

Mettler Pm 4600 Manual

This book is a collection of all pertinent information on radiation safety applicable in nuclear medicine and research using radioactive materials. Radiation exposure causes harm to humans and is strictly controlled by several regulatory authorities (NRC, FDA, EPA, DOT, etc). The practice of nuclear medicine involves the use of radioactive materials in patients and research, and is well regulated by these agencies. However, information on radiation safety practice in nuclear medicine and research areas is scattered throughout the literature and federal registers. For busy nuclear technologists and professionals, it is quite time consuming to look for and acquire specific information and instructions to follow in radiation-related occasions and incidents. This guide provides ready-made, handy information on radiation safety as required in the practice of nuclear medicine, presented in a concise form for easy understanding and quick reference related to a given situation and/or incident. This is an ideal reference for nuclear medicine physicians, nuclear medicine technologists, and researchers using radioactive materials.

This book presents the proceedings of the 4th International Conference on Integrated Petroleum Engineering and Geosciences 2016 (ICIPEG 2016), held under the banner of World Engineering, Science & Technology Congress (ESTCON 2016) at Kuala Lumpur Convention Centre from August 15 to 17, 2016. It presents peer-reviewed research articles on exploration, while also exploring a new area: shale research. In this time of low oil prices, it highlights findings to maintain the exchange of knowledge between researchers, serving as a vital bridge-builder between engineers, geoscientists, academics, and industry.

This new edition of the bestselling Measurement, Instrumentation, and Sensors Handbook brings together all aspects of the design and implementation of measurement, instrumentation, and sensors. Reflecting the current state of the art, it describes the use of instruments and techniques for performing practical measurements in engineering, physics, chemistry, and the life sciences; explains sensors and the associated hardware and software; and discusses processing systems, automatic data acquisition, reduction and analysis, operation characteristics, accuracy, errors, calibrations, and the incorporation of standards for control purposes. Organized according to measurement problem, the Second Edition: Consists of 2 volumes Features contributions from 240+ field experts Contains 53 new chapters, plus updates to all 194 existing chapters Addresses different ways of making measurements for given variables Emphasizes modern intelligent instruments and techniques, human factors, modern display methods, instrument networks, and virtual instruments Explains modern wireless techniques, sensors, measurements, and applications A concise and useful reference for engineers, scientists, academic faculty, students, designers, managers, and industry professionals involved in instrumentation and measurement research and development, Measurement, Instrumentation, and Sensors Handbook, Second Edition provides readers with a greater understanding of advanced applications.

First Text Retrieval Conference (Trec-1)

Recent Advances in Biotechnology

Radiation Safety in Nuclear Medicine

Causes and Cures for Hot Mix Asphalt

EPA-540/G.

Applications

Segregation

Wax Deposition: Experimental Characterizations, Theoretical Modeling, and Field Practices covers the entire spectrum of knowledge on wax deposition. The book delivers a detailed description of the thermodynamic and transport theories for wax deposition modeling as well as a comprehensive review of laboratory testing for the establishment of appropriate field control strategies. Offering valuable insight from academic research and the flow assurance industry, this balanced text: Discusses the background of wax deposition, including the cause of the phenomenon, the magnitude of the problem, and its impact on petroleum production Introduces laboratory techniques and theoretical models to measure and predict key parameters of wax precipitation, such as the wax appearance temperature and the wax precipitation curve Explains how to conduct and interpret laboratory experiments to benchmark different wax deposition models, to better understand wax deposition behaviors, and to predict wax deposit growth for the field Presents various models for wax deposition, analyzing the advantages and disadvantages of each and evaluating the differences between the assumptions used Provides numerous examples of how field management strategies for wax deposition can be established based on laboratory testing and modeling work Wax Deposition: Experimental Characterizations, Theoretical Modeling, and Field aids flow assurance engineers in identifying the severity and controlling the problem of wax deposition. The book also shows students and researchers how fundamental principles of thermodynamics, heat, and mass transfer can be applied to solve a problem common to the petroleum industry.

