

Air Pollution Control Engineering

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[Air Pollution Engineering Manual](#) - Air & Waste Management Association 2000-04-06

The definitive resource for information on air pollution emission sources and the technology available to control them. The Air Pollution Engineering Manual has long been recognized as an important source of information on air pollution control issues for industries affected by the Clean Air Act and regulations in other countries. Thoroughly updated to reflect the latest emission factors and control measures for reducing air pollutants, this new edition provides industry and government professionals with the fundamental, technological, and regulatory information they need for compliance with the most recent air pollution standards. Contributing experts from diverse fields discuss the different processes that generate air pollution, equipment used with all types of gases and particulate matter, and emissions control for areas ranging from graphic arts and chemical processes to the metallurgical industry. More than 500 detailed flowcharts and photographs as well as an extensive listing of Internet resources accompany coverage of: * Biological air pollution control, including biofilters and bioscrubbers * Emissions from wood processing, brick and ceramic product manufacturing, pharmaceutical manufacturing, numerous other industrial processes, fugitive emissions, internal combustion sources, and evaporative losses * Water/wastewater treatment plant emissions * Changes in emission factors for each source category, including particle size factors related to PM10 and PM2.5 standards * Updated MACT

regulations and technologies * And much more THE AIR & WASTE MANAGEMENT ASSOCIATION is the world's leading membership organization for environmental professionals. The Association enhances the knowledge and competency of environmental professionals by providing a neutral forum for technology exchange, professional development, networking opportunities, public education, and outreach events. The Air & Waste Management Association promotes global environmental responsibility and increases the effectiveness of organizations and individuals in making critical decisions that benefit society.

Air Pollution Control Equipment Selection Guide - Kenneth C. Schiffner 2021-05-17

This new edition of Air Pollution Control Equipment Selection Guide builds upon the successes of previous editions that developed a detailed discussion on various technologies used for air pollution control. This book covers a wide range of equipment and provides a good overview of the related principles and applications. A particularly valuable feature are the practical examples, not commonly available in other books. Based on the author's fifty years of experience in applying and operating air pollution control equipment, this book provides easy-to-read information on basic air pollution control technology and is the quintessential resource for the busy engineer and for those who do not have formal training in air pollution control. FEATURES OF THE THIRD EDITION Uniform and consistent applications information for comparing the effectiveness of different

technologies. Provides answers to questions about how to reduce operating costs and how to achieve peak performance. Concise descriptions of each equipment with diagnostics and testing suggestions. New chapters on optimization techniques that help readers deal with different types of hardware for better performance and efficacy.

Air Pollution Control Engineering - William Licht 1980

Handbook of Air Pollution Control Engineering and Technology - John C. Mycock 1995

This handbook provides information for professionals attempting to reduce and eliminate air pollution problems. It contains information on all aspects of air pollution, and also examines the technical aspects of air pollution control equipment. Many practical applications are provided, and the text is referenced to assist the reader in further research. The major scientific areas of air pollution are brought together with practical engineering solutions, and will help air quality and pollution control managers to reduce maintenance costs and prevent deterioration of installations.

Air Pollution Control - Jeff Kuo 2018

Air pollution control and air quality engineering are some of the key subjects in any environmental engineering curriculum. This book will cover topics that are fundamental to pollution control engineers and professionals, including air pollution and its management through regulatory approaches, calculating and estimating emissions, and applying control technologies for different forms of pollutants and emission characteristics for several key industries. It will also include topics that address issues such as fugitive component leak detection and repair, odor containment and control, greenhouse gas emissions, and indoor air pollution, which are often not found in other similar books.

Air Pollution Control Engineering - Lawrence K. Wang 2004-07-02

A panel of respected air pollution control educators and practicing professionals critically survey the both principles and practices underlying control processes, and illustrate these with a host of detailed design examples for

practicing engineers. The authors discuss the performance, potential, and limitations of the major control processes-including fabric filtration, cyclones, electrostatic precipitation, wet and dry scrubbing, and condensation-as a basis for intelligent planning of abatement systems,. Additional chapters critically examine flare processes, thermal oxidation, catalytic oxidation, gas-phase activated carbon adsorption, and gas-phase biofiltration. The contributors detail the Best Available Technologies (BAT) for air pollution control and provide cost data, examples, theoretical explanations, and engineering methods for the design, installation, and operation of air pollution process equipment. Methods of practical design calculation are illustrated by numerous numerical calculations.

