

Drying Kinetics Of Granular And Powdery Polymers

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Unit Operations of Particulate Solids Enrique Ortega-Rivas 2016-04-19 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.

Mathematical Modeling of Food Processing Mohammed M. Farid 2010-05-21 Written by international experts from industry, research centers, and academia, Mathematical Modeling of Food Processing discusses the physical and mathematical analysis of transport phenomena associated with food processing. The models presented describe many of the important physical and biological transformations that occur in food during proces

Polystyrene Cole Lynwood 2014-01-01 Polystyrene represents one of the oldest and the most widespread polymers in the world. Its starts as far back as 1839 when a German apothecary Edmon Simon distilled an oily liquid named styrol from the resin of Turkish sweet gum trees. In several days, the sterol converted into a jelly product that he thought resulted from the oxidation process. For that reason, the jelly product received the name styroloxide. This book discusses the synthesis of polystyrene, as well as the characteristics and applications of this polymer.

Drying in the Dairy Industry Cécile Le Floch-Fouéré 2020-11-25 With more than 12M tons of dairy powders produced each year at a global scale, the drying sector accounts to a large extent for the processing of milk and whey. It is generally considered that 40% of the dry matter collected overall ends up in a powder form. Moreover, nutritional dairy products presented in a dry form (eg, infant milk formulae) have grown quickly over the last decade, now accounting for a large share of the profit of the sector. *Drying in the Dairy Industry: From Established Technologies to Advanced Innovations* deals with the market of dairy powders issues, considering both final product and process as well as their interrelationships. It explains the different processing steps for the production of dairy powders including membrane, homogenisation, concentration and agglomeration processes. The book includes a presentation of the current technologies, the more recent development for each of them and their impact on the quality of the final powders. Lastly, one section is dedicated to recent innovations and methods

directed to more sustainable processes, as well as latter developments at lab scale to go deeper in the understanding of the phenomena occurring during spray drying. Key Features: Presents state-of-the-art information on the production of a variety of different dairy powders Discusses the impact of processing parameters and drier design on the product quality such as protein denaturation and viability of probiotics Explains the impact of drying processes on the powder properties such as solubility, dispersibility, wettability, flowability, floodability, and hygroscopicity Covers the technology, modelling and control of the processing steps This book is a synthetic and complete reference work for researchers in academia and industry in order to encourage research and development and innovations in drying in the dairy industry.

Ceramic Processing Mohamed N. Rahaman 2017-06-27 Many of the properties critical to the engineering applications of ceramics are strongly dependent on their microstructure which, in turn, is dependent on the processing methods used to produce the ceramic material. Ceramic Processing, Second Edition provides a comprehensive treatment of the principles and practical methods used in producing ceramics with controlled microstructure. Covering the main steps in the production of ceramics from powders, the book also provides succinct coverage of other methods for fabricating ceramics, such as sol–gel processing, reaction bonding, chemical vapor deposition and polymer pyrolysis. While maintaining the objectives of the successful first edition, this new edition has been revised and updated to include recent developments and expanded to feature new chapters on additives used in ceramic processing; rheological properties of suspensions, slurries, and pastes; granulation, mixing, and packing of particles; and sintering theory and principles. Intended as a textbook for undergraduate and graduate courses in ceramic processing, the book also provides an indispensable resource for research and development engineers in industry who are involved in the production of ceramics or who would like to develop a background in the processing of ceramics.

Engineered Materials Handbook: Ceramics and glasses 1987

Chemical Engineering Progress 2007

Advanced Drying Technologies, Second Edition Tadeusz Kudra 2009-02-11 Presents Drying Breakthroughs for an Array of Materials Despite being one of the oldest, most energy-intensive unit operations, industrial drying is perhaps the least scrutinized technique at the microscopic level. Yet in the wake of today's global energy crisis, drying research and development is on the rise. Following in the footsteps of the widely read first edition, Advanced Drying Technologies, Second Edition is the direct outcome of the recent phenomenal growth in drying literature and new drying hardware. This edition provides an evaluative overview of new and emerging drying technologies, while placing greater emphasis on making the drying process more energy efficient in the green age. Draws on the Authors' 60+ Years of Combined Experience Fueled by the current energy crisis and growing consumer demand for improved quality products, this thoroughly updated resource addresses cutting-edge drying technologies for numerous materials such as high-valued, heat-sensitive pharmaceuticals, nutraceuticals, and some foods. It also introduces innovative techniques, such as heat-pump drying of foods, which allow both industrial practice and research and development projects to save energy, reduce carbon footprints, and thus improve the bottom line. Four New Chapters: Spray-Freeze-Drying Fry Drying Refractance Window Drying Mechanical Thermal Expression Requiring no prior knowledge of chemical engineering, this single-source reference should assist researchers in turning the laboratory curiosities of today into the revolutionary novel drying technologies of tomorrow.

