

# Air Pollution Control Equipment Selection Design Operation And Maintenance Environmental Science And Engineering

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## **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.

## **Pollution Control in Oil, Gas and Chemical Plants**

- Alireza Bahadori 2013-10-04

This book covers the fundamental requirements for air, soil and water pollution control in oil and gas refineries, chemical plants, oil terminals, petrochemical plants, and related facilities. In this concise volume, Dr. Bahadori elucidates design and operational considerations relevant to critical systems such as the waste water treatment units, solid waste disposal, and waste water sewer treatment as well as engineering/technological methods related to soil and air pollutions control. Engineers and technical managers in a range of industries will benefit from detail on a diverse list of topics.

## **Industrial Air Pollution Control Systems**

- William L. Heumann 1997

The ultimate air pollution control problem-solver kit Now you can solve virtually any air pollution

control (APC) problem that comes your way--all you need is this hands-on guide. It's loaded with all the problem-solving tools, troubleshooting tips and advice you need to facilitate every aspect of APC management, design and regulatory compliance. You get crystal-clear, step-by-step guidelines for designing and selecting APC equipment. . .specifying and purchasing APC systems. . .setting air pollution control policy. . .adhering to the Clean Air Amendments of 1990. . .maintaining compliance documentation. . .and much, much more. This is the one source to turn to for fast, accurate information on any of the major APC system technologies and methods--cyclones, media filtration, particulate scrubbing, electrostatic precipitators, absorption separators, thermal oxidizers, you name it!

**Air Pollution** - Jorge Del Real Olvera

2019-04-24

Currently, one of the most evident and dangerous contaminants aspects for the health of all living beings is air pollution. To understand the severity of this environmental problem, in this book the authors make an in-depth review of different environmental aspects on monitoring, quantification and elimination of emissions to the atmosphere, generated by diverse anthropogenic activities in large cities.

Contributors of this book have made an effort to put their ideas in simple terms without forgoing quality. The principal objective of this book is to present the most recent technical literature to all interested readers in this field.

**Air Pollution Calculations** - Daniel A. Vallero

2019-05-03

Air Pollution Calculations introduces the equations and formulae that are most important to air pollution, but goes a step further. Most texts lack examples of how these equations and formulae apply to the quantification of real-world scenarios and conditions. The ample example calculations apply to current air quality problems, including emission inventories, risk estimations, biogeochemical cycling assessments, and efficiencies in air pollution control technologies. In addition, the book explains thermodynamics and fluid dynamics in step-by-step and understandable calculations using air quality and multimedia modeling, reliability engineering and engineering

economics using practical examples likely to be encountered by scientists, engineers, managers and decision makers. The book touches on the environmental variables, constraints and drivers that can influence pollutant mass, volume and concentrations, which in turn determine toxicity and adverse outcomes caused by air pollution. How the pollutants form, move, partition, transform and find their fate are explained using the entire range of atmospheric phenomena. The control, prevention and mitigation of air pollution are explained based on physical, chemical and biological principles which is crucial to science-based policy and decision-making. Users will find this to be a comprehensive, single resource that will help them understand air pollution, quantify existing data, and help those whose work is impacted by air pollution. Explains air pollution in a comprehensive manner, enabling readers to understand how to measure and assess risks to human populations and ecosystems actually or potentially exposed to air pollutants Covers air pollution from a multivariate, systems approach, bringing in atmospheric processes, health impacts, environmental impacts, controls and prevention Facilitates an understanding of broad factors, like climate and transport, that influence patterns and change in pollutant concentrations, both spatially and over time

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

**Handbook of Air Pollution Prevention and Control** - Nicholas P Cheremisinoff 2002-07-31

Full text engineering e-book.