Handbook of Environmental Engineering: Air pollution control engineering - Lawrence K. Wang 2004

An Introduction to Air Pollution Control Engineering - J. Paul Guyer, P.E., R.A.

2021-04-13

Introductory technical guidance for mechanical engineers, environmental engineers, civil engineers and construction managers interested in air pollution control engineering. Here is what is discussed: 1. CYCLONE COLLECTORS 2. FABRIC FILTERS 3. SCRUBBERS AND PRECIPITATORS 4. SULFUR AND NITROGEN OXIDES CONTROL 5. AIR STRIPPING.

Air Pollution V4 - Arthur C. Stern 2014-04-24

Air Pollution, Third Edition, Volume IV: Engineering Control of Air Pollution focuses on the sampling, measurement, analysis, and monitoring of air pollution. This book discusses the various gas and air cleaning devices used to eliminate or reduce emissions of air polluting substances. Organized into three parts encompassing 21 chapters, this edition starts with an overview of the methods of air pollution control that are designed to minimize the production or emission of contaminants. This book then discusses the techniques of rational air use management, which is based on the principle that air quality standards have been set at levels that protect the population from harm with an acceptable margin of safety. This text explores as well the waste-disposal process of

incineration in which combustible wastes are burned completely under controlled conditions. Other chapters discuss the production of nonferrous metals, which has been very significant in the development of the science of air pollution control. Engineers, physicist, chemists, meteorologists, agronomists, toxicologists, sociologists, physicians, and lawyers will find this book extremely useful.

Process Engineering and Design for Air Pollution Control - Jaime Benítez 1993

Covers cost estimation, incineration, adsorption devices, flue gas desulfurization, control of nitrogen oxides, particulate emissions control, cyclonic devices, electrostatic precipitators, and fabric filters

An Introduction to Air Pollution Control Engineering - J Paul Guyer 2021-04-13

Introductory technical guidance for mechanical engineers, environmental engineers, civil engineers and construction managers interested in air pollution control engineering. Here is what is discussed:1. CYCLONE COLLECTORS2.

FABRIC FILTERS3. SCRUBBERS AND PRECIPITATORS4. SULFUR AND NITROGEN OXIDES CONTROL5. AIR STRIPPING.

Air Pollution Control - C. David Cooper 2010-08-25

A 25-year tradition of excellence is extended in the Fourth Edition of this highly regarded text. In clear, authoritative language, the authors discuss the philosophy and procedures for the design of air pollution control systems. Their objective is twofold: to present detailed information on air pollution and its control, and to provide formal design training for engineering students. New to this edition is a comprehensive chapter on carbon dioxide control, perhaps the most critical emerging issue in the field. Emphasis is on methods to reduce carbon dioxide emissions and the technologies for carbon capture and sequestration. An expanded discussion of control technologies for coal-fired power plants includes details on the capture of NO_x and mercury emissions. All chapters have been revised to reflect the most recent information on U.S. air quality trends and standards. Moreover, where available, equations for equipment cost estimation have been updated to the present time. Abundant illustrations clarify the concepts presented,

while numerous examples and end-of-chapter problems reinforce the design principles and provide opportunities for students to enhance their problem-solving skills.

Air Pollution Control Engineering - Radcliff Mathers 2020-10

From the alleys of the world environment comes a handbook dealing with air pollution, its control, and engineering. This is a step by step guide divided into segments, taking you into a long journey to make you aware of the major crisis facing the world environment today. This will transform the way you think about the atmosphere and the air we inhale. The misconceptions regarding atmospheric condition will go for a toss, on reading through this book. Air Pollution Control Engineering is geared towards the havoc air pollutants and harmful emissions creating in the sub-atmospheric strata. It is eroding the ozone layer, essential for human health and vis-a-vis, leading to a cascading effect of harmful incidents. In a threadbare explanation, all sources of air pollutants and their resultant effects are depicted in detail in this book.

