk-Othmer Food and Feed Technology, 2 Volume Set Wiley 2007-12-14 This two-volume set features selected articles from the Fifth Edition of Wiley's prestigious Kirk-Othmer Encyclopedia of Chemical Technology. This compact reference features the same breadth and quality of coverage found in the original, but with a focus on topics of particular interest to food technologists, chemists, chemical and process engineers, consultants, and researchers and educators in food and agricultural businesses, alcohol and beverage industries, and related fields.

Applied Pharmaceutics in Contemporary Compounding Robert P. Shrewsbury 2015-01-01 Applied Pharmaceutics in Contemporary Compounding, Third Edition is designed to convey a fundamental understanding of the principles and practices involved in both the development and the production of compounded dosage forms by applying pharmaceutical principles.

Voigt's Pharmaceutical Technology Alfred Fahr 2018-01-17 A textbook which is both comprehensive and comprehensible and that offers easy but scientifically sound reading to both students and professionals Now in its 12th edition in its native German, Voigt's Pharmaceutical Technology is an interdisciplinary textbook covering the fundamental principles of pharmaceutical technology. Available for the first time in English, this edition is produced in full colour throughout, with a concise, clear structure developed after consultation with students, instructors and researchers. This book: Features clear chapter layouts and easily digestible content Presents novel trends, devices and processes Discusses classical and modern manufacturing processes Covers all formulation principles including tablets, ointments, capsules, nanosystems and biopharmaceutics Takes account of legal requirements for both qualitative and quantitative composition Addresses quality assurance considerations Uniquely relates contrasting international pharmacopeia from EU, US and Japan to formulation principles Includes examples and text boxes for quicker data assimilation Written for both students studying pharmacy and industry professionals in the field as well as toxicologists, biochemists, medical lab technicians, Voigt’s Pharmaceutical Technology is the essential resource for understanding the various aspects of pharmaceutical technology.

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

Official Gazette of the United States Patent and Trademark Office 1996

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.

Oral Lipid-Based Formulations David J. Hauss 2007-06-08 Oral lipid-based formulations are attracting considerable attention due to their capacity to facilitate gastrointestinal absorption and reduce or eliminate the effect of food on the absorption of poorly water-soluble, lipophilic drugs. Despite the obvious and demonstrated utility of these formulations for addressing a persistent and growing problem

Crystallization of Lipids Kiyotaka Sato 2018-04-23 An authoritative reference that contains the most up-to-date information knowledge, approaches, and applications of lipid crystals Crystallization of Lipids is a comprehensive resource that offers the most current and emerging knowledge, techniques and applications of lipid crystals. With contributions from noted experts in the field, the text covers the basic research of polymorphic structures, molecular interactions, nucleation and crystal growth and crystal network formation of lipid crystals which comprise main functional materials employed in food, cosmetic and pharmaceutical industry. The authors highlight trans-fat alternative and saturated-fat reduction technology to lipid crystallization. These two issues are the most significant challenges in the edible-application technology of lipids, and a key solution is lipid crystallization. The text focuses on the crystallization processes of lipids under various external influences of thermal fluctuation, ultrasound irradiation, shear, emulsification and additives. Designed

to be practical, the book's information can be applied to realistic applications of lipids to foods, cosmetic and pharmaceuticals. This authoritative and up-to-date guide: Highlights cutting-edge research tools designed to help analyse lipid crystallization with the most current and the conventional techniques Offers a thorough review of the information, techniques and applications of lipid crystals Includes contributions from noted experts in the field of lipid crystals Presents cutting-edge information on the topics of trans-fat alterative and saturated-fat reduction technology Written for research and development technologists as well as academics, this important resource contains research on lipid crystals which comprise the main functional materials employed in food, cosmetic and pharmaceutical industry.