For much of history, people have been treated as subjects to those with political and economic power and wealth. It is only in the

last 250 years that people (in some parts of the world) have become citizens as opposed to subjects. This change happened in a very short period, between 1780 and 1820, when the foundation for democracy was laid. This was also the basis upon which a century later, local governments responded to rapid industrialization, urbanization, and population growth. During the twentieth century, all democratic governments came to perform a range of tasks, functions, and services that had no historical precedent. In the thirty years following the Second World War, Western democracies created welfare states that, for the first time in history, significantly reduced the gap between the wealthy and the rest. Many of the reforms of that postwar period have been rolled back since then because of the belief that government should be more "businesslike". The changes in the role of government in society have been massive in the past 250 years, and so little is known about why. Jos C.N. Raadschelders examines the questions that citizens should have about their connections to government, why there is a government, what it does, how it does it, and why we can no longer do without government. The Three Ages of Government rises above stereotypical thinking about government.

Stereolithography: Materials, Processes and Applications will focus on recent advances in stereolithography covering aspects related to the most recent advances in the field, in terms of fabrication processes (two-photon polymerization, micro-stereolithography, infrared stereolithography and stereo-thermal-lithography), materials (novel resins, hydrogels for medical applications and highly reinforced resins with ceramics and metals), computer simulation and applications.

Biotechnology of Biopolymers

The Three Ages of Government

Banks, insurance companies, investment trusts, real estate, finance and credit companies

Food Emulsifiers and Their Applications

A Guide to Obesity and the Metabolic Syndrome

Tissue Culture Techniques for Horticultural Crops

Health 4.0: How Virtualization and Big Data are Revolutionizing Healthcare

This handbook presents an authoritative account of the potential of advanced ceramics and composites in strategic applications, including defense, national security, aerospace, and energy security (especially nuclear energy). It highlights how their unique combination of superior properties such as low density, high strength, high elastic modulus, high hardness, high temperature capability, and excellent chemical and environmental stability are optimized in technologies within these fields. The handbook is organized according to application type. It allows readers to learn about strategies that have been used in different fields and to transfer them to their own. The book addresses a wide variety of ceramics and their composites, including PZT ceramics, carbon nanotubes, aerogels, silica radomes, relaxor ferroelectrics, and many others.

Emulsifiers, also known as surfactants, are often added to processed foods to improve stability, texture, or shelf life. These additives are regulated by national agencies, such as the FDA, or multi-national authorities, such as the EEC or WHO. The amphiphilic molecules function by assisting the dispersion of mutually insoluble phases and stabilizing the resulting colloids, emulsions, and foams. Emulsifiers can interact with other food components such as carbohydrates, proteins, water, and ions to produce complexes and mesophases. These interactions may enhance or disrupt structures and affect functional properties of finished foods. In dairy processing, small molecule emulsifiers may displace dairy proteins from oil/water and air/water interfaces, which affects stability and properties of the foams and emulsions. In baked products, emulsifiers contribute to secondary functionalities, such as dough strengthening and anti-staling. Synthetic food emulsifiers suffer from the stigma of chemical names on a product's ingredient statement. Modern consumers are seeking products that are "all natural." Fortunately, there are a number of natural ingredients that are surface-active, such as lecithin, milk proteins, and some protein-containing hydrocolloids. Mayonnaise, for example, is stabilized by egg yolk. This book can serve as both a guide for professionals in the food industry to provide an understanding of emulsifier functionality, and a stimulus for further innovation. Students of food science will find this to be a valuable resource.

The book deals with mycotoxins, their presence in various types of food, and how to prevent their presence in food. In addition to well-known molecules, such as aflatoxins or fumonisins, some contributors have dealt with emerging mycotoxins (e.g., alternaria toxins, botryodiplodin). Readers of the book can also find a new approach to reducing aflatoxins and fumonisins in food. In conclusion, the book presents both new mycotoxins and new information on old mycotoxins.