Biofiltration for Air Pollution Control - Joseph S. Devinny 2017-11-22

The number-one environmental threat to public health, air pollution remains a pressing problem-made even more complicated by the massive quantity and diversity of air pollution sources. Biofiltration technology (using micro-organisms growing on porous media) is being recognized as one of the most advantageous means to convert pollutants to harmless products. Done properly, biofiltration works at a reasonable cost-utilizing inexpensive components, without requiring fuel or generating hazardous by-products. Firmly established in Europe, biofiltration techniques are being increasingly applied in North America: Biofiltration for Air Pollution Control offers the necessary knowledge to "do it right."

Air Pollution Control and Design for Industry - Paul N. Cheremisinoff 2018-04-24

Presents current methods for controlling air pollution generated at stationary industrial sources and provides complete coverage of control options, equipment and techniques. The main focus of the book is on practical solutions to air pollution problems.

Air Pollution Control Technology Handbook

- Karl B. Schnelle, Jr. 2016-04-19

In the debate over pollution control, the price of pollution is a key issue. But which is more costly: clean up or prevention? From regulations to technology selection to equipment design, *Air Pollution Control Technology Handbook* serves as a single source of information on commonly used air pollution control technology. It covers environmental regulations and their history, process design, the cost of air pollution control equipment, and methods of designing equipment for control of gaseous pollutants and particulate matter. This book covers how to: Review alternative design methods Select methods for control Evaluate the costs of control equipment Examine equipment proposals from vendors With its comprehensive coverage of air pollution control processes, the *Air Pollution Control Technology Handbook* is a detailed reference for the practicing engineer who prepares the basic process engineering and cost estimation required for the design of an air pollution control system. It discusses the topics in depth so that you can apply the methods and equations presented and proceed with equipment design.

Air and Noise Pollution Control - Lawrence K. Wang 2012-12-06

The past few years have seen the emergence of a growing, widespread desire in this country, and indeed everywhere, that positive actions be taken to restore the quality of our environment, and to protect it from the degrading effects of all forms of pollution-air, noise, solid waste, and water. Since pollution is a direct or indirect consequence of waste, if there is no waste, there can be no pollution, and the seemingly idealistic demand for "zero discharge" can be construed as a demand for zero waste. However, as long as there is waste, we can only attempt to abate the consequent pollution by converting it to a less noxious form. In those instances in which a particular type of pollution has been recognized, three major questions usually arise: 1, How serious is the pollution? 2, Is the technology to abate it available? and 3, Do the costs of abatement justify the degree of abatement achieved? The principal intention of this series of books is to help the reader to formulate answers to the last two of the above three questions. The traditional approach of applying tried-and-true solutions to specific pollution

problems has been a major factor contributing to the success of environmental engineering, and in large measure has accounted for the establishing of a "methodology of pollution control.

Air Quality - Thad Godish 2014-08-15

The fifth edition of a bestseller, *Air Quality* provides students with a comprehensive overview of air quality, the science that continues to provide a better understanding of atmospheric chemistry and its effects on public health and the environment, and the regulatory and technological management practices employed in achieving air quality goals.

Maintaining the practical approach that has made previous editions so popular, the chapters have been reorganized, new material has been added, less relevant material deleted, and new images added, particularly those from Earth satellites. See What's New in the Fifth Edition: New graphics, images, and an appended list of unit conversions New problems and questions Revisions and updates on the regulatory aspects related to air quality, emissions of pollutants, and particularly in the area of greenhouse gas emissions Updated information on topics that affect air quality such as global warming, climate change, international issues associated with air quality and its regulation, atmospheric deposition, atmospheric chemistry, and health and environmental effects of atmospheric pollution Written in Thad Godish's accessible style, the book clearly elucidates the challenges we face in our fifth decade of significant regulatory efforts to protect and enhance the quality of the nation's air. It also highlights the growing global awareness of air quality issues, climate change, and public health concerns in the developing world. The breadth of coverage, review questions at the end of each chapter, extensive glossary, and list of readings put the tools for understanding in your students' hands. *Air Pollution and Greenhouse Gases* - Zhongchao Tan 2014-11-03

