

Handbook Of Aerosol Technology

Aerosol Technology Aerosol Technology In Hazard Evaluation Principles of Aerosol Technology Handbook of Aerosol Technology Aerosol Science Pharmaceutical Inhalation Aerosol Technology, Third Edition Pharmaceutical Inhalation Aerosol Technology, Second Edition Aerosols Nanofiber Filter Technologies for Filtration of Submicron Aerosols and Nanoaerosols Handbook of Aerosol Technology Principles of Aerosol Technology Bioaerosol Detection Technologies Handbook of Aerosol Technology. (First Edition Under Title Kirk-Othmer Concise Encyclopedia of Chemical Technology, 2 Volume Set Pharmaceutical Inhalation Aerosol Technology Optimization of Aerosol Drug Delivery Inhalation Aerosols Aerosol Measurement Fundamentals of Air Cleaning Technology and Its Application in Cleanrooms Aerosol Filtration William C. Hinds Thomas Mercer Paul A. Sanders Paul Amsdon Sanders Ian Colbeck Anthony J. Hickey Anthony J. Hickey Igor Agranovski Wallace Woon-Fong Leung Paul Amsdon Sanders Paul Amsdon Sanders Per Jonsson Paul Amsdon Sanders Kirk-Othmer Anthony J. Hickey Leon Gradon Anthony J. Hickey Pramod Kulkarni Zhonglin Xu Dominique Thomas

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the 1 guide to aerosol science and technology now better than ever since 1982 aerosol technology has been the text of choice among students and professionals who need to acquire

a thorough working knowledge of modern aerosol theory and applications now revised to reflect the considerable advances that have been made over the past seventeen years across a broad spectrum of aerosol related application areas from occupational hygiene and biomedical technology to microelectronics and pollution control this new edition includes a chapter on bioaerosols new sections on resuspension transport losses respiratory deposition models and fractal characterization of particles expanded coverage of atmospheric aerosols including background aerosols and urban aerosols a section on the impact of aerosols on global warming and ozone depletion aerosol technology second edition also features dozens of new fully worked examples drawn from a wide range of industrial and research settings plus new chapter end practice problems to help readers master the material quickly

aerosol technology in hazard evaluation is the fifth in the series of books on the subject of aerosol technology this series is organized into nine chapters that cover the properties sampling and respirable activity of aerosol after briefly describing the nature of an inhalation hazard the book examines the properties measurement and significance of geometric diameters of aerosols as well as the shape factors relating them to various particulate properties the mathematical description of size distributions and the statistics of sampling from a lognormal distribution of particle sizes are provided considerable chapters deal with the methods of aerosol concentration measurement and geometric and aerodynamic size sampling operating characteristics of respirable aerosol activity samplers and their limitations are also examined the concluding chapter discusses problems in the production flow measurement apparatus calibration and isokinetic sampling of aerosols this series will provide a convenient source of information to those concerned in industrial hygiene and will stimulate the interest of those involved in all phases of environmental health

aerosol science technology and applications aerosols influence many areas of our daily life they are at the core of environmental problems such as global warming photochemical smog and poor air quality they can also have diverse effects on human health where exposure occurs in both outdoor and indoor environments however aerosols can have beneficial effects too the delivery of drugs to the lungs the delivery of fuels for combustion and the production of nanomaterials all rely on aerosols advances in particle measurement technologies have made it possible to take advantage of rapid changes in both particle size and concentration likewise aerosols can now be produced in a controlled fashion reviewing many technological applications together with the current scientific status of aerosol modelling and measurements this book includes satellite aerosol remote sensing the effects of aerosols on climate change air pollution and health pharmaceutical aerosols and pulmonary drug delivery bioaerosols and

hospital infections particle emissions from vehicles the safety of emerging nanomaterials radioactive aerosols tracers of atmospheric processes with the importance of this topic brought to the public's attention after the eruption of the Icelandic volcano Eyjafjallajökull this book provides a timely concise and accessible overview of the many facets of aerosol science