American Journal of Hospital Pharmacy

From Fundamentals and Simulation to Large-scale Production

Materials, Processes and Applications

Crystal Growth Technology

A Practical, Concise Guide
Mycotoxins in Feed and Food Chain
From the Person, to the Group, to the World

Polymers, plastics, and composite materials are widely used in the shipping industry and so get exposed to marine waters. Biofouling of these leads to problems for ships and boats in the form of reduced speed and corrosion, which these industries would like to prevent. Several hundred thousand tons of plastics that are discarded reach the marine environment every year either from land run-off or because of maritime activities. It has been estimated that because plastics do not degrade easily, one million marine animals are killed every year either by choking on floating plastic items or by becoming entangled in plastic debris. For the shipping industry the polymer should not foul and should be stable for extended periods of time in the marine environment. For the environmentalist the waste dumped after its use should degrade fast without causing problems to flora and fauna as well to the coastal economies. Addressing one of these issues leads to enhancement of the other issue and so this is not an easy problem to solve. This book covers the interaction of polymers with the marine environment, the problems they cause to ecology, their biofouling and biodegradation, and possible solutions.

The best of the "Biopolymers" series. Since only a small number of individuals can afford to buy the entire Biopolymers series, or would simply prefer a broader overview, this handbook contains the very best of biotechnology, with articles taken directly from Alexander Steinbüchel's successful series. As such, these two volumes cover the entire range of biopolymers and not just one chemical class, with the focus on the biotechnological systems and processes under development for a cost effective production, isolation and modification of biopolymers. Furthermore it covers the fundamentals of their chemical and physical properties, their occurrence, metabolism, biosynthesis and biodegradation as well as their industrial applications as renewable resources, novel materials and technical applications. With its contributions similarly structured for easy data comparison and an extensive table of patents, this is an ideal reference for medium sized laboratories and libraries.

In this book top experts treat general thermodynamic aspects of crystal fabrication; numerical simulation of industrial growth processes; commercial production of bulk silicon, compound semiconductors, scintillation and oxide crystals; X-ray characterization; and crystal machining. Also, the role of crystal technology for renewable energy and for saving energy is discussed. It will be useful for scientists and engineers involved in crystal and epilayer fabrication as well as for teachers and graduate students in material science, chemical and metallurgical engineering, and micro- and optoelectronics, including nanotechnology.

Measurement, Instrumentation, and Sensors Handbook

Species Ecology and Ecosystem Management

Proceedings

Challenges and Opportunities for the Renewable Energy Economy

Nanocomposites, Nanostructures, and Their Applications

Wax Deposition

A Manual of Current Techniques

This book highlights the impacts of emerging pollutants (both organic and inorganic) in water bodies and the role and performances of different water and wastewater treatment approaches that are presently being employed in the field of environmental engineering. Some of these approaches are focused on 'end-of-pipe' treatment, while most of these approaches are focused on the application of novel physic-chemical and biological techniques for wastewater treatment and reuse. The goal of this book is to present the emerging technologies and trends in the field of water and wastewater treatment. The papers in this book provide clear proof that environmentally friendly (bio)technologies are becoming more and more important and playing a critical role in removing a wide variety of organic and inorganic pollutants from water. In Focus – a book series that showcases the latest accomplishments in water research. Each book focuses on a specialist area with papers from top experts in the field. It aims to be a vehicle for in-depth understanding and inspire further conversations in the sector.

This document discusses segregation in Hot Mix Asphalt. Considerable effort has been exerted over the last decade to improve the performance of Hot Mix Asphalt. At each point during the manufacturing process the mix has an opportunity to segregate, creating non-uniform mixes. A segregated spot may be "the birth of a pothole". When segregation is present in a mixture, there is a concentration of coarse materials in some areas of the paved mat, while other areas contain a concentration of finer materials.

Segregation creates non-uniform mixes that do not conform to the original job mix formula in gradation or asphalt content. The resulting pavement exhibits poor structural and textural characteristics, provides poor performance and durability, and has a shorter life expectancy and higher maintenance costs. Problems associated with segregation are serious. There are basically five types of mix segregation that occur on the road. They are truck end segregation, centerline segregation, joint/edge segregation, truck end segregation/one side, and random segregation.

