Technology In Pharmaceutical Industry

Comprehensive Quality by Design for Pharmaceutical Product Development and Manufacture
Containment Technology
The Future of Pharma
Continuous Manufacturing of Pharmaceuticals
The Transfer of Technology
Pharmaceutical Technology: Tableting Technology
Computer-Aided Applications in Pharmaceutical Technology
Pharmaceutical Quality by Design
Digital Strategies in the Pharmaceutical Industry
Drugs & Pharmaceutical Technology Handbook
An Industrial IoT Approach for Pharmaceutical Industry Growth
Patent-term Extension and the Pharmaceutical Industry
Emergence of Pharmaceutical Industry Growth with Industrial IoT Approach
Leading Pharmaceutical Innovation
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The Competitive Status of the U.S. Pharmaceutical Industry
Process Chemistry in the Pharmaceutical Industry, Volume 2
The Changing Economics of Medical Technology

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Comprehensive Quality by Design for Pharmaceutical Product Development and Manufacture CRC Press
This book covers all aspects of containment technology in depth and the latest developments in this exciting field are introduced. This book is a key publication to planning engineers, production managers and those interested in getting a picture of the different applications of the isolator technology. References on literature, laws, norms and guidelines will support the reader to become acquainted with the containment technology.
National Academies Press
Covers a widespread view of Quality by Design (QbD) encompassing the many stages involved in the development of a new drug product. The book provides a broad view of Quality by Design (QbD) and shows how QbD concepts and analysis facilitate the development and manufacture of high quality products. QbD is seen as a framework for building process understanding, for implementing robust and effective manufacturing processes and provides the underpinnings for a science-based regulation of the pharmaceutical industry. Edited by the three renowned researchers in the field, Comprehensive Quality by Design for Pharmaceutical Product Development and Manufacture guides pharmaceutical engineers and scientists involved in product and process development, as well as teachers, on how to utilize QbD practices and applications effectively while complying with government regulations. The material is divided into three main sections: the first six chapters address the role of key technologies, including process modeling, process analytical technology, automated process control and statistical methodology in supporting QbD and establishing the associated design space. The second section consisting of seven chapters present a range of thoroughly developed case studies in which the tools and methodologies discussed in the first section are used to support specific drug substance and drug-product QbD related developments. The last section discussed the needs for integrated tools and reviews the status of information technology tools available for systematic data and knowledge management to support QbD and related activities. Highlights Demonstrates Quality by Design (QbD) concepts through concrete detailed industrial case studies involving of the use of best practices and assessment of regulatory implications Chapters are devoted to applications of QbD methodology in three main processing sectors—drug substance process development, oral drug product manufacture, parenteral product processing, and solid-liquid processing Reviews the spectrum of process model types and their relevance, the range of state-of-the-art real-time monitoring tools and chemometrics, and alternative automatic process control strategies and methods for both batch and continuous processes The role of the design space is demonstrated through

specific examples and the importance of understanding the risk management aspects of design space definition is highlighted
Comprehensive Quality by Design for Pharmaceutical Product Development and Manufacture is an ideal book for practitioners, researchers, and graduate students involved in the development, research, or studying of a new drug and its associated manufacturing process.
Containment Technology CRC Press
The Third Edition presents all pharmaceutical industry personnel and those in academia with critical updates on the recent advances in granulation technology and changes in FDA regulatory guidelines. Addressing precisely how these recent innovations and revisions affect unit operation of particle generation and granulation, this text assists the re
The Future of Pharma Edward Elgar Publishing
By any standard, the pharmaceutical industry's history has been a successful one. In addition to its profits and shareholder dividends, it has been seen by investors as relatively low risk and, largely, counter-cyclical to stock market trends. However, that important contribution appears to be petering out, with significant global implications for employees, shareholders, governments and patients. This is not just caused by the economic crisis. Long before this, several distinct but related streams of evidence emerged that now point to the stalling of the pharmaceutical industry. The Future of Pharma examines the causes of the industry's potential decline and offers a convincing and rigorous analysis of the options open to it. What emerges is a landscape defined, on the one hand, by the changing marketplace of mass-market consumers, institutional healthcare systems and wealthy individuals; and on the other by the alternate sources of commercial value - innovative therapies; super-efficient processes, supply chains and operations; and closer customer relations and increasingly tailored health services. The challenges to the pharmaceutical industry now and in the medium and long-term are very significant. Brian Smith's highly readable research findings are a wake-up call and a first step forward for anyone concerned with the future of the industry; whether executive, customer, policymaker or investor.
Continuous Manufacturing of Pharmaceuticals CRC Press
Dealing exclusively with compression technology, this text reflects the continued popularity of the tablet as a drug form, and thereby the need to refine and enhance the pharmaceutical industry's knowledge of compression.
The Transfer of Technology John Wiley & Sons
The Competitive Status of the U.S. Pharmaceutical IndustryNational Academies PressResearch and Development in the Pharmaceutical IndustryPharmaceutical Technology: Tableting TechnologyCRC Press
Pharmaceutical Technology: Tableting Technology Springer Science & Business Media
The pharmaceutical industry needs a shot in the arm – and not a moment too soon. The executive suite is mired in a bygone era, a time when extensive, well-funded pharmaceutical R&D produced blockbuster drugs, kept