Hot-Melt Extrusion Dennis Douroumis 2012-06-25 Hot-melt extrusion (HME) - melting a substance and forcing it through an orifice under controlled conditions to form a new material - is an emerging processing technology in the pharmaceutical industry for the preparation of various dosage forms and drug delivery systems, for example granules and sustained release tablets. Hot-Melt Extrusion: Pharmaceutical Applications covers the main instrumentation, operation principles and theoretical background of HME. It then focuses on HME drug delivery systems, dosage forms and clinical studies (including pharmacokinetics and bioavailability) of HME products. Finally, the book includes some recent and novel HME applications, scale -up considerations and regulatory issues. Topics covered include: principles and die design of single screw extrusion twin screw extrusion techniques and practices in the laboratory and on production scale HME developments for the pharmaceutical industry solubility parameters for prediction of drug/polymer miscibility in HME formulations the influence of plasticizers in HME applications of polymethacrylate polymers in HME HME of ethylcellulose, hypromellose, and polyethylene oxide bioadhesion properties of polymeric films produced by HME taste masking using HME clinical studies, bioavailability and pharmacokinetics of HME products injection moulding and HME processing for pharmaceutical materials laminar dispersive & distributive mixing with dissolution and applications to HME technological considerations related to scale-up of HME processes devices and implant systems by HME an FDA perspective on HME product and process understanding improved process understanding and control of an HME process with near-infrared spectroscopy Hot-Melt Extrusion: Pharmaceutical Applications is an essential multidisciplinary guide to the emerging pharmaceutical uses of this processing technology for researchers in academia and industry working in drug formulation and delivery, pharmaceutical engineering and processing, and polymers and materials science. This is the first book from our brand new series Advances in Pharmaceutical Technology. Find out more about the series here.

PISA Take the Test Sample Questions from OECD's PISA Assessments OECD 2009-02-02 This book presents all the publicly available questions from the PISA surveys. Some of these questions were used in the PISA 2000, 2003 and 2006 surveys and others were used in developing and trying out the assessment.

Ibuprofen K. D. Rainsford 2015-09-08 Ibuprofen has become one of the foremost pain-relieving medications world-wide with its proven safety and efficacy in a wide variety of painful and inflammatory conditions. It has also been widely investigated for application in a variety of painful and non-pain inflammatory states including cancer and neurodegenerative conditions, reflecting the unique and novel properties of the drug that would never have been foreseen from knowledge of the properties when it was initially discovered. Edited by leading world expert with over 40 years record in research, teaching and as a scientific advisor in the field of anti-inflammatory/analgesic agents. Professor Kim Rainsford is also the founding Editor-in-Chief of the journal, Inflammopharmacology, as well as being an Associate Editor of The Journal of Pharmacy & Pharmacology. Provides a thorough coverage of the medicinal chemistry and pharmaceutics of ibuprofen, and its pharmacokinetics in both humans and animals. Includes molecular, pharmacological and toxicological studies, and discusses the safety and efficacy of non-prescription ibuprofen, including its side effects. Ibuprofen: Discovery, Development & Therapeutics provides a definitive reference on all the main aspects of the chemical and pharmaceutical properties, mechanisms of action and therapeutic uses of ibuprofen including its role in the prevention and treatment of rheumatic conditions, cancer and neurodegenerative conditions such as Alzheimer's and Parkinson's diseases. The book has its origins in a volume first published in 1999, since when there have been considerable advances in research and clinical studies on ibuprofen in the treatment of many inflammatory and even non-inflammatory states. This book will prove invaluable to scientists, clinicians, pharmacists and all those who need to know about the actions and uses of anti-inflammatory and analgesic drugs.

Active Packaging for Food Applications Aaron L. Brody 2001-06-08 Based on thousands of citations from peer-reviewed, trade, commercial, and patent literature and interviews with those who have worked in the laboratory, in pilot plants, and in production, Active Packaging for Food Applications provides a state-of-the-art guide to understanding and utilizing these technologies. The book highlights technologies that are currently in commercial use or have the potential to become commercial, including oxygen scavenging, moisture control, ethylene removal from fresh food, antimicrobials, odor removal, and aroma emission. In addition, it explores the pros and cons involved in using antimicrobial agents in package materials. Active Packaging for Food Applications provides you with a detailed guide and reference to the technologies - and their applications - involved in enhancing food and beverage preservation.