In the historical record there is abundant evidence that obesity was a medical and health concern as long as medicine has been practiced. The idea of diet and exercise are bulwarks in the fight against obesity in history from the time of Hippocrates to the 16th century—a span of 2,000 years. However, our scientific understanding of this problem is only a little over 200 years old. An examination of the root cause of what many consider the obesity epidemic, *A Guide to Obesity and the Metabolic Syndrome* traces the origins and types of obesity and its treatment. Examining in detail the developing treatment for obesity, this book provides: A history of obesity, including treatment, proposed causes, and perceptions An examination of the causes and problems associated with obesity A discussion of lifestyle, diet, exercise, and treatment strategies A detailed look at the medications and surgeries available for obesity The fact that we have an epidemic of obesity today that is covering the globe suggests that the strategically simple ideas of eating less and exercising more, ideas that require commitment and personal involvement by the individual, have not been very successful. As we move forward in trying to understand this problem, we need to be alert to strategies and tactics that may not require individual motivation and commitment—history has shown that they do not work well. This book supplies guidance on developing and designing novel strategic interventions against obesity and metabolic disorders.

Recent Progress and New Frontiers

Plant Invasions

Environmentally Friendly (Bio)Technologies for the Removal of Emerging Organic and Inorganic Pollutants from Water

Biomass and Bioenergy

Moody's Bank and Finance Manual

Sustainable Polymer Science and Technology

Statistical Procedures for Agricultural Research

This book highlights some of the latest advances in nanotechnology and nanomaterials from leading researchers in Ukraine, Europe, and beyond. It features contributions from participants in the 6th International Science and Practice Conference Nanotechnology and Nanomaterials (NANO2018) in Kiev, Ukraine on August 27-30, 2018 organized by the Institute of Physics of the National Academy of Sciences of Ukraine, University of Tartu (Estonia), University of Turin (Italy), and Pierre and Marie Curie University (France). Internationally recognized experts from a wide range of universities and research institutions share their knowledge and key results on material properties, behavior, and synthesis. This book's companion volume also addresses topics such as nanooptics, energy storage, and biomedical applications.

Application of polymers from renewable resources - also identified as biopolymers - has a large potential market due to the current emphasis on sustainable technology. For optimal R&D achievements and hence benefits from these market opportunities, it is essential to combine the expertise available in the vast range of different disciplines in biopolymer science and technology. The International Centre of Biopolymer Technology - ICBT - has been created with support from the European Commission to facilitate co operation and the exchange of scientific knowledge between industries, universities and other research groups. One of the activities to reach these objectives, is the organisation of a conference on Biopolymer Technology. In September 1999, the first international conference on Biopolymer Technology was held in Coimbra, Portugal. Because of its success - both scientifically and socially - and because of the many contacts that resulted in exchange missions or other ICBT activities, it was concluded that a second conference on Biopolymer Technology was justified. This second conference was held in Ischia, Italy in October 2000. And again, the scientific programme contained a broad spectrum of presentations in a range of fields such as biopolymer synthesis, modification, technology, applications, material testing and analytical methods.

This book was written for those individuals who are concerned about the techniques and practices of plant cell cultures for horticultural crops. It was designed to serve as a text and reference for students and professionals in ornamental horticulture, fruit and vegetable crop production, botany, forestry, and other areas of plant science. Research during the last twenty-five years in the area of plant tissue culture has led to many developments and changes in this field. Although the techniques involved in the manipulation of plant tissue culture are now relatively straightforward, the presentation of these techniques in a short volume for the beginner in the field is generally unavailable. In addition to describing the techniques for establishment and manipulation of specific species, several chapters in this book also provide a brief, general review of important cultural parameters. Specific protocols and laboratory procedures may also be found in the appendix. I hope that this presentation of information will be helpful to those individuals wanting to apply plant tissue culture techniques for horticultural crops.