everything in-house and reaped the financial rewards. But that way of working needs to change. Executives now need to know what the technologists in their companies are doing in order to survive the next decade. Written for those new to industry, as well as for experienced professionals or specialists looking to expand their knowledge, this book is a must-read for business executives and information technologists alike. Pharma’s Prescription bridges the knowledge gap between current business practices and the most valuable technologies today. This book is filled with practical, real-life examples from industry and is a straightforward guide for all pharmaceutical and information technology executives who need to improve their businesses. Focuses on practical solutions that are easily incorporated in your day-to-day work Integrates business operations and information technology Highlights the industry's top turn-around stories Discusses pharmaceutical industry trends, growth opportunities, innovation drivers, regulatory complexities, and emerging market operations

Computer-Aided Applications in Pharmaceutical Technology John Wiley & Sons

Documents how science has provided an astonishing array of medicines for coping with human ailments. This volume addresses industry leaders, economic influences, and the development of individual products. It is suitable for policy makers, economists, corporate executives, research managers, and historians of science, technology, and medicine.

Pharmaceutical Quality by Design Elsevier

3D printing is forecast to revolutionise the pharmaceutical sector, changing the face of medicine development, manufacture and use. Potential applications range from pre-clinical drug development and dosage form design through to the fabrication of functionalised implants and regenerative medicine. Within clinical pharmacy practice, printing technologies may finally lead to the concept of personalised medicines becoming a reality. This volume aims to be the definitive resource for anyone thinking of developing or using 3D printing technologies in the pharmaceutical sector, with a strong focus on the translation of printing technologies to a clinical setting. This text brings together leading experts to provide extensive information on an array of 3D printing techniques, reviewing the current printing technologies in the pharmaceutical manufacturing supply chain, in particular, highlighting the state-of-the-art applications in medicine and discussing modern drug product manufacture from a regulatory perspective. This book is a highly valuable resource for a range of demographics, including academic researchers and the pharmaceutical industry, providing a comprehensive inventory detailing the current and future applications of 3D printing in pharmaceuticals. Abdul W. Basit is Professor of Pharmaceutics at the UCL School of Pharmacy, University College London. Abdul’s research sits at the interface between pharmaceutical science and gastroenterology, forging

links between basic science and clinical outcomes. He leads a large and multidisciplinary research group, and the goal of his work is to further the understanding of gastrointestinal physiology by fundamental research. So far, this knowledge has been translated into the design of new technologies and improved disease treatments, many of which are currently in late-stage clinical trials. He has published over 350 papers, book chapters and abstracts and delivered more than 250 invited research presentations. Abdul is also a serial entrepreneur and has filed 25 patents and founded 3 pharmaceutical companies (Kuecept, Intract Pharma, FabRx). Abdul is a frequent speaker at international conferences, serves as a consultant to many pharmaceutical companies and is on the advisory boards of scientific journals, healthcare organisations and charitable bodies. He is the European Editor of the International Journal of Pharmaceutics. Abdul was the recipient of the Young Investigator Award in Pharmaceutics and Pharmaceutical Technology from the American Association of Pharmaceutical Scientists (AAPS) and is the only non-North American scientist to receive this award. He was also the recipient of the Academy of Pharmaceutical Sciences (APS) award. Simon Gaisford holds a Chair in Pharmaceutics and is Head of the Department of Pharmaceutics at the UCL School of Pharmacy, University College London. He has published 110 papers, 8 book chapters and 4 authored books. His research is focused on novel technologies for manufacturing medicines, particularly using ink-jet printing and 3D printing, and he is an expert in the physico-chemical characterisation of compounds and formulations with thermal methods and calorimetry.