*WHO Guidelines for Indoor Air Quality* - World Health Organization 2010

This book presents WHO guidelines for the protection of public health from risks due to a number of chemicals commonly present in indoor air. The substances considered in this review, i.e. benzene, carbon monoxide, formaldehyde, naphthalene, nitrogen dioxide, polycyclic aromatic hydrocarbons (especially benzo[a]pyrene), radon, trichloroethylene and tetrachloroethylene, have indoor sources, are

known in respect of their hazardousness to health and are often found indoors in concentrations of health concern. The guidelines are targeted at public health professionals involved in preventing health risks of environmental exposures, as well as specialists and authorities involved in the design and use of buildings, indoor materials and products. They provide a scientific basis for legally enforceable standards.

### **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.

Fundamentals of Air Pollution - Daniel 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

### **Handbook of Air Pollution Prevention and Control**

- Nicholas P Cheremisinoff 2002-08-22  
The Handbook of Air Pollution Prevention and Control provides a concise overview of the latest technologies for managing industrial air pollution in petrochemical, oil and gas, and allied industries. Detailed material on equipment selection, sizing, and troubleshooting operations is provided along with practical design methodology. Unique to this volume are discussions and information on energy-efficient technologies and approaches to implementing environmental cost accounting measures. Included in the text are sidebar discussions, questions for thinking and discussing, recommended resources for the reader (including Web sites), and a comprehensive glossary. The Handbook of Air Pollution Prevention and Control also includes free access to US EPA's air dispersion model SCREEN3. Detailed examples on the application of this important software to analyzing air dispersion from industrial processes and point sources are provided in the Handbook, along with approaches to applying this important tool in developing approaches to pollution prevention and in selecting control technologies. By

applying SCREEN3, along with the examples given in the Handbook, the user can: evaluate the impact of processes and operations to air quality, and apply the model to assess emergency scenarios to help in planning, to develop environmental impact assessments, to select pollution control technologies, and to develop strategies for pollution prevention. Two companion books by Cheremisinoff are available: Handbook of Water and Wastewater Treatment Technologies, and Handbook of Solid Waste Management and Waste Minimization Technologies. Uniquely combines prevention and control concepts while covering the practices and technologies that are applied to the prevention of air pollution in the chemicals manufacturing, oil and gas, iron and steel, and pharmaceutical industries, and to the cleaning and control of industrial air emissions. Provides a bridge for today's environmental manager by focusing on an integrated approach to managing air pollution problems within industrial operations. Shows you how to calculate financial returns from pollution prevention projects.

#### **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.

Air Pollution Control Engineering - William Licht 1988-02-19

Regulatory Guide - U.S. Nuclear Regulatory Commission. Office of Standards Development 1984

Contents: 1. Power reactors.--2. Research and test reactors.--3. Fuels and materials facilities.--4. Environmental and siting.--5. Materials and plant protection.--6. Products.--7. Transportation.--8. Occupational health.--9. Antitrust reviews.--10. General.

#### **Industrial Waste Treatment Handbook -**

Frank Woodard 2001-09-11

All industries produce waste products that

unless treated or mitigated in some way will be harmful to the human or natural environment. These waste products will generally need to be identified according to the industrial process in question, neutralized or rendered less harmful and finally disposed of into the surrounding land, air or watercourses. It is therefore of vital importance to every environmental, pollution or plant manager or engineer that these processes be fully understood and implemented or the cost to either the company or the environment can be catastrophic. With increasing government regulation of pollution, as well as willingness to levy punitive fines for transgressions, and the ever-present financial imperative to carry out these activities in the most efficient and cost-effective manner it is the responsibility of the professionals in question to ensure that they have the most up-to-date information available at their disposal. This book provides not only that, but the only available methodology for identifying which waste types are produced from which industrial processes, and how they can be treated. This unique feature makes this book one that every environmental, industrial and plant manager, engineer and consultant will want to have on their bookshelf. Essential aspect of, and requirement for, all manufacturing industry The only up-to-date book on this subject area available Takes a practical applications standpoint, not a theoretical approach