This textbook discusses engineering principles relating to air pollution and greenhouse gases (GHGs); it focuses on engineering principles and designs of related devices and equipment for air emission control for a variety of industries such as energy, chemical, and transportation industries. The book aims primarily at senior

undergraduate and graduate students in mechanical, chemical and/or environmental engineering departments; it can also be used as a reference book by technical staff and design engineers who are interested in and need to have technical knowledge in air pollution and GHGs. The book is motivated by recent rapid advances in air pollution and greenhouse gas emissions and their control technologies. In addition to classic topics related to air pollution, this book is also featured with emerging topics related to air pollution and GHGs. It covers recent advances in engineering approaches to the reduction of GHG emissions including, but are not limited to, green energy technologies and carbon sequestration and storage. It also introduces an emerging topic in air pollution, which is referred to as Nano Air Pollution. It is a growing concern in air pollution, but largely missing in similar books, likely because of recent rapid advances in nanotechnology has outpaced the advances in nano air pollution control.

Environmental Pollution Control Engineering - C. S. Rao 2007

This Revised Edition Of The Book On Environmental Pollution Control Engineering Features A Systematic And Thorough Treatment Of The Principles Of The Origin Of Air, Water And Land Pollutants, Their Effect On The Environment And The Methods Available To Control Them. The Demographic And Environmental Trends, Energy Consumption Patterns And Their Impact On The Environment Are Clearly Discussed. Application Of The Physical, And Chemical Engineering Concepts To The Design Of Pollution Control Equipment Is Emphasized. Due Importance Is Given To Modelling, Quality Monitoring And Control Of Specific Major Pollutants. A Separate Chapter On The Management Of Hazardous Wastes Is Added. Information Pertaining To Indian Conditions Is Given Wherever Possible To Help The Reader Gain An Insight Into India Sown Pollution Problems. This Book Is Mainly Intended As A Textbook For An Integrated One-Semester Course For Senior Level Undergraduate Or First Year Post-Graduate Engineering Students And Can Also Serve As A Reference Book To Practising Engineers And Decision Makers Concerned With Environmental Pollution Control.

Air Pollution Control - C. David Cooper 2002
Writing for engineers working in the area of air pollution control systems, Cooper (U. of Central Florida) and Alley (emeritus, Clemson U.) present a textbook describing the philosophy and procedures for systems design. The primary purpose of the text is to aid in formal design training, although general foundational information on air pollution and its control does provide the background for the former. Chapters cover process design, particulate matter, cyclones, electrostatic precipitators, fabric filters, particulate scrubbers, auxiliary equipment, properties of gases and vapors, VOC incinerators, gas adsorption and absorption, biological controls, atmospheric dispersion modeling, and indoor air quality and control. The CD-ROM contains solutions to exercises from the text. Annotation copyrighted by Book News, Inc., Portland, OR

Air Quality - Wayne T. Davis 2021-02-24

The sixth edition of a bestseller, *Air Quality* provides students with a comprehensive overview of air quality, the science that continues to provide a better understanding of atmospheric chemistry and its effects on public health and the environment, and the regulatory and technological management practices employed in achieving air quality goals. Maintaining the practical approach that has made previous editions popular, the chapters have been reorganized, new material has been added, less relevant material has been deleted, and new images have been added, particularly those from Earth satellites. New in the Sixth Edition New graphics, images, and an appended list of unit conversions New problems and questions Presents all-new information on the state of air quality monitoring Provides the latest updates on air quality legislation in the United States Updates the effects of air pollution and CO₂ on climate change Examines the effects of the latest changes in energy production and the related emissions and pollutants Offers broadened coverage of air pollutant emissions and air quality in a global context This new edition elucidates the challenges we face in our efforts to protect and enhance the quality of the nation's air. It also highlights the growing global awareness of air quality issues, climate change, and public health concerns in the developing

world. The breadth of coverage, review questions at the end of each chapter, extensive glossary, and list of readings place the tools for understanding into your students' hands.