Digital Strategies in the Pharmaceutical Industry

Chemical Heritage Foundation

Perceptions that the pace of new-drug development has slowed and that the pharmaceutical industry is highly profitable have sparked concerns that significant problems loom for future drug development. This Congressional Budget Office (CBO) study-prepared at the request of the Senate Majority Leader-reviews basic facts about the drug industry's recent spending on research and development (R&D) and its output of new drugs. The study also examines issues relating to the costs of R&D, the federal government's role in pharmaceutical research, the performance of the pharmaceutical industry in developing innovative drugs, and the role of expected profits in private firms' decisions about investing in drug R&D. In keeping with CBO's mandate to provide objective, impartial analysis, the study makes no recommendations. David H. Austin prepared this report under the supervision of Joseph Kile and David Moore. Colin Baker provided valuable consultation...

Drugs & Pharmaceutical Technology Handbook

Springer

Emergence of Pharmaceutical Industry Growth with Industrial IoT Approach uses an innovative approach to explore how the Internet of Things (IoT) and big data can improve approaches, create efficiencies and make

discoveries. Rapid growth of the IoT has encouraged many companies in the manufacturing sector to make use of this technology to unlock its potential. Pharmaceutical manufacturing companies are no exception to this, as IoT has the potential to revolutionize aspects of the pharmaceutical manufacturing process, from drug discovery to manufacturing. Using clear, concise language and real world case studies, this book discusses systems level from both a human-factors point-of-view and the perspective of networking, databases, privacy and anti-spoofing. The wide variety of topics presented offers readers multiple perspectives on a how to integrate the Internet of Things into pharmaceutical manufacturing. Covers efficiency improvements of pharmaceutical manufacturing through IoT/Big Data approaches Explores cutting-edge technologies through sensor enabled environment in the pharmaceutical industry Discusses the systems level from both a human-factors point-of-view and the perspective of networking, databases, privacy and anti-spoofing

An Industrial IoT Approach for Pharmaceutical Industry Growth Elsevier
Computer-Aided Applications in Pharmaceutical Technology: Delivery Systems, Dosage Forms, and Pharmaceutical Unit Operations, Second Edition covers the fundamentals of experimental design application and interpretation in pharmaceutical technology, chemometric methods with an emphasis on their applications in process control, neural computing, data science, computer-aided biopharmaceutical characterization, as well as the application of computational fluid dynamics in pharmaceutical technology. Completely updated, the book introduces the theory and practice of computational tools through new case studies. Chapters cover Quality by Design in pharmaceutical development, overview data mining methodologies, present computer-aided formulation development, cover experimental design applications, and much more. Presents a comprehensive review of the current state of the art on various computer-aided applications in pharmaceutical technology Includes case studies to facilitate understanding of various concepts in computer-aided applications Covers applications such as the development of dosage forms and/or delivery systems, pharmaceutical unit operations, and relevant physiologically based pharmacokinetic simulations

Patent-term Extension and the Pharmaceutical Industry John Wiley & Sons
Examines how economic incentives for innovation are changing and what that mean for the future of health care. Explores how payment, patent, and regulatory policies--as well as the involvement of numerous government agencies--affect the introduction and use of new pharmaceuticals, medical devices, and surgical procedures. Annotation(c) 2003 Book News, Inc., Portland, OR (booknews.com).

Emergence of Pharmaceutical Industry Growth with Industrial IoT Approach Academic Press
This book is a comprehensive review of the current state of digital innovation, Internet activity and e-business in

the life sciences arena and a practical guide for managers planning, developing and implementing e-strategies in the pharmaceutical industry. The authors provide numerous examples of innovative, best practice and lay the strategic foundation for using e-business across the pharmaceutical value chain from drug discovery to physician promotion to direct-to-consumer marketing.

Leading Pharmaceutical Innovation Springer

The processes of discovery, testing and distribution of new medicines have undergone radical change in recent decades, from a focus on small molecule drugs to biomedicine and related technologies. Bruce Rasmussen very effectively draws upon modern theories of the firm, data analysis, and case studies to provide important insights into the consequences of this change. He offers convincing evidence that contradicts the widely-held view that the biopharmaceutical sector has not generated considerable economic value. Frank R. Lichtenberg, Columbia University, US Bio- and pharmaceutical industry discovery is a distressed asset today. Why? Bruce Rasmussen s book is a timely and very informative work, building on rich data sources and extensive economic research, on a subject of concern to us all. Is medicine discovery in permanent decline? Are the biotechnology and traditional pharma groups on a collision course, will the traditional group absorb the new, will integration take place, will a new discovery model emerge? I commend Bruce s book to all who wish to understand what is happening. David W. Anstice, Merck & Co., Inc. This path-breaking book addresses the ongoing implications for traditional pharmaceutical companies and biopharmaceutical start-ups of the realignment of the industry knowledge-base. The theoretical approach draws on the modern theory of the firm and related ideas in order to better define the concept of the business model, which is employed to guide the case studies and empirical analysis in the book. The author shows that while traditional pharmaceutical companies have successfully adjusted their business models to meet the challenges of biotechnology, biopharmaceutical start-ups have experienced more problems. Despite the poor financial performance of the vast majority of these firms, the biopharmaceutical sector as a whole has created significant value. However, this has been captured disproportionately by a handful of large, fully-integrated biopharmaceutical firms and, to a lesser extent, by the largest dozen pharmaceutical companies. This highly focused book will be a captivating read for innovation and biopharmaceutical industry analysts, as well as advisers formulating policies to support the development of the biopharmaceutical sector. Academics working on innovation and biotechnology, as well as scientists engaged in research in the life sciences, will also find this book of particular interest.