Unit Operations in Environmental Engineering - Louis Theodore 2017-09-18

The authors have written a practical introductory text exploring the theory and applications of unit operations for environmental engineers that is a comprehensive update to Linvil Rich's 1961 classic work, "Unit Operations in Sanitary Engineering". The book is designed to serve as a training tool for those individuals pursuing degrees that include courses on unit operations. Although the literature is inundated with publications in this area emphasizing theory and theoretical derivations, the goal of this book is to present the subject from a strictly pragmatic introductory point-of-view, particularly for those individuals involved with environmental engineering. This book is concerned with unit operations, fluid flow, heat transfer, and mass transfer. Unit operations, by definition, are physical processes although there

are some that include chemical and biological reactions. The unit operations approach allows both the practicing engineer and student to compartmentalize the various operations that constitute a process, and emphasizes introductory engineering principles so that the reader can then satisfactorily predict the performance of the various unit operation equipment.

Handbook of Emergency Response to Toxic Chemical Releases - Nicholas P. Cheremisinoff  
1995-12-31

This handbook has been prepared as a working reference for the safety officer, the environmental engineer, and the consultant. For the safety officer, this handbook provides detailed guidelines and instructions in preparing Right-to-Know Reporting Audits, establishing programs and training employees on hazard awareness, and developing and implementing emergency response programs in the workplace and at off-site operations. For the environmental engineer, this handbook provides extensive technical data on toxic chemical properties and detailed instructional aid on how to properly prepare toxic chemical release inventory reporting. For the environmental consultant, an extensive overview of corrective action technologies is provided.

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### **Operation and Maintenance Manual for Fabric Filters** - 1986

*NRC Regulatory Guides* - U.S. Nuclear Regulatory Commission 1973

A compilation of currently available electronic versions of NRC regulatory guides.

**Sustainable Air Pollution Management** - Ramesha Chandrappa 2015-08-21

This work is intended as a textbook on the theory and practice of sustainable air pollution management. The book discusses the fundamental aspects of traditional air pollution topics as well as some more advanced topics (such as atmospheric brown cloud, trans-boundary movement of air pollutants, air transportation of radioactive material, biological air pollutants, etc.). Though much has been written about theory of Air Pollution Management, it is still not practiced in society

for a variety of reasons. Having worked at the grass roots level and travelled extensively, the authors have captured useful, cost-effective and successfully implemented practices with their cameras and notebooks. The non-technical issues that are often seen as a hindrance to adopting sustainable solutions due to political, legal and social factors are also addressed to enable readers to understand a different dimension of social problems. Topics covered include selecting a separation process, process description, materials selection logic, implementation etc. Theory, design and operation specifications are also included for each air pollution management option. The book is an excellent guide for those readers looking to understand and practice sustainable air pollution management. Readers also learn how energy-efficient and cost-effective methods can be successfully used to reduce the production of contaminants, providing cleaner air.

Fossil Energy Update - 1982

### **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.

**Point Sources of Pollution: Local Effects and their Control - Volume II** - Qian Yi

2009-08-17

Point Sources of Pollution: Local Effects and their Control is a component of Encyclopedia of Environmental and Ecological Sciences, Engineering and Technology Resources in the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. Point sources of pollution are the major causes of degradation of ecosystems, and may have significant effects on human health if they are not properly controlled. They can be classified in terms of sources, the discharged media, and the pollutants themselves. Broadly speaking, the sources include municipal and industrial sector activities, and the media include water, air, and solids. Noise is also an important form of pollution. Pollutant compositions from point sources can be vast, varied, and complex, and can vary between different countries and regions. The Theme discusses matters of great relevance to our world such as: Vehicular Emissions; Industrial Pollution; Domestic Pollution; Environmental Pollutants and Their Control; Technologies for Air Pollution Control; and Technologies for Water Pollution Control. These two volumes are aimed at the following five major target audiences: University and College students Educators, Professional practitioners, Research personnel and Policy analysts, managers, and decision makers and NGOs.

*Air Pollution Control Equipment Calculations* - Louis Theodore 2008-08-04

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.

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.