Air Pollution Control Engineering Trainee - National Learning Corporation 2013

The Air Pollution Control Engineering Trainee Passbook(R) prepares you for your test by allowing you to take practice exams in the subjects you need to study. It provides hundreds of questions and answers in the areas that will likely be covered on your upcoming exam, including but not limited to: preparing written material; understanding and interpreting tabular material; administrative supervision; evaluating conclusions in light of known facts; effective interaction with agency staff and the public; and more.

Handbook of Environmental Engineering - Myer Kutz 2018-10-16

A comprehensive guide for both fundamentals and real-world applications of environmental engineering. Written by noted experts, Handbook of Environmental Engineering offers a comprehensive guide to environmental engineers who desire to contribute to mitigating problems, such as flooding, caused by extreme weather events, protecting populations in coastal areas threatened by rising sea levels, reducing illnesses caused by polluted air, soil, and water from improperly regulated industrial and transportation activities, promoting the safety of the food supply. Contributors not only cover such timely environmental topics related to soils, water, and air, minimizing pollution created by industrial plants and processes, and managing wastewater, hazardous, solid, and other industrial wastes, but also treat such vital topics as porous pavement design, aerosol measurements, noise pollution control, and industrial waste auditing. This important handbook: Enables environmental engineers to treat problems in systematic ways. Discusses climate issues in ways useful for environmental engineers. Covers up-to-date measurement techniques important in environmental engineering. Reviews current developments in environmental law for environmental engineers. Includes information on water quality and wastewater engineering. Informs environmental engineers about methods of dealing with

industrial and municipal waste, including hazardous waste. Designed for use by practitioners, students, and researchers, Handbook of Environmental Engineering contains the most recent information to enable a clear understanding of major environmental issues.

Air Pollution Control Engineering - Noel de Nevers 2016-12-15

Engineers in multiple disciplines—environmental, chemical, civil, and mechanical—contribute to our understanding of air pollution control. To that end, Noel de Nevers has incorporated these multiple perspectives into an engaging and accessible overview of the subject. While based on the fundamentals of chemical engineering, the book is accessible to any reader with only one year of college chemistry. In addition to detailed discussions of individual air pollutants and the theory and practice of air pollution control devices, de Nevers devotes seven chapters to topics that influence device selection and design, such as atmospheric models and U.S. air pollution law. The Third Edition's many in-text examples and end-of-chapter problems provide a more complex treatment of the concepts presented. Significant updates include more discussion on the problem of greenhouse gas emissions and a thorough look at the Volkswagen diesel-emission scandal.

Environmental Pollution and Control - J. Jeffrey Peirce 1998-01-15

Complex environmental problems are often reduced to an inappropriate level of simplicity. While this book does not seek to present a comprehensive scientific and technical coverage of all aspects of the subject matter, it makes the issues, ideas, and language of environmental engineering accessible and understandable to the nontechnical reader. Improvements introduced in the fourth edition include a complete rewrite of the chapters dealing with risk assessment and ethics, the introduction of new theories of radiation damage, inclusion of environmental disasters like Chernobyl and Bhopal, and general updating of all the content, specifically that on radioactive waste. Since this book was first published in 1972, several generations of students have become environmentally aware and conscious of their