this fully revised and updated third edition of pharmaceutical inhalation aerosol technology encompasses the scientific and technical foundation for the rationale design componentry assembly and quality performance metrics of therapeutic inhalers in their delivery of pharmaceutical aerosols to treat symptoms or the underlying causes of disease it focuses on the importance of pharmaceutical engineering as a foundational element of all inhaler products and their application to pulmonary drug delivery the expanded scope considers previously unaddressed aspects of pharmaceutical inhalation aerosol technology and the patient interface by including aerosol delivery lung deposition and clearance that are used as measures of effective dose delivery key features provides a thoroughly revised and expanded reference with authoritative discussions on the physiologic pharmacologic metabolic molecular cellular and physicochemical factors influencing the efficacy and utilization of pharmaceutical aerosols emphasizes the importance of pharmaceutical engineering as a foundational element of all inhaler products and their application to pulmonary drug delivery addresses the physics chemistry and engineering principles while establishing disease relevance expands the technology focus of the original volumes to address the title more directly offers an impressive breadth of coverage as well as an international flavour from outstanding editors and contributors

this thoroughly revised and expanded reference provides authoritative discussions on the physiologic pharmacologic metabolic molecular cellular and physicochemical factors influencing the efficacy and utilization of pharmaceutical aerosol it analyzes the latest science and developments in the generation administration and characterization of these compounds showcasing current clinical applications the efficiency and limitations of major aerosol products and emerging aerosol therapies impacting the field

this self contained handbook and ready reference examines aerosol science and technology in depth providing a detailed insight into this progressive field as such it covers fundamental concepts experimental methods and a wide variety of applications ranging from aerosol filtration to biological aerosols and from the synthesis of carbon nanotubes to aerosol reactors written by a host of internationally renowned experts in the field this is an essential resource for chemists and engineers in the chemical and materials disciplines across multiple industries

as well as ideal supplementary reading in graduate level courses

nanofiber filter technologies for filtration of submicron aerosols and nanoaerosols covers the nanoaerosols less than 100 nanometers to larger submicron aerosols due mostly to pollution which are present in high number concentration in our surroundings people are breathing these nanoaerosols daily without being aware of it airborne viruses from flu to coronaviruses are also nanoaerosols during the covid 19 pandemic it took a long time for health authorities and the general public to recognize the airborne transmission mode of the virus this leads to inadequate protection and ineffective virus control strategies resulting in high infection and death rates the book cites evidence and observations pointing to the airborne transmission mode of the coronavirus it also discusses different filtration technologies using nanofibers to capture these aerosols for short term filtration where aerosols are trapped in the filter depth filtration and long term filtration where aerosols are trapped in the growing filter cake cake filtration this book provides a good understanding on how nanofibers which is of size 1 1000 times that of a normal human hair can effectively filter these tiny aerosols nft organized in four sections fundamentals deep understanding technologies and application covering comprehensively on the subject is a valuable resource for undergraduates and graduates engineers researchers and practitioners in related industries describes technologies with insight and use basic engineering principles to build up technologies includes extensive clear and understandable figures and tables to enhance key concepts uses examples throughout to explain engineering principles and interdisciplinary concepts the only book in the market focusing on nanofiber filter technologies for filtering submicron aerosols and nanoaerosols

this book is intended to give technological background and practical examples but also to give general insight into the on going technology development in the area of biodetection the content is therefore suitable for an array of stakeholders decision makers purchasing officers etc and end users of biodetection equipment within the areas of health environment safety and security and military preparation the book is divided into three sections the first section discusses the fundamental physical and biological properties of bioaerosol s the second section goes into more detail and discusses in depth the most commonly used detection principles the third section of the book is devoted to technologies that have been used in standoff applications the last section of the book gives an overview of trends in bioaerosol detection the reader of this book will gain knowledge about the different biodetection technologies and thus better judge their capabilities in relation to desired applications