Defense, Security, Aerospace and Energy Applications

Recent Advances in their Study and Control

Edible Oil Processing

Biofilms

Experimental Characterizations, Theoretical Modeling, and Field Practices

Moody's Manual of Investments, American and Foreign

Biorelated Polymers

Oils and fats are almost ubiquitous in food processing, whether naturally occurring in foods or added as ingredients that bring functional benefits. Whilst levels of fat intake must be controlled in order to avoid obesity and other health problems, it remains the fact that fats (along with proteins and carbohydrates) are one of the three macronutrients and therefore an essential part of a healthy diet. The ability to process oils and fats to make them acceptable as part of our food supplies is a key component in our overall knowledge of them. Without this ability, the food that we consume would be totally different, and much of the flexibility available to us as a result of the application of processing techniques would be lost. Obviously we need to know how to process fatty oils, but we also need to know how best to use them once they have been processed. This second edition of *Edible Oil Processing* presents a

valuable overview of the technology and applications behind the subject. It covers the latest technologies which address new environmental and nutritional requirements as well as the current state of world edible oil markets. This book is intended for food scientists and technologists who use oils and fats in food formulations, as well as chemists and technologists working in edible oils and fats processing.

Biofilms affect the lives of all of us, growing as they do for example on our teeth (as plaque), on catheters and medical implants in our bodies, on our boats and ships, in food processing environments, and in drinking and industrial water treatment systems. They are highly complex biological communities whose detailed structure and functioning is only gradually being unravelled, with the development of increasingly sophisticated technology for their study. Biofilms almost always have a negative impact on human affairs (flocs in sewage treatment plants are a major exception) and a lot of research is being carried out to gain a better understanding of them, so that we will be in a better position to control them. This volume, with contributions by international experts from widely diverse areas of this field, presents a state-of-the-art picture of where we are at present in terms of our knowledge of biofilms, the techniques being used to study them, and possible strategies for controlling their growth more successfully. It should provide a valuable reference source for information on biofilms and their control for many years to come. The NATO Advanced Research Workshop from which this book derives was conceived during Biotec-88, the Second Spanish Conference on Biotechnology, held at Barcelona in June 1988. The President of the Conference, Dr. Ricardo Guerrero, had arranged sessions on bacterial polymers which included lectures by five invited participants who, together with Dr. Guerrero, became the Organizing Committee for a projected meeting that would focus attention upon the increasing international importance of novel biodegradable polymers. The proposal found favour with the NATO Science Committee and, with Dr. R. Clinton Fuller and Dr. Robert W. Lenz as the co-Directors, Dr. Edwin A. Dawes as the Proceedings Editor, and Dr. Hans G. Schlegel, Dr. Alexander J.B. Zehnder and Dr. Ricardo Guerrero as members of the Organizing Committee, the meeting quickly took shape. To Dr. Guerrero we owe the happy choice of Sitges for the venue, a pleasant coastal resort 36 kilometres from Barcelona, which proved ideal. The sessions were held at the Palau de Maricel in appropriately impressive surroundings, and invaluable local support was provided by Mr. Jordi Mas-Castella and by Ms. Merce Piqueras. Much of the preparatory work fell upon the broad shoulders of Mr. Edward Knee, whose efforts are deeply appreciated. The Organizing Committee hopes that this Workshop will prove to be the first of a series which will aim to keep abreast of a rapidly expanding and exciting area of research that is highly relevant to environmental and industrial interests.

Origins and Treatment

Present Status and Future Concerns

Building and Using Bioscopes

ICIPEG 2016

Polymers in a Marine Environment

Astronautics and Aeronautics, 1967 - Chronology on Science, Technology, and Policy