responsibilities to the planet earth. Many of these environmental pioneers are now teaching in colleges and universities, and have in their classes students with the same sense of dedication and resolve that they themselves brought to the discipline. In those days, it was sometimes difficult to explain what indeed environmental science or engineering was, and why the development of these fields was so important to the future of the earth and to human civilization. Today there is no question that the human species has the capability of destroying its collective home, and that we have indeed taken major steps toward doing exactly that. And yet, while, a lot has changed in a generation, much has not. We still have air pollution; we still contaminate our water supplies; we still dispose of hazardous materials improperly; we still destroy natural habitats as if no other species mattered. And worst of all, we still continue to populate the earth at an alarming rate. There is still a need for this book, and for the college and university courses that use it as a text, and perhaps this need is more acute now than it was several decades ago. Although the battle to preserve the environment is still raging, some of the rules have changed. We now must take into account risk to humans, and be able to manipulate concepts of risk management. With increasing population, and fewer alternatives to waste disposal, this problem is intensified. Environmental laws have changed, and will no doubt continue to evolve. Attitudes toward the environment are often couched in what has become known as the environmental ethic. Finally, the environmental movement has become powerful politically, and environmentalism can be made to serve a political agenda. In revising this book, we have attempted to incorporate the evolving nature of environmental sciences and engineering by adding chapters as necessary and eliminating material that is less germane to today's students. We have nevertheless maintained the essential feature of this book -- to package the more important aspects of environmental engineering science and technology in an organized manner and present this mainly technical material to a nonengineering audience. This book has been used as a text in courses which require no prerequisites, although a high school knowledge

of chemistry is important. A knowledge of college level algebra is also useful, but calculus is not required for the understanding of the technical and scientific concepts. We do not intend for this book to be scientifically and technically complete. In fact, many complex environmental problems have been simplified to the threshold of pain for many engineers and scientists. Our objective, however, is not to impress nontechnical students with the rigors and complexities of pollution control technology but rather to make some of the language and ideas of environmental engineering and science more understandable.

Air Pollution Control Engineering - Noel De Nevers 2017

Engineers in multiple disciplines--environmental, chemical, civil, and mechanical--contribute to our understanding of air pollution control. To that end, Noel de Nevers has incorporated these multiple perspectives into an engaging and accessible overview of the subject. While based on the fundamentals of chemical engineering, the book is accessible to any reader with only one year of college chemistry. In addition to detailed discussions of individual air pollutants and the theory and practice of air pollution control devices, de Nevers devotes seven chapters to topics that influence device selection and design, such as atmospheric models and U.S. air pollution law. The Third Edition's many in-text examples and end-of-chapter problems provide a more complex treatment of the concepts presented. Significant updates include more discussion on the problem of greenhouse gas emissions and a thorough look at the Volkswagen diesel-emission scandal.

Air Pollution and Control - DR. KESHAV KANT

This book provides a fully comprehensive, rigorous and refreshing treatment of 'Air Pollution and Control' covering present day technology and developments. It covers various new topics like bioaerosols or aeroallergens and hazardous air pollutants including diesel exhaust and dioxins. The book is intended to meet the requirements of (a) Undergraduate and postgraduate students of particularly Environmental and Mechanical Engineering and also other branches of Engineering, (b) Technologists, designers, operation and maintenance engineers of industries, electrical

power plants, heat and power utilities, (c) Aspirants for competitive examinations of IAS, IES, IFS, PCS, and aspirants for various state and private technical services, etc. and (d) General readers interested in the field for better understanding and knowledge. The book is divided into 20 chapters and presents enormous information covering all aspects of Air Pollution in various sectors relevant to Indian conditions. Each of the following chapters is followed by questions at the end based upon the text.

Industrial Air Pollution Control Systems - William L. Heumann 1997

A guide to understanding common technologies used in industrial air pollution control. It provides plant process engineers, air pollution control engineers and technicians with an overview of pollution controls systems and equipment. Tips for recognizing and solving common equipment problems are an integral element of the book. SI units are included.

Indoor Air Pollution Control - Thad Godish 1989-10-31

This is an all new book designed to provide you the practical information and data you need for indoor air pollution control! Presented early in the book is theory as support for the applications that follow; including a synthesized review of the significant literature on controlling air pollution. Practical applications—largely from the author's own experience—deal with 1) How to conduct indoor air quality investigations in both residences and public access buildings, 2) Indoor air quality mitigation practice, and 3) Case histories. This book will be very useful to consultants and other professionals who grapple to solve real world problems. And it will make an excellent textbook for new courses in indoor air quality. Indoor Air Pollution Control will be used for control and prevention of contaminated air in homes, apartment buildings, office buildings (large and small), hospitals, auditoriums, and other public buildings.