Introduction to Fluoropolymers Sina Ebnesajjad 2013-05-11 Introduction to Fluoropolymers

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demystifies fluoropolymers for a wide audience of designers, engineers, sales staff and managers. This important group of high-performance polymers has applications across a wide range of market sectors, including automotive, aerospace, medical devices, high performance apparel, oil & gas, renewable energy / solar photovoltaics, electronics / semiconductor, pharmaceuticals, and chemical processing. Dr. Ebnesajjad covers the history and applications of a wide variety of materials, including expanded polytetrafluoroethylene, polyvinyl fluoride, vinylidene fluoride polymers and fluoroelastomers, just to name a few. Properties and applications are illustrated by real-world examples as diverse as waterproof clothing, vascular grafts and coatings for aircraft interiors. The different applications of fluoropolymers show the benefits of a group of materials that are highly water-repellant and flame-retardant, with unrivalled lubrication properties and a high level of biocompatibility. Health and safety and environmental aspects are also covered throughout the book. Demystifies fluoropolymers for a broad audience of engineers in areas such as product design and manufacturing, as well as for non-engineers such as technical sales and management professionals Explains the potential of fluoropolymers for a wide range of applications across sectors such as aerospace, energy and medical devices Ideal for both recently qualified engineers and engineers with limited experience of fluoropolymers

Handbook of Industrial Drying Arun S. Mujumdar 2006-11-08 Still the Most Complete, Up-To-Date, and Reliable Reference in the Field Drying 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 technology

Polyvinyl Alcohol from Taiwan

Directory of University Professors and Researchers in Japan 1982

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.

Engineered Materials Handbook, Desk Edition ASM International. Handbook Committee 1995-11-01 A comprehensive reference on the properties, selection, processing, and applications of the most widely used nonmetallic engineering materials. Section 1, General Information and Data, contains information applicable both to polymers and to ceramics and glasses. It includes an illustrated glossary, a collection of engineering tables and data, and a guide to materials selection. Sections 2 through 7 focus on polymeric materials--plastics, elastomers, polymer-matrix composites, adhesives, and sealants--with the information largely updated and expanded from the first three volumes of the Engineered Materials Handbook. Ceramics and glasses are covered in Sections 8 through 12, also with updated and expanded information. Annotation copyright by Book News, Inc., Portland, OR

Introduction to Nanoscale Science and Technology Massimiliano Ventra 2006-04-11 From the reviews: "...A class in nanoscale science and technology is daunting for the educator, who must organize a large collection of materials to cover the field, and for the student, who must absorb all the new concepts. This textbook is an excellent resource that allows students from any engineering background to quickly understand the foundations and exciting advances of the field. The example problems with answers and the long list of references in each chapter are a big plus for course tutors. The book is organized into seven sections. The first, nanoscale fabrication and characterization, covers nanolithography, self-assembly, and scanning probe microscopy. Of these, we enjoyed the section on nanolithography most, as it includes many interesting details from industrial manufacturing processes. The chapter on self-assembly also provides an excellent overview by introducing six types of intermolecular interactions and the ways these can be employed to fabricate nanostructures. The second section covers nanomaterials and nanostructures. Out of its 110 pages, 45 are devoted to carbon nanotubes. Fullerenes and quantum dots each have their own chapter that focuses on the properties and applications of these nanostructures. Nanolayer, nanowire, and nanoparticle composites of metals and semiconductors are briefly covered (just 12 pages), with slightly more discussion of specific applications. The section on nanoscale electronics begins with a history of microelectronics before discussing the difficulties in shrinking transistor size further. The discussion of problems (leakage current, hot electrons, doping fluctuations, etc.) and possible solutions (high- k dielectrics, double-gate devices) could easily motivate deeper discussions of nanoscale electrical transport. A chapter on molecular electronics considers transport through alkanes, molecular transistors, and DNA in a simple, qualitative manner we found highly instructive. Nanoscale magnetic systems are examined in the fourth section. The concept of quantum computation is nicely presented, although the discussion of how this can be achieved with controlled spin states is (perhaps necessarily) not clear. We found the chapter on magnetic storage to be one of the most lucid in the book. The giant magnetoresistive effect, operation of spin valves, and issues in magnetic scaling are easier to understand when placed in the context of the modern magnetic hard disk drive. Micro- and nanoelectromechanical systems are covered with an emphasis on the integration of sensing, computation, and communication. Here, the student can see advanced applications of lithography. The sixth section, nanoscale optoelectronics, describes quantum dots, organic optoelectronics, and photonic crystals. The chapter on organic optoelectronics is especially clear in its discussion of the fundamentals of this complicated field. The book concludes with an overview of nanobiotechnology that covers biomimetics, biomolecular motors, and nanofluidics. Because so many authors have contributed to this textbook, it suffers a bit from repetition. However, this also allows sections to be omitted without any adverse effect on student comprehension. We would have liked to see more technology to balance the science; apart from the chapters on lithography and magnetic storage, little more than an acknowledgment is given to commercial applications. Overall, this book serves as an excellent starting point for the study of nanoscale science and technology, and we recommend it to