The Theory and Practice of Industrial Pharmacy Leon Lachman 1986

Cooking for Geeks Jeff Potter 2010-07-20 Presents recipes ranging in difficulty with the science and technology-minded cook in mind, providing the science behind cooking, the physiology of taste, and the techniques of molecular gastronomy.

Handbook of Drug Administration via Enteral Feeding Tubes, 3rd edition Rebecca White 2015-03-11 With over 400 drug monographs, this book covers the technical, practical and legal aspects that you should consider before prescribing or administering drugs via enteral feeding tubes.

Novel Drug Delivery Technologies Ambikanandan Misra 2020-02-12 The application of drug delivery is a valuable, cost-effective lifecycle management resource. By endowing drugs with new and innovative therapeutic benefits, drug delivery systems extend products' profitable lifecycle, giving pharmaceutical companies competitive and financial advantages, and providing patients with improved medications. Formulation development is now being used to create new dosage forms for existing products, which not only reduces the time and expense involved in new drug development, but also helps with regard to patent protection and bypassing existing patents. Today's culture demands convenience, a major factor determining adherence to drug therapy. Over the past few years, patient convenience-oriented research in the field of drug delivery has yielded a range of innovative drug-delivery options. As a result, various drug-delivery systems, including medicated chewing gums, oral dispersible tablets, medicated lozenges and lollipops, have now hit the market and are very popular. These dosage forms offer a highly convenient way to dose medications, not only for special population groups with swallowing difficulties, such as children and the elderly, but for the general populace as well. This book provides valuable insights into a number of formulation design approaches that are currently being used, or could be used, to provide new benefits from existing drug molecules.