Toxicological Profile for Americium

In last decades rapid scientific and engineering developments have been occurring within the context of Biotechnology. If the World Economy is to benefit fully from the advances in biosciences and biochemical engineering, it must be able to focus new knowledge on commercially appropriate targets. Modern Biotechnology is a mixture of far reaching innovation superimposed on an industrial background and it represents a means of production with bright prospects, challenging problems and stimulating competition. This NATO Advanced Study Institute on "RECENT ADVANCES IN INDUSTRIAL APPLICATIONS OF BIOTECHNOLOGY" held between September 16-27, 1991 in KuşEtdaşı was the first ASI on Biotechnology in Turkey. It was aiming to provide an updated overview of the fundamental principles, novel application areas and impact of Biotechnology on international economy. Recent developments in the field of Biotechnology have been thoroughly discussed, concentrating on various interdisciplinary aspects. The illain lectures presented at the Institute covered both scientific and commercial aspects of new developments in biotechnology and discussed the possible ways of meeting the challenges of the industry. The main lectures were supplemented by Oral 2nd Poster Presentations. Thus, this volume is comprised of three sections. Part I contains the invited lectures and Part II oral presentations. Extended abstracts of poster presentations have been included in Part III to provide a more comprehensive coverage of the ASI.

Here in one easy-to-understand volume are the statistical procedures and techniques the agricultural researcher needs to know in order to design, implement, analyze, and interpret the results of most experiments with crops. Designed specifically for the non-statistician, this valuable guide focuses on the practical problems of the field researcher. Throughout, it emphasizes the use of statistics as a tool of research—one that will help pinpoint research problems and select remedial measures. Whenever possible, mathematical formulations and statistical jargon are avoided. Originally published by the International Rice Research Institute, this widely respected guide has been totally updated and much expanded in this Second Edition. It now features new chapters on the analysis of multi-observation data and experiments conducted over time and space. Also included is a chapter on experiments in farmers' fields, a subject of major concern in developing countries where agricultural research is commonly conducted outside experiment stations. Statistical Procedures for Agricultural Research, Second Edition will prove equally useful to students and professional researchers in all agricultural and biological disciplines. A wealth of examples of actual experiments help readers to choose the statistical method best suited for their needs, and enable even the most complicated procedures to be easily understood and directly applied. An International Rice Research Institute Book

Held in Gaithersburg, MD, Nov. 4-6, 1992. Evaluates new technologies in information retrieval. Numerous graphs, tables and charts.

Amorphous Solid Dispersions

From Synthesis to Patents

Two-Volume Set

Bone Marrow and Stem Cell Processing

Stereolithography

Theory and Practice

Novel Biodegradable Microbial Polymers

This book describes how the creation of new digital services—through vertical and horizontal integration of data coming from sensors on top of existing legacy systems—that has already had a major impact on industry is now extending to healthcare. The book describes the fourth industrial revolution (i.e. Health 4.0), which is based on virtualization and service aggregation. It shows how sensors, embedded systems, and cyber-physical systems are fundamentally changing the way industrial processes work, their business models, and how we consume, while also affecting the health and care domains. Chapters describe the technology behind the shift of point of care to point of need and away from hospitals and institutions; how care will be delivered virtually outside hospitals; that services will be tailored to

individuals rather than being designed as statistical averages; that data analytics will be used to help patients to manage their chronic conditions with help of smart devices; and that pharmaceuticals will be interactive to help prevent adverse reactions. The topics presented will have an impact on a variety of healthcare stakeholders in a continuously global and hyper-connected world. · Presents explanations of emerging topics as they relate to e-health, such as Industry 4.0, Precision Medicine, Mobile Health, 5G, Big Data, and Cyber-physical systems; · Provides overviews of technologies in addition to possible application scenarios and market conditions; · Features comprehensive demographic and statistic coverage of Health 4.0 presented in a graphical manner.

Provides easy to understand information and guidelines about the design and construction of binoscopes Focusing on both homemade and commercial products, this book provides the reader with simple and straightforward information about the modelling and building of binoscopes. Binoscopes can be thought of as binoculars enlarged to the size of telescopes: essentially, a combination of the two. Constructing a binoscope is easier than most people think, but it still demands attention to detail and proper background knowledge. The author goes on to provide additional information about how to understand the products currently on the market, should the reader choose to purchase a binoscope instead of building one. Lastly, the book also compares binoscopes with telescopes in great detail, outlining the differences the reader can expect to see in the night sky from using both. The celestial views obtained with a binoscope, compared to a single telescope of the same aperture, are a very different experience and well worth the effort.