anyone with a modest scientific background. It is also a great vehicle to motivate the study of science at a time when interest is waning. Nanotechnology educators should look no further." (MATERIALS TODAY, June 2005)

Monthly Index of Russian Accessions 1968

Current Awareness in Particle Technology 1996

Smart Agrochemicals for Sustainable Agriculture Katarzyna Chojnacka 2021-12-15 Smart Agrochemicals for Sustainable Agriculture proposes products that fulfill the need for chemicals that provide a sustainable delivery system for nutrients necessary to maximize production of agricultural animals and plants while producing the smallest possible environmental footprint. Over the past decade, biobased chemicals have received significant attention as candidate resource materials in fertilizers and agrochemicals production due to their renewability. Substitution of conventional raw materials with biobased requires a new approach towards development of technology. On the other hand, the use of biobased chemicals, such as biostimulants, bioregulators, biofertilizers offers a host of a new palette of products which are natural and thus their application does not pose an impact on the environment (residues), nor the cultivated plants. This book addresses all aspects related to the production process, including chemical formulas, stability of formulations, and the application of the effect of its utilization. Presents ideas for new products that provide appropriate nutrition while limiting environmental footprint Includes full range of the production process from chemical formulas, to establishing the stability of formulations, application and effect Offers a host of a new products which are natural and whose application does not negatively impact the environment nor the cultivated plants

Energy Management in Plastics Processing Robin Kent 2018-07-03 Energy Management in Plastics Processing: Strategies, Targets, Techniques, and Tools, Third Edition, addresses energy benchmarking and site surveys, how to understand energy supplies and bills, and how to measure and manage energy usage and carbon footprinting. The book's approach highlights the need to reduce the kWh/kg of materials processed and the resulting permanent reductions in consumption and costs. Every topic is covered in a 2-page spread, providing the reader with clear actions and key tips for success. This revised third edition covers new developments in energy management, power supply considerations, automation, assembly operations, water footprinting, and transport considerations, and more. Users will find a practical workbook that not only shows how to reduce energy consumption in all the major plastics shaping processes (moulding, extrusion, forming), but also provides tactics that will benefit other locations in plants (e.g. in factory services and nonmanufacturing areas). Enables plastics processors in their desire to institute an effective energy management system, both in processing and elsewhere in the plant Provides a holistic perspective, shining a light on areas where energy management methods may have not been previously considered Acts as a roadmap to help companies move towards improved sustainability and cost savings

Handbook of Polymers for Pharmaceutical Technologies, Biodegradable Polymers Vijay Kumar Thakur 2015-09-22 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

Fluoroplastics, Volume 1 Sina Ebnesajjad 2000-05-01 Today, a generational change is taking place in the fluoropolymer industry. The pioneers of PTFE developed an astonishing mass of basic and applied technical work. Now many of these experts are retiring and a new generation is taking their place. This new generation brings a plethora of skills, built upon the basic knowledge of fluoropolymer technology. Speaking to the needs of today's engineering and science students and practicing professionals, this book provides an in-depth treatment of homofluoropolymer polymerization and part fabrication technology. A comprehensive range of issues surrounding the manufacturing of the monomer; polymer, fabrication, end-use, safety, and disposal are covered. The book has been arranged to allow self-managed reading and learning. It is both a source of data and a reference.