Development of Hot-melt Extrusion as a Novel Technique for the Formulation of Oral Solid Dosage Forms Mohammed Maniruzzaman 2012 Hot-melt extrusion (HME) is one of the most widely used technologies in the plastic, rubber and food industries and it has also been extensively explored and used in academia and the pharmaceutical industry over the last decade. This project aims to investigate the efficiency of hydrophilic polymers to enhance the dissolution rate of poorly water-soluble APIs processed by HME. Indomethacin (INM) and famotidine (FMT) were selected as model active substances while polyvinyl caprolactam graft copolymer, Soluplus® (SOL) and vinylpyrrolidone-vinyl acetate copolymer grades Kollidon® VA64 (VA64) and Plasdone® S630 (S630) were used as hydrophilic polymeric carriers. For the purpose of the study, all drug-polymer binary blends at various ratios were processed by a Randcastle single screw extruder. The physico-chemical properties and the morphology of the extrudates were evaluated via x-ray powder diffraction (XRPD), differential scanning calorimetry (DSC) and scanning electron microscopy (SEM). INM and FMT exhibited strong plasticization effects at specific concentrations and were found to be molecularly dispersed within the polymer blends. The in vitro dissolution studies showed increased INM/FMT release rates for all formulations compared to that of pure APIs alone. Ibuprofen was also embedded in a methacrylate copolymer (Eudragit® EPO) matrix to produce solid dispersions by hot-melt extrusion processing. The obtained granules were incorporated into orally disintegrating tablets (ODTs). The tablets were developed by varying the ratio of superdisintegrants such as sodium croscarmellose and cross-linked polyvinylpyrrolidone while a direct compression process was used to compress the ODTs under various compaction forces to optimize tablet robustness. The properties of the compressed tablets which included porosity, hardness, and friability and dissolution profiles were further evaluated and compared with commercially available Nurofen® Meltlet ODTs. In vitro dissolution of the extruded ODTs showed rapid release of ibuprofen compared to that of Nurofen® Meltlets. The in vitro and in vivo evaluation of the masking efficiency of hot melt extruded paracetamol (PMOL) formulations was examined. Extruded granules containing high PMOL loadings in Eudragit EPO® (EPO) or Kollidon® VA64 (VA64) were prepared by HME. Similarly propranolol HCl (PRP), diphenhydramine HCl (DPD), cetirizine HCl (CTZ) and verapamil HCl (VRP) were used as model cationic active substances while pH sensitive anionic methacrylic acid based methyl methacrylate coplolymers Eudragit® L100 (L100) and ethyl acrylate copolymer Eudragit® L100-55 (Acryl-EZE®) (L100-55) were used as polymeric carriers in order to produce taste masked extruded formulations determining drug-polymers intermolecular interactions. The taste masking effect of the processed formulation was evaluated in vivo by a panel of six healthy human volunteers. In addition, in vitro evaluation was carried out by an Astree e-tongue (Alpha MOS) equipped with seven sensors and Taste Sensing System TS5000Z (INSENT), respectively. The taste and sensory evaluation in human volunteers demonstrated that the formulation masked the bitter taste of the APIs and improved tablet palatability. In addition to that the taste sensing technology demonstrated taste improvement for all polymers by correlating the data obtained for the placebo polymers and the pure APIs alone. The e-tongue results were in good agreement with the in vivo evaluation. Molecular modelling (Gaussian 09) predicted the existence of two possible H-bonding types while Fourier Transform Infra-Red (FT-IR) and NMR studies confirmed drug-polymer interactions between the functional groups of both components (cationic drugs-anionic polymers). Furthermore, the intermolecular interactions evaluated by Flory-Huggins interaction parameters theory and X-ray photoelectron spectroscopy (XPS) showed stronger interactions between drug-polymer in L100 systems compared to that of L100-55 systems. The mechanism of the intermolecular interactions derived from this research showed the presence of H bonding between the amine group of the active substances and the carboxylic groups in the polymer. Hydrocortisone (HCS) was also embedded and extruded with ethyl cellulose N10 (EC N10) or ethyl cellulose Premium 7 (EC P7) in order to develop sustained release tablets processed by HME. The compressed tablets were subsequently coated with an enteric coating polymer, Eudragit® S100 (15-20%), which showed sustained release over 12 hrs with a lag time of 2 hrs. Further analysis of the release mechanism of HCS from tablets was performed by implementing five different kinetic release models which confirmed that the release of HCS from both coated and uncoated tablets followed a first order kinetic model.

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

Introduction To Novel Drug Delivery System Mr. Nakul P Kathar 2023-04-18 Evolution of an existing drug molecule from a conventional form to a novel delivery system can significantly improve its performance in terms of patient compliance, safety and efficacy. In the form of a Novel Drug Delivery System an existing drug molecule can get a new life. An appropriately designed Novel Drug Delivery System can be a major advance for solving the problems related towards the release of the drug at specific site with specific rate. A novel drug delivery system refers to strategy, technology, formulation based approaches and customized system(s) developed for safe administration and within body transportation of drugs as needed for optimum therapeutic benefits while ensuring minimum to nil toxic effects. This book has been written in accordance with the current syllabus prescribed for B.Pharma students. Keeping in view the requirements of students and teachers, this book has been written to cover all the topics in an easy-to-comprehend manner, and it provides the students fundamentals of novel drug delivery system, polymers used, their formulation and evaluation which are required by them during their pharmaceutical career.