This collection presents papers from a symposium on extraction of rare metals as well as rare extraction processing techniques used in metal production. Rare metals include strategic metals that are in increasing demand and subject to supply risks. Metals represented include neodymium, dysprosium, scandium and others; platinum group metals including platinum, palladium, iridium, and others; battery related metals including lithium, cobalt, nickel, and aluminum; electronics-related materials including copper and gold; and refractory metals including titanium, niobium, zirconium, and hafnium. Other critical materials such as gallium, germanium, indium and silicon are also included. Papers cover various processing techniques, including but not limited to hydrometallurgy (solvent extraction, ion exchange, precipitation, and crystallization), electrometallurgy (electrorefining and electrowinning), pyrometallurgy, and aerometallurgy (supercritical fluid extraction). Contributions are focused on primary production as well as secondary production through urban mining and recycling to enable a circular economy. A useful resource for all involved in commodity metal production, irrespective of the major metal Provides knowledge of cross-application among industries Extraction and processing of rare metals that are the main building block of many emerging critical technologies have been receiving significant attention in recent years. The technologies that rely on critical metals are prominent worldwide, and finding a way to extract and supply them effectively is highly desirable and beneficial.

Rare Metal Technology 2020

Handbook of Advanced Ceramics and Composites

The Third International Symposium on Tilapia in Aquaculture

Proceedings of the International Conference on Integrated Petroleum Engineering and Geosciences

Selected Proceedings of the 6th International Conference Nanotechnology and Nanomaterials (NANO2018), August 27-30, 2018, Kyiv, Ukraine

Environmental Ergonomics

Biomass obtained from agricultural residues or forest can be used to produce different materials and bioenergy required in a modern society. As compared to other resources available, biomass is one of the most common and widespread resources in the world. Thus, biomass has the potential to provide a renewable energy source, both locally and across large areas of the world. It is estimated that the total investment in the biomass sector between 2008 and 2021 will reach the large sum of \$104 billion. Presently bioenergy is the most important renewable energy option and will remain so the near and medium-term future. Previously several countries try to explore the utilization of biomass in bioenergy and composite sector. Biomass has the potential to become the world's largest and most sustainable energy source and will be very much in demand. Bioenergy is based on resources that can be utilized on a sustainable basis all around the world and can thus serve as an effective option for the provision of energy services. In addition, the benefits accrued go beyond energy provision, creating unique opportunities for regional development. The present book will provide an up-to-date account of non-wood, forest residues, agricultural biomass (natural fibers), and energy crops together with processing, properties, and its applications to ensure biomass utilization and reuse. All aspects of biomass and bioenergy and their properties and applications will be critically re-examined. The book consists of three sections, presenting Non wood and forest products from forestry, arboriculture activities or from wood processing, agricultural biomass (natural fibers) from agricultural harvesting or processing and finally energy crops: high yield crops and grasses grown especially for energy production.

This volume offers a comprehensive guide on the theory and practice of amorphous solid dispersions (ASD) for handling challenges associated with poorly soluble drugs. In twenty-three inclusive chapters, the book examines thermodynamics and kinetics of the amorphous state and amorphous solid dispersions, ASD technologies, excipients for stabilizing amorphous solid dispersions such as polymers, and ASD manufacturing technologies, including spray drying, hot melt extrusion, fluid bed layering and solvent-controlled micro-precipitation technology (MBP). Each technology is illustrated by specific case studies. In addition, dedicated sections cover analytical tools and technologies for characterization of amorphous solid dispersions, the prediction of long-term stability, and the development of suitable dissolution methods and regulatory aspects. The book also highlights future technologies on the horizon, such as supercritical fluid processing, mesoporous silica, KinetiSol®, and the use of non-salt-forming organic acids and amino acids for the stabilization of amorphous systems. Amorphous Solid Dispersions: Theory and Practice is a valuable reference to pharmaceutical scientists interested in developing bioavailable and therapeutically effective formulations of poorly soluble molecules in order to advance these technologies and develop better medicines for the future.