**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 Quality Management in the United States** - National Research Council 2004-09-30

Managing the nation's air quality is a complex undertaking, involving tens of thousands of people in regulating thousands of pollution sources. The authors identify what has worked and what has not, and they offer wide-ranging recommendations for setting future priorities, making difficult choices, and increasing innovation. This new book explores how to better integrate scientific advances and new technologies into the air quality management system. The volume reviews the three-decade history of governmental efforts toward cleaner air, discussing how air quality standards are set and results measured, the design and implementation of control strategies, regulatory processes and procedures, special issues with mobile pollution sources, and more. The book looks at efforts to spur social and behavioral changes that affect air quality, the effectiveness of market-based instruments for air quality regulation, and many other aspects of the issue. Rich in technical detail, this book will be of interest to all those engaged in air quality management: scientists, engineers, industrial

managers, law makers, regulators, health officials, clean-air advocates, and concerned citizens.

*Waste Incineration and Public Health* - National Research Council 2000-10-21

Incineration has been used widely for waste disposal, including household, hazardous, and medical waste—but there is increasing public concern over the benefits of combusting the waste versus the health risk from pollutants emitted during combustion. *Waste Incineration and Public Health* informs the emerging debate with the most up-to-date information available on incineration, pollution, and human health—along with expert conclusions and recommendations for further research and improvement of such areas as risk communication. The committee provides details on: Processes involved in incineration and how contaminants are released. Environmental dynamics of contaminants and routes of human exposure. Tools and approaches for assessing possible human health effects. Scientific concerns pertinent to future regulatory actions. The book also examines some of the social, psychological, and economic factors that affect the communities where incineration takes place and addresses the problem of uncertainty and variation in predicting the health effects of incineration processes.

Air Pollution - Arthur C. Stern 1986-08-28

Subjects extensively covered include asbestos, carbon dioxide, lead, nuclear accidents, non-ionizing radiation, stratospheric ozone, and visibility. This state-of-the-art compilation will facilitate the work of air pollution control agency personnel, air pollution research scientists, and air pollution consultants. It will also be useful to law firms involved in air pollution litigation and to air pollution equipment and instrument manufacturers. Acidic deposition (acid rain) Indoor air pollution Long range transport Risk assessment and management Hazardous and toxic substances

**Nitrogen oxides (NO<sub>x</sub>) why and how they are controlled** -

**Air Pollution Control Equipment Selection Guide, Second Edition** - Kenneth C. Schiffner 2013-09-09

This book is a good discussion of various air

pollution control equipment. It covers a wide range of equipment and gives a good overview of the principles and applications. Very valuable is the practical experiences that are not commonly available in a typical textbook. The language is easy to understand, especially for those who do not have formal training in air pollution control. It provides hybrid systems such as those applied to biomass gasification, odor control using biological technology, plasma arc waste reduction, and more.

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.

**Sources and Control of Air Pollution** - Robert Jennings Heinsohn 1999

Students and practitioners alike will find *Sources and Control of Air Pollution* by Heinsohn and Kabel to be a comprehensive treatment of possible contamination of the atmosphere, the physical and social environment in which it occurs, and the resultant impacts. The cultural, aesthetic, biological, physiological, ecological, legal and economic contexts of air pollution are addressed in depth as are the scientific and engineering principles used to mitigate it.

*Monitoring Ambient Air Quality for Health Impact Assessment* - World Health Organization. Regional Office for Europe 1999

A guide to the principles and methods of air quality assessment aimed at measuring population exposure to ambient air pollutants and estimating the effects on health. Addressed to policy-makers as well as scientists engaged in air quality monitoring, the book responds to the failure of most monitoring systems to provide data that are useful in estimating and managing threats to health. The need for exposure data on populations at special risk is also addressed.