Handbook of Fillers, Extenders, and Diluents Michael Ash 2007

Hot-Melt Extrusion Dennis Douroumis 2012-04-24 Hot-melt extrusion (HME) - melting a substance and forcing it through an orifice under controlled conditions to form a new material - is an emerging processing technology in the pharmaceutical industry for the preparation of various dosage forms and drug delivery systems, for example granules and sustained release tablets. Hot-Melt Extrusion: Pharmaceutical Applications covers the main instrumentation, operation principles and theoretical background of HME. It then focuses on HME drug delivery systems, dosage forms and clinical studies (including pharmacokinetics and bioavailability) of HME products. Finally, the book includes some recent and novel HME applications, scale -up considerations and regulatory issues. Topics covered include: principles and die design of single screw extrusion twin screw extrusion techniques and practices in the laboratory and on production scale HME developments for the pharmaceutical industry solubility parameters for prediction of drug/polymer miscibility in HME formulations the influence of plasticizers in HME applications of polymethacrylate polymers in HME HME of ethylcellulose, hypromellose, and polyethylene oxide bioadhesion properties of polymeric films produced by HME taste masking using HME clinical studies, bioavailability and pharmacokinetics of HME products injection moulding and HME processing for pharmaceutical materials laminar dispersive & distributive mixing with dissolution and applications to HME technological considerations related to scale-up of HME

processes devices and implant systems by HME an FDA perspective on HME product and process understanding improved process understanding and control of an HME process with near-infrared spectroscopy Hot-Melt Extrusion: Pharmaceutical Applications is an essential multidisciplinary guide to the emerging pharmaceutical uses of this processing technology for researchers in academia and industry working in drug formulation and delivery, pharmaceutical engineering and processing, and polymers and materials science. This is the first book from our brand new series Advances in Pharmaceutical Technology. Find out more about the series here.

Pharmaceutical Excipients Otilia M. Y. Koo 2016-09-30 This book provides an overview of excipients, their functionalities in pharmaceutical dosage forms, regulation, and selection for pharmaceutical products formulation. It includes development, characterization methodology, applications, and up-to-date advances through the perspectives of excipients developers, users, and regulatory experts. Covers the sources, characterization, and harmonization of excipients: essential information for optimal excipients selection in pharmaceutical development Describes the physico-chemical properties and biological effects of excipients Discusses chemical classes, safety and toxicity, and formulation Addresses recent efforts in the standardization and harmonization of excipients

Advanced Materials in Drug Release and Drug Delivery Systems Katarzyna Winnicka 2021-09-03 Development of new drug molecules is costly and requires longitudinal, wide-ranging studies; therefore, designing advanced pharmaceutical formulations for existing and well-known drugs seems to be an attractive device for the pharmaceutical industry. Properly formulated drug delivery systems can improve pharmacological activity, efficacy and safety of the active substances. Advanced materials applied as pharmaceutical excipients in designing drug delivery systems can help solve problems concerning the required drug release—with the defined dissolution rate and at the determined site. Novel drug carriers enable more effective drug delivery, with improved safety and with fewer side effects. Investigations concerning advanced materials represent a rapidly growing research field in material/polymer science, chemical engineering and pharmaceutical technology. Exploring novel materials or modifying and combining existing ones is now a crucial trend in pharmaceutical technology. Eleven articles included in the the Special Issue “Advanced Materials in Drug Release and Drug Delivery Systems” present the most recent insights into the utilization of different materials with promising potential in drug delivery and into different formulation approaches that can be used in the design of pharmaceutical formulations.

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.

Biological and Biomedical Coatings Handbook Sam Zhang 2016-04-19 Written in a versatile, contemporary style that will benefit both novice and expert alike, Biological and Biomedical Coatings Handbook, Two-Volume Set covers the state of the art in the development and implementation of advanced thin films and coatings in the biological field. Consisting of two volumes—Processing and Characterization and Applications—this handbook details the latest understanding of advances in the design and performance of biological and biomedical coatings, covering a vast array of material types, including bio-ceramics, polymers, glass, chitosan, and nanomaterials. Contributors delve into a wide range of novel techniques used in the manufacture and testing of clinical applications for coatings in the medical field, particularly in the emerging area of regenerative medicine. Building on the theoretical and methodological fundamentals of coatings as presented in the first volume, Applications covers: Biological/biomedical implants and other applications of carbon-based materials Control of drug release from coatings MIcrofluidic and biosensing/bioactive coatings and applications Surfaces and coatings of orthopedic, dental, and other implants Sol–gel-derived hydroxyapatite coatings on metallic implants Impedance spectroscopy With chapters authored by world experts at the forefront of research in their respective areas, this timely set provides searing insights and practical information to explore a subject that is fundamental to the success of biotechnological pursuits.