Scientific and Technical Aerospace Reports 1991-10

Drying R. B. Keey 2013-10-22 Drying Principles and Practice presents the fundamental principles that underlie drying arts as a basis for explaining the behavior of a drying plant. This book begins with an introductory chapter, followed by an account of the phenomena that causes the influence of moisture on its host material and manner in which moisture may be expelled by heat into the humid surroundings. The quantitative description of the way a moist material dries and how it dries under commercial conditions are also provided. The remainder of this text is devoted to surveying less-common methods of drying, moisture-measurement techniques, dryer-control systems, and aspects of the choice and design of industrial dryers. This publication is valuable to engineers, but is also a good source for senior undergraduate and postgraduate students engaged in studies of heat with mass transfer.

Polyvinyl Alcohol from Germany and Japan

Maro Polymer Notes 2001

Deutsche Nationalbibliografie Die deutsche Nationalbibliothek 2008

Polymer Science and Engineering National Research Council 1994-01-01 Polymers are used in everything from nylon stockings to commercial aircraft to artificial heart valves, and they have a key role in addressing international competitiveness and other national issues. Polymer Science and Engineering explores the universe of polymers, describing their properties and wide-ranging potential, and presents the state of the science, with a hard look at downward trends in research support. Leading experts offer findings, recommendations, and research directions. Lively vignettes provide snapshots of polymers in everyday applications. The volume includes an overview of the use of polymers in such fields as medicine and biotechnology, information and communication, housing and construction, energy and transportation, national defense, and environmental protection. The committee looks at the various classes of polymers—plastics, fibers, composites, and other materials, as well as polymers used as membranes and coatings—and how their composition and specific methods of processing result in unparalleled usefulness. The reader can also learn the science behind the technology, including efforts to model polymer synthesis after nature's methods, and breakthroughs in characterizing polymer properties

needed for twenty-first-century applications. This informative volume will be important to chemists, engineers, materials scientists, researchers, industrialists, and policymakers interested in the role of polymers, as well as to science and engineering educators and students.

Engineering Index 1967

Biodegradation Rolando Chamy 2013-06-14 This book contains a collection of different biodegradation research activities where biological processes take place. The book has two main sections: A) Polymers and Surfactants Biodegradation and B) Biodegradation: Microbial Behaviour.

Chemical Abstracts 2002

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

Monthly Index of Russian Accessions Library of Congress. Processing Department 1968-04

Modern Drying Technology, Volume 2 Evangelos Tsotsas 2011-02-10 This five-volume handbook provides a comprehensive overview of all important aspects of modern drying technology, including only cutting-edge results. Volume 2 comprises experimental methods used in various industries and in research in order to design and control drying processes, measure moisture and moisture distributions, characterize particulate material and the internal micro-structure of dried products, and investigate the behavior of particle systems in drying equipment. Key topics include acoustic levitation, near-infrared spectral imaging, magnetic resonance imaging, X-ray tomography, and positron emission tracking.

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 their 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

Polyvinyl Alcohol from Taiwan, Inv. 731-TA-1088 (Preliminary)

Fluoropolymer Additives Sina Ebnesajjad 2011-12-05 In this first book on an additive group of growing importance, the authors review the commercial additives available on the market. The applications chapters provide you with a step by step description of techniques to select and incorporate these additives in various products. Engineers and scientists involved in polymer processing need practical information about these additives, their applications, and proper and safe handling. Until now much of this information has been difficult to obtain because of commercial secrecy. In recent years, the applications of fluoropolymer additives have expanded significantly, with even the meaning of ‘fluoropolymer additives’ expanding from relatively the narrow definition of PTFE powder fillers to a wide variety of fluoropolymer elastomers, used as a processing aid for plastics processing such as extrusion, injection molding, and film blowing. The benefits of fluoropolymer additives used in plastics are the elimination of sharkskin defects, increases in process speed and output (up to 20%), the reduction of die build up, the reduction of gels and optical defects, etc. In addition, fluoropolymer additives are being increasingly used in inks, lubricants, and coatings. For example, in the coating industry fluoropolymer additives can increase the life cycle of exterior coatings due to their excellent weatherability and subsequently increase the time between recoats. Fluoropolymer additives are becoming more widely used with key applications including use as a polymer processing aid (increasing speed and reducing faults) and as an additive to lubricants, inks and coatings. This book is the only practical guide available to the selection and use of fluoropolymer additives, and will help readers to optimize existing fluoropolymer applications and implement new ones Fluoropolymers are known as an area where detailed information is hard to come by. In this book two former DuPont employees provide a wide range of industry sectors with the essential practical information and data they need to realize the full benefits of fluoropolymer additives Written for practicing engineers, Ebnesajjad and Morgan take a highly practical approach to the subject, based on real-world experience and case studies