Family Business and Technological Innovation Springer

An Industrial IoT Approach for Pharmaceutical Industry Growth, Volume Two uses an innovative approach to explore how

the Internet of Things (IoT) and big data can improve approaches and make discoveries. Rapid growth of the IoT has encouraged many companies in the manufacturing sector to make use of this technology to unlock its potential. Using clear language and real-world case studies, this book discusses systems level from both a human-factors point-of-view and the perspective of networking, databases, privacy and anti-spoofing. The wide variety in topics presented offers multiple perspectives on how to integrate the Internet of Things into pharmaceutical manufacturing. This book represents a useful resource for researchers in pharmaceutical sciences, information and communication technologies, and those who specialize in healthcare and pharmacovigilance. Emphasizes efficiency in pharmaceutical manufacturing through an IoT/Big Data approach Explores cutting-edge technologies through sensor enabled environments in the pharmaceutical industry Discusses system levels from both a human-factors point-of-view and the perspective of networking, databases, privacy and anti-spoofing

Cell Culture Technology for Pharmaceutical and Cell-Based Therapies

Academic Press

This textbook is written as a unified approach to various topics, ranging from drug discovery to manufacturing, techniques and technology, regulation and marketing. The key theme of the book is pharmaceuticals - what every student of pharmaceutical sciences should know: from the active pharmaceutical ingredients to the preparation of various dosage forms along with the relevant chemistry, this book makes pharmaceuticals relevant to undergraduate students of pharmacy and pharmaceutical sciences. This book explains how a particular drug was discovered and then converted from lab-scale to manufacturing scale, to the market. It explains the motivation for drug discovery, the reaction chemistry involved, experimental difficulties, various dosage forms and the reasoning behind them, mechanism of action, quality assurance and role of regulatory agencies. After having a course based on this book, the student will be able to understand: 1) the career prospects in the pharmaceutical industry, 2) the need for interdisciplinary teamwork in science, 3) the techniques and technology involved in making pharmaceuticals starting from bulk drugs, and 4) different dosage forms and critical factors in the development of pharmaceutical formulations in relation to the principles of chemistry. A few blockbuster drugs including atorvastatin, sildanefil, ranitidine, ciprofloxacin, amoxicillin, and the longest serving drugs such as aspirin and paracetamol are discussed in detail. Finally, the book also covers the important current pharmaceutical issues like quality control, safety, counterfeiting and abuse of drugs, and future prospects for pharmaceutical industry. Unified approach explaining drug discovery, bulk drug manufacturing, formulation of dosage forms, with pharmacological and therapeutic actions Manufacturing processes of representative active pharmaceutical

ingredients and their chemistry plus formulation of dosage forms presented in this book are based on actual industrial processes Covers many aspects relevant to students of the pharmaceutical sciences or newly employed pharmaceutical researchers/employees. It contains summary information about regulatory agencies of different countries

Advances in Pharmaceutical Sciences John Wiley & Sons

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.

Innovations in Pharmaceutical Manufacturing on the Horizon Springer Science & Business Media

Pharmaceutical giants have been doubling their investments in drug development, only to see new drug approvals to remain constant for the past decade. This book investigates and highlights a set of proactive strategies, aimed at generating

sustainable competitive advantage for its protagonists based on value-generating business practices. We focus on three sources of pharmaceutical innovation: new management methods in the drug development pipeline, new technologies as enablers for cutting-edge R&D, and new forms of internationalisation, such as outside-in innovation in the early phases of R&D.

Innovation in the Pharmaceutical Industry Academic Press Edited by two of the most distinguished pioneers in genetic manipulation and bioprocess technology, this bestselling reference presents a comprehensive overview of current cell culture technology used in the pharmaceutical industry. Contributions from several leading researchers showcase the importance of gene discovery and genomic technology devel

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