Throughout, emphasis is placed on methods of monitoring and modelling that are cost-effective, targeted, and appropriate to local and national conditions. The report has six chapters. The first introduces WHO activities related to air quality management and explains the need for monitoring systems capable of assessing health impact. The types of information required for health impact assessment are described in chapter two, which outlines several methods of monitoring and modelling that can be used to measure the level and distribution of exposure to air pollutants in populations, identify population groups with high exposure, and estimate adverse effects on health. Chapter three formulates a general concept of air quality assessment, offering advice on principles for designing a monitoring network, interpreting and reporting data, and solving problems with quality assurance. Also included is a comparison of the advantages, disadvantages, and costs of different methods for air quality monitoring. Against this background, the fourth and most extensive chapter describes specific methods for the monitoring of carbon monoxide, ozone, sulfur dioxide, nitrogen dioxide, particulate matter, benzene, polycyclic aromatic hydrocarbons, lead, and atmospheric cadmium. Monitoring strategies for each pollutant are presented according to a standard format, which covers health effects, sources and exposure patterns, monitoring methods, recommended strategies for monitoring and assessment, and a practical example. The remaining chapters offer advice on the collation, analysis, interpretation, and dissemination of data, and summarize the main conclusions and recommendations of the report. Detailed technical guidelines for the use of various methods and models are provided in a series of annexes. The report also reproduces the newly revised WHO air quality guidelines for Europe.

Estimating Costs of Air Pollution Control - William M. Vataavuk 1990-05-03

In these pages is all the information that you-manager, engineer, or other technical professional-would need to select, size, and estimate "budget/study" level capital and annual costs for a variety of air pollution control equipment. This equipment includes wet scrubbers, carbon adsorbers, and other "add-on"

devices. This book also deals with such nonstack controls as wet dust suppression systems and flue gas desulfurization systems. The costs are current (1988 or 1989 dollars) and are mainly presented in equational form for ease of computerization and updating. Clear, comprehensive equipment sizing procedures are also detailed. Finally, several detailed example problems are included to illustrate the sizing and costing procedures. This book is not just for technical personnel, however. The material is easy to grasp and use. Anyone with an air pollution control background can follow and apply the procedures and data herein. Using this book, air pollution control professionals can now develop sound, defensible (within  $\pm 30\%$ ) cost estimates with a minimum of time and effort.

Industrial Waste Treatment Handbook -

Woodard & Curran, Inc. 2011-08-30

Industrial Waste Treatment Handbook provides the most reliable methodology for identifying which waste types are produced from particular industrial processes and how they can be treated. There is a thorough explanation of the fundamental mechanisms by which pollutants become dissolved or become suspended in water or air. Building on this knowledge, the reader will learn how different treatment processes work, how they can be optimized, and the most efficient method for selecting candidate treatment processes. Utilizing the most up-to-date examples from recent work at one of the leading environmental and science consulting firms, this book also illustrates approaches to solve various environmental quality problems and the step-by-step design of facilities. Practical applications to assist with the selection of appropriate treatment technology for target pollutants Includes case studies based on current work by experts in waste treatment, disposal, management, environmental law and data management Provides glossary and table of acronyms for easy reference

**Air Pollution Control Equipment Selection Guide** - Kenneth C. Schiffner 2002-06-26

The selection of air pollution control apparatus can be a daunting task even for experienced pollution control professionals. The Air Pollution Control Equipment Selection Guide eases the burden by providing extensive information on the best equipment available for any air

pollution control problem. Instead of endorsing one technology over another, the author provides general information so that you can decide on the proper technology to use for any given application. The book offers ample introductory information including a helpful "Air Pollution 101" chapter that reviews the basics of air pollution control. The text is divided into sections that are organized by the primary technology employed, i.e., Quenching, Cooling, Particulate Removal, Gas Absorption, etc. This structure enables you to jump from section to section and quickly compare technologies. Each section defines the type of gas cleaning device, the basic physical forces used in it, its common sizes, and its most common uses. Many air pollution control problems are not solved with one type of device, but through using a variety of designs synergistically. To make this task easier, the author includes sections on each of these devices and notes where they are commonly used in concert with other equipment. Wherever possible, the text includes current photographs or drawings of typical equipment within that device type. Written in an easy to read style, Air Pollution Control Equipment Selection Guide serves as a technologically accurate reference that will facilitate the selection of air pollution control equipment for any operation.

*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.

**Air Pollution Control Equipment** - Louis Theodore 1988-01-31

Unique problem-and-solution approach for quickly mastering a broad range of calculations  
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