Flavors for Nutraceutical and Functional Foods M. Selvamuthukumaran 2018-08-06 Flavors are an integral part of nutraceutical formulations. Flavors offer significant advantage to Nutraceuticals when it comes to palatability and get an edge over other products in an extremely competitive nutraceutical market. Flavors for Nutraceuticals and Functional Foods addresses different natural ingredients/botanicals used in various functional foods and nutraceutical products. The techniques of incorporating flavors in Nutraceutical products can be classified as conventional and using recently developed modern techniques such as nanotechnology are also covered in different chapters. These techniques are mainly used for masking the taste of nutraceutical and functional food products. The book discusses the basics of flavors and the significance of the flavor industry in relation to Nutraceuticals. This book covers various processes involved in incorporating flavor and improving product acceptability. It provides an overview on the potential applications of the main terpene based flavors as part of nutraceuticals formulations. This book will serve as a reference to academicians and industry people who are involved in Nutraceutical formulations and marketing.

Developing Solid Oral Dosage Forms Yihong Qiu 2016-11-08 Developing Solid Oral Dosage Forms: Pharmaceutical Theory and Practice, Second Edition illustrates how to develop high-quality, safe, and effective pharmaceutical products by discussing the latest techniques, tools, and scientific advances in preformulation investigation, formulation, process design, characterization, scale-up, and production operations. This book covers the essential principles of physical pharmacy, biopharmaceutics, and industrial pharmacy, and their application to the research and development process of oral dosage forms. Chapters have been added, combined, deleted, and completely revised as necessary to produce a comprehensive, well-organized, valuable reference for industry professionals and academics engaged in all aspects of the development process. New and important topics include spray drying, amorphous solid dispersion using hot-melt extrusion, modeling and simulation, bioequivalence of complex modified-released dosage forms, biowaivers, and much more. Written and edited by an international team of leading experts with experience and knowledge across industry, academia, and regulatory settings Includes new chapters covering the pharmaceutical applications of surface phenomenon, predictive biopharmaceutics and pharmacokinetics, the development of formulations for drug discovery support, and much more Presents new case studies throughout, and a section completely devoted to regulatory aspects, including global product regulation and international perspectives

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

Melt Extrusion Michael A. Repka 2013-10-11 This volume provides readers with the basic principles and fundamentals of extrusion technology and a detailed description of the practical applications of a variety of extrusion processes, including various pharma grade extruders. In addition, the downstream production of films, pellets and tablets, for example, for oral and other delivery routes, are presented and discussed utilizing melt extrusion. This book is the first of its kind that discusses extensively the well-developed science of extrusion technology as applied to pharmaceutical drug product development and manufacturing. By covering a wide range of relevant topics, the text brings together all technical information necessary to develop and market pharmaceutical dosage forms that meet current quality and regulatory requirements. As extrusion technology continues to be refined further, usage of extruder systems and the array of applications will continue to expand, but the core technologies will remain the same.

Nanostructures for Oral Medicine Ecaterina Andronescu 2017-04-11 Nanostructures for Oral Medicine presents an up-to-date examination of the applications and effects of nanostructured materials in oral medicine, with each chapter addressing recent developments, specific applications, and uses of nanostructures in the oral administration of therapeutic agents in dentistry. The book also includes coverage of the biocompatibility of nanobiomaterials and their remarkable potential in improving human health and in reducing environmental pollution. Emerging advances, such as Dr. Franklin Tay's concept of a new nanotechnology process of growing extremely small, mineral-rich crystals and guiding them into the demineralized gaps between collagen fibers to prevent the aging and degradation of resin-dentin bonding is also discussed. This work will be of great value to those who work in oral medicine, providing them with a resource to gain a greater understanding of how nanotechnology can help them create more efficient, cost-effective products. In addition, it will be of great interest to those who work in materials science who wish to gain a greater appreciation of how nanostructured materials are applied in this field. Outlines the major uses of nanostructured materials for oral medicine, including the properties of each material discussed and how it should best be applied Explores how nanostructured materials enable the creation of more effective drug delivery systems in oral medicine Discusses how novel uses of nanostructured materials may be applied in oral medicine to create more effective devices

Oral Drug Delivery for Modified Release Formulations Edmund S. Kostewicz 2022-04-26 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.