Modern Drying Technology Evangelos Tsotsas 2014-04-14 These five-volume series provide a comprehensive overview of all important aspects of drying technology like computational tools at different scales (Volume 1), modern experimental and analytical techniques (Volume 2), product quality and formulation (Volume 3), energy savings (Volume 4) and process intensification (Volume 5) Based on high-level cutting-edge results contributed by internationally recognized experts in the various treated fields, this book series will help engineers achieve greater efficiency for an unavoidable, yet vital process Located at the intersection of the two main approaches in modern chemical engineering, product engineering and process systems engineering, the series brings theory into practice in order to improve the quality of high-value dried products, save energy, and cut the costs of drying processes Available in print as 5 Volume Set or as individual volumes. Buy the Set and SAVE 30%! Also available online. For further information, visit wileyonlinelibrary.com Individual volumes: Volume 1 - Modern Drying Technology, Computational Tools at Different Scales Volume 1: Diverse model types for the drying of

products and the design of drying processes (short-cut methods, homogenized, pore network, and continuous thermo-mechanical approaches) are treated, along with computational fluid dynamics, population balances, and process systems simulation tools. Emphasis is put on scale transitions. Volume 2 - Modern Drying Technology: Experimental Techniques Volume 2: Comprises experimental methods used in various industries and in research in order to design and control drying processes, measure moisture and moisture distributions, characterize particulate material and the internal micro-structure of dried products, and investigate the behavior of particle systems in drying equipment. Key topics include acoustic levitation, near-infrared spectral imaging, magnetic resonance imaging, X-ray tomography, and positron emission tracking. Volume 3 - Modern Drying Technology: Product Quality and Formulation Volume 3: Discusses how desired properties of foods, biomaterials, active pharmaceutical ingredients, and fragile aerogels can be preserved during drying, and how spray drying and spray fluidized bed processes can be used for particle formation and formulation. Methods for monitoring product quality, such as process analytical technology, and modeling tools, such as Monte Carlo simulations, discrete particle modeling and neural networks, are presented with real examples from industry and academia. Volume 4 - Modern Drying Technology: Energy Savings Volume 4: Deals with the reduction of energy demand in various drying processes and areas, highlighting the following topics: Energy analysis of dryers, efficient solid-liquid separation techniques, osmotic dehydration, heat pump assisted drying, zeolite usage, solar drying, drying and heat treatment for solid wood and other biomass sources, and sludge thermal processing. Volume 5 - Process Intensification Volume 5: Dedicated to process intensification by more efficient distribution and flow of the drying medium, foaming, controlled freezing, and the application of superheated steam, infrared radiation, microwaves, power ultrasound and pulsed electric fields. Process efficiency is treated in conjunction with the quality of sensitive products, such as foods, for a variety of hybrid and combined drying processes.

Extrusion Harold F. Giles Jr 2013-09-21 The second edition of Extrusion is designed to aid operators, engineers, and managers in extrusion processing in quickly answering practical day-to-day questions. The first part of the book provides the fundamental principles, for operators and engineers, of polymeric materials extrusion processing in single and twin screw extruders. The next section covers advanced topics including troubleshooting, auxiliary equipment, and coextrusion for operators, engineers, and managers. The final part provides applications case studies in key areas for engineers such as compounding, blown film, extrusion blow molding, coating, foam, and reprocessing. This practical guide to extrusion brings together both equipment and materials processing aspects. It covers basic and advanced topics, for reference and training, in thermoplastics processing in the extruder. Detailed reference data are provided on such important operating conditions as temperatures, start-up procedures, shear rates, pressure drops, and safety. A practical guide to the selection, design and optimization of extrusion processes and equipment Designed to improve production efficiency and product quality Focuses on practical fault analysis and troubleshooting techniques

Drying of Solids Arun S. Mujumdar 1986-10-02 International contributors give wide coverage of the latest developments in the theory and practice of the drying of solids. Drying is one of the most common and energy-intensive operations in industry, and the cost is determined by the desired level of product moisture and the unit operation of nonthermal dewatering--hence the commissioned article on a new dewatering technique. Articles are balanced between theory and applications and practicing engineers should find a wealth of useful information. Topics covered include drying theory and modelling, drying of granular solids, drying of sheets, drying of foodstuffs, drying of agricultural products, solar drying, and drying of slurries.

[Polyvinyl Alcohol from China, Japan, and Korea, Invs. 731-TA-1014, 1016 and 1017 \(Review\)](#)