Air Pollution Control Engineering - Noel de Nevers 2010-05-07

Air pollution control can be approached from a number of different engineering disciplines environmental, chemical, civil, and mechanical. To that end, Noel de Nevers has written an engaging overview of the subject. While based

on the fundamentals of chemical engineering, the treatment is accessible to readers with only one year of college chemistry. In addition to discussions of individual air pollutants and the theory and practice of air pollution control devices, de Nevers devotes about half the book to topics that influence device selection and design, such as atmospheric models and U.S. air pollution law. The generous number of end-of-chapter problems are designed to develop more complex thinking about the concepts presented and integrate them with readers personal experience increasing the likelihood of deeper understanding.

Environmental Pollution Control Engineering - C.S Rao 2020

Air Pollution Control Equipment - Louis Theodore 2011-12-30

With the advent of the Clean Air Act in 1970, the number of air pollution control equipment installations has increased at an accelerated pace. Although much has been written on attaining collection performance with the various control devices, a major void has occurred in the identification and transfer of information needed to help reduce maintenance costs and to prevent deterioration of collector performance. Although design and selection information is presented, it is the primary intention of this book to discuss operation and maintenance topics and explore many of the repetitive problems that have plagued users of air pollution control equipment. The existence of these problems may be related to the complexity of the process or to a lack of well-defined operation techniques, among other reasons. In any event, this book intends to emphasize where and how these factors can have a major impact on the maintenance problems of control devices. Operation and maintenance problems have plagued users for nearly 100 years.

Air Pollution Control Equipment Calculations - Louis Theodore 2008-11-26

Unique problem-and-solution approach for quickly mastering a broad range of calculations This book's problem-and-solution approach enables readers to quickly grasp the fundamentals of air pollution control equipment and essential applications. Moreover, the author sets forth solid principles for the design and

selection of air pollution control equipment as well as for its efficient operation and maintenance. Readers gain a deep understanding of both the equipment itself and the many factors affecting performance. Following two introductory chapters, the book dedicates four chapters to examining control equipment for gaseous pollutants, including adsorption, absorption, and incineration equipment. The remaining six chapters deal with equipment for managing airborne particulate pollutants, including gravity settlers, cyclones, electrostatic precipitators, scrubbers, and baghouses. The appendix contains discussions of hybrid systems, the SI system (including conversion constants), and a cost-equipment model. Each chapter offers a short introduction to the control device discussed. Next, progressively more difficult problems with accompanying solutions enable readers to build their knowledge as they advance through the chapter. Problems reflect the most recent developments in pollution control and include a variety of performance equations and operation and maintenance calculations. Each problem includes a statement of the problem, the data used to solve the problem, and a detailed solution. Readers may further hone their skills by visiting the text's Web site for additional problems and solutions. This publication serves both as a textbook for engineering students and as a reference for engineers and technicians who need to ensure that air pollution control equipment operates efficiently and enables their facility to meet all air pollution control standards and regulations.

Cost Engineering for Pollution Prevention and Control - Paul Mac Berthouex 2021-05-14
Environmental engineers work to increase the level of health and happiness in the world by designing, building, and operating processes and systems for water treatment, water pollution control, air pollution control, and solid waste management. These projects compete for resources with projects in medicine, transportation, education, and other fields that have a similar objective. The challenge is to make the investments efficient - to get the best project outputs with a minimum of inputs. *Cost Engineering for Pollution Prevention and Control* examines how to identify the best solution by

judging alternatives with respect to some measure of system performance, such as total capital cost, annual cost, annual net profit, return on investment, cost-benefit ratio, net present worth, minimum production time, maximum production rate, minimum energy utilization, and so on. **Key Features:** Explains how to estimate preliminary costs, how to compare the life cycle costs of alternative projects, how to find the optimal balance between capital costs and operating costs. Emphasis is placed on formulating the problem rather than on the mathematical details of how the calculations are done. Provides numerous practical examples and case studies. Includes end-of-chapter exercises dealing with water, wastewater, air pollution, solid wastes, and remediation projects. The important concepts presented in this book can be understood by those students who have taken an introductory course in environmental engineering. Advanced knowledge of process design is not required. The material can also be utilized by engineers, managers, and others who would benefit from a better understanding of how engineers look at problems.