Developing Drug Products in an Aging Society Sven Stegemann 2016-10-20 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.

Excipient Applications in Formulation Design and Drug Delivery Ajit S Narang 2015-10-07 In recent years, emerging trends in the design and development of drug products have indicated ever greater need for integrated characterization of excipients and in-depth understanding of their roles in drug delivery applications. This book presents a concise summary of relevant scientific and mechanistic information that can aid the use of excipients in formulation design and drug delivery applications. Each chapter is contributed by chosen experts in their respective fields, which affords truly in-depth perspective into a spectrum of excipient-focused topics. This book captures current subjects of interest – with the most up to date research updates – in the field of pharmaceutical excipients. This includes areas of interest to the biopharmaceutical industry users, students, educators, excipient manufacturers, and regulatory bodies alike.

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

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

Paediatric Formulation Nunzio Denora 2021-09-02 The development of paediatric medicines can be challenging since this is a different patient population with specific needs. A medicine designed for use in paediatric patients must consider the following aspects: patient population variability; the need for dose flexibility; route of administration; patient compliance; excipient tolerability. For example, the toxicity of excipients may differ in children compared to adults and children have different taste preferences. Globally, about 75% of drugs do not

carry regulatory approval for use in children; worldwide, many medications prescribed for the treatment of paediatric diseases are used off-label, and less than 20% of package inserts have sufficient information for treating children. This book provides an update on both state-of-the-art methodology and operational challenges in paediatric formulation design and development. It aims at re-evaluating what is needed for more progress in the design and development of age-appropriate treatments for paediatric diseases, focusing on: formulation development; drug delivery design; efficacy, safety, and tolerability of drugs and excipients.

Pharmaceutical Formulation Geoffrey D Tovey 2018-06-25 Formulation is a key step in the drug design process, where the active drug is combined with other substances that maximise the therapeutic potential, safety and stability of the final medicinal product. Modern formulation science deals with biologics as well as small molecules. Regulatory and quality demands, in addition to advances in processing technologies, result in growing challenges as well as possibilities for the field. Pharmaceutical Formulation provides an up to date source of information for all who wish to understand the principles and practice of formulation in the drug industry. The book provides an understanding of the links between formulation theory and the practicalities of processing in a commercial environment, giving researchers the knowledge to produce effective pharmaceutical products that can be approved and manufactured. The first chapters introduce readers to different dosage forms, including oral liquid products, topical products and solid dosage forms such as tablets and capsules. Subsequent chapters cover pharmaceutical coatings, controlled release drug delivery and dosage forms designed specifically for paediatric and geriatric patients. The final chapter provides an introduction to the vital role intellectual property plays in drug development. Covering modern processing methods and recent changes in the regulatory and quality demands of the industry, Pharmaceutical Formulation is an essential, up to date resource for students and researchers working in academia and in the pharmaceutical industry.

Concise Encyclopedia of Biomedical Polymers and Polymeric Biomaterials Munmaya Mishra 2017-08-16 The Concise Encyclopedia of Biomedical Polymers and Polymeric Biomaterials presents new and selected content from the 11-volume Biomedical Polymers and Polymeric Biomaterials Encyclopedia. The carefully culled content includes groundbreaking work from the earlier published work as well as exclusive online material added since its publication in print. A diverse and global team of renowned scientists provide cutting edge information concerning polymers and polymeric biomaterials. Acknowledging the evolving nature of the field, the encyclopedia also features newly added content in areas such as tissue engineering, tissue repair and reconstruction, and biomimetic materials.