this is an easily accessible two volume encyclopedia summarizing all the articles in the main

volumes kirk othmer encyclopedia of chemical technology fifth edition organized alphabetically written by prominent scholars from industry academia and research institutions the encyclopedia presents a wide scope of articles on chemical substances properties manufacturing and uses on industrial processes unit operations in chemical engineering and on fundamentals and scientific subjects related to the field

this fully revised and updated third edition of pharmaceutical inhalation aerosol technology encompasses the scientific and technical foundation for the rationale design componentry assembly and quality performance metrics of therapeutic inhalers in their delivery of pharmaceutical aerosols to treat symptoms or the underlying causes of disease it focuses on the importance of pharmaceutical engineering as a foundational element of all inhaler products and their application to pulmonary drug delivery the expanded scope considers previously unaddressed aspects of pharmaceutical inhalation aerosol technology and the patient interface by including aerosol delivery lung deposition and clearance that are used as measures of effective dose delivery

aerosol therapy has significantly improved the treatment of a variety of respiratory diseases besides the treatment of respiratory diseases there is currently also a great interest to use the lungs as a portal to introduce drugs for systemic therapy the success of therapy with the application of aerosolized medicaments depends on the possibility to deliver the proper amount of drug to the appropriate sites in the respiratory system thus limiting the side effects to a minimum aerosolized delivery of drugs to the lung is optimized if for a given chemical composition of a medicine the target of deposition and the required mass of drug to be deposited are precisely defined the next step is the specification of the number of respirable particles or droplets to be generated by appropriate devices another very important factor for successful aerosol therapy is the condition of the patient coupled with his or her inhalation technique

inhalation aerosols continue to be the basis for successful lung therapy for several diseases with therapeutic strategies and the range of technology significantly evolving in recent years in response this third edition takes a new approach to reflect the close integration of technology with its application after briefly presenting the general considerations that apply to aerosol inhalation the central section of the book uses the focus on disease and therapeutic agents to illustrate the application of specific technologies the final integrated strategies section draws the major points from the applications for disease targets and drug products

aerosol measurement principles techniques and applications third edition is the most detailed treatment available of the latest aerosol measurement methods drawing on the know how of numerous expert contributors it provides a solid grasp of measurement fundamentals and practices a wide variety of aerosol applications this new edition is updated to address new and developing applications of aerosol measurement including applications in environmental health atmospheric science climate change air pollution public health nanotechnology particle and powder technology pharmaceutical research and development clean room technology integrated circuit manufacture and nuclear waste management

fundamentals of air cleaning technology and its application in cleanrooms sets up the theoretical framework for cleanrooms new ideas and methods are presented which include the characteristic index of cleanrooms uniform and non uniform distribution characteristics the minimum sampling volume a new concept of outdoor air conditioning and the fundamentals of leakage preventing layers written by an author who can look back on major scientific achievements and 50 years of experience in this field this book offers a concise and accessible introduction to the fundamentals of air cleaning technology and its application the work is intended for researchers college teachers graduates designers technicians and corporate r d personnel in the field of hvac and air cleaning technology zhonglin xu is a senior research fellow at china academy of building research

filtration of aerosols is omnipresent in our daily lives in areas as diverse as health the protection of people and the environment and air treatment inside buildings however the collection of particles within a filter media is not contrary to popular belief linked to a simple screen effect the phenomena involved are much more complex and require the consideration of aerosol interactions filter media and process conditions to select the best fiber filter for a given application aerosol filtration book for students hygiene or process engineers fibrous media manufacturers designers and filtration system suppliers or users addresses the filtration of aerosols in six chapters these chapters cover physics and aerosol characterization the fibrous media and efficiency and filter clogging by solid or liquid aerosols with special attention to the filtration of the nanoparticles analyses the behavior of fibrous media against solid and liquid aerosols presents models of efficiency and pressure drop introduces computing elements for estimating the lifetime of filters provides guidance for designing filters and predicting their behavior over time

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