Advanced Air and Noise Pollution Control - Lawrence K. Wang 2007-11-03

Leading pollution control educators and practicing professionals describe how various combinations of different cutting-edge process systems can be arranged to solve air, noise, and thermal pollution problems. Each chapter discusses in detail a variety of process combinations, along with technical and economic evaluations, and presents explanations of the principles behind the designs, as well as numerous variant designs useful to practicing engineers. The emphasis throughout is on developing the necessary engineering solutions from fundamental principles of chemistry, physics, and mathematics. The authors also include extensive references, cost data, design methods, guidance on the installation and operation of various air pollution control process equipment and systems, and Best Available Technologies (BAT) for air thermal and noise pollution control.

Fundamentals of Air Pollution - Daniel A. Vallero 2014-07-26

Fundamentals of Air Pollution is an important

and widely used textbook in the environmental science and engineering community. This thoroughly revised fifth edition of *Fundamentals of Air Pollution* has been updated throughout and remains the most complete text available, offering a stronger systems perspective and more coverage of international issues relating to air pollution. Sections on pollution control have been reorganized and updated to demonstrate the move from regulation and control approaches to green and sustainable engineering approaches. The fifth edition maintains a strong interdisciplinary approach to the study of air pollution, covering such topics as chemistry, physics, meteorology, engineering, toxicology, policy, and regulation. New material includes near-road air pollution, new risk assessment approaches, indoor air quality, the impact of biofuels and fuel additives, mercury emissions, forecasting techniques, and the most recent results from the National Air Toxics Assessment. Stronger systems approach, emphasizing the impact of air pollution on ecosystems and human health Risks, measures, models, and control of air pollution are discussed at scale – starting at the individual/niche level and expanding to planetary/global scale Increased emphasis on international issues, including coverage of European initiatives and discussions of the impact of emerging economies like India and China Updated references, standards, and methods throughout the book make this the most current air pollution text/reference on the market All new end-of-chapter problems enhance its usefulness as a course text
Fundamentals of Air Pollution 2e - Arthur C. Stern 1984-05-28
Fundamentals of Air Pollution, Second Edition discusses the basic chemistry, physics, and engineering of air pollution. This edition explores the processes and equipment that

produce less pollution in the atmosphere. This book is comprised of six parts encompassing 28 chapters. This text starts with an overview of the predominant air pollution problems during the Industrial Revolution, including smoke and ash produced by burning oil or coal in the boiler furnaces of power plants, marine vessels, and locomotives. This edition then explores the mathematical models of atmospheric transport and diffusion and discusses the air pollution control in communities. Other chapters deal with atmospheric chemistry, control technology, and visibility through the atmosphere. This book further examines the regulatory concepts that have become more significant, such as the bubble concept, air quality, emission standards, and the trading and banking of emission rights. Air pollution scientists, atmospheric scientists, ecologists, engineers, educators, researchers, and students will find this book extremely useful.

Air Pollution Control - Jeff Kuo 2018-11-23
Air pollution control and air quality engineering are some of the key subjects in any environmental engineering curriculum. This book will cover topics that are fundamental to pollution control engineers and professionals, including air pollution and its management through regulatory approaches, calculating and estimating emissions, and applying con
Fundamentals of Air Pollution Engineering - Richard C. Flagan 2012

A rigorous and thorough analysis of the production of air pollutants and their control, this text is geared toward chemical and environmental engineering students. Topics include combustion, principles of aerosol behavior, theories of the removal of particulate and gaseous pollutants from effluent streams, and air pollution control strategies. 1988 edition. Reprint of the Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1988 edition.