Environmental Pollution Control Engineering Rao

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Green Technologies for Sustainable Water Management

ENGLISH KARTER

Air Pollution Environmental Pollution Control Engineering
Sustainable Nanotechnology for Environmental Remediation provides a single-source solution to researchers working in environmental, wastewater management, biological and composite nanomaterials applications. It addresses the potential environmental risks and uncertainties surrounding the use of nanomaterials for environmental remediation, giving an understanding of their impact on ecological receptors in addition to their potential benefits. Users will find comprehensive information on the application of state-of-the-art processes currently available to synthesize advanced green nanocomposite materials and biogenic nanomaterials. Other sections explore a wide range of promising approaches for green nanotechnologies and nanocomposites preparations. Case study chapters connect materials engineering and technology to the social context for a sustainable environment. Applications and different case studies provide solutions to the challenges faced by industry, thus minimizing negative social impacts. Provides information on the use of biologically mediated synthetic protocols to generate nanomaterials Discusses a wide range of promising?approaches?for?green nanotechnologies and nanocomposites preparations Presents novel fabrication techniques for bionanocomposites, paving the way for the development of a new generation of advanced materials that can cope with spatiotemporal multi-variant environments

Soft Computing Techniques in Solid Waste and Wastewater Management Bentham Science Publishers
This Mining Environment Management Manual is developed for the benefit of the entire mining industry in the Country. The Manual has been designed in such a manner that it can be easily used by the engineers and environmentalists in the mining complexes in their efforts for the management of mining environment. The Manual presents the existing status and comprehensive overview of all the aspects of mining environment. Since environment is a developing subject the user of the Manual is suggested to, wherever necessary, consult the web-sites of MOEF and other concerned organizations for the latest status. The manual in nineteen chapters outlines the following for the benefit of the users. 1. Broad details of the mineral mining industry in the country. 2. Policies, legislation, standards and procedures for establishing and operating the mines covering an environmental overview of the national policies and the policies of the mining companies, mining and environmental legislations and standards, site selection, environmental clearance, forestry clearance, and the various formats to be filled or establishing and operating the mines. 3. Preparation of the environmental management plans (EMPs) of the mining projects. 4. Environmental monitoring. 5. Mining methods commonly used in the Indian coal and non-coal mineral industry. 6. Environmental impacts of mining on society, ecology, land, water regime and atmosphere. 7. Environmental impact assessment (EIA). 8. Environmental management measures required in mineral mining

including the assessment of quality of life, development of R&R packages, development of surface and underground water bodies, replantation of trees, formation and management of soil and overburden dumps, environmental aspects of blasting, land reclamation and rehabilitation planning, mine fires, acid mine drainage, inundation, noise modeling, etc. 9. Mine closure comprising of legislative and social necessity of mine closure in the Indian context, mine closure planning for underground and opencast mines, and format for mine closure planning in project report. 10. Procedure for environmental performance auditing and evaluation. 11. Land acquisition and optimization of land requirement for mining and associated activities, and rehabilitation and resettlement. 12. Land use planning in mining areas. 13. Risk assessment and disaster management. 14. Environmental aspects of tailing storage. 15. Use of geographical information system in environmental management in mining areas. 16. Utilization of fly ash in mines. 17. Environmental economics. 18. Roles of executives in environmental management in mining areas. 19. Do's and don'ts in environmental management planning and implementation. The manual in simple English aims at to attract attention of one and all concerned with the management of mining environment. The manual will be useful to the following categories of the people in the mining complexes in the Country and Abroad. · Mine planners in planning and designing of the mining activities and integration of environmental management measures in the mining methods. · Mine operators in implementing the environmental management measures, monitoring and compliance of legislation. · Regulatory agencies and their executives in developing a better understanding of the mining environment related aspects and implementing the legislation. · Research workers in planning, designing, and undertaking research and development activities. · Educationists in imparting the knowledge and know-how to the participants in various academic and human resource development programs. · The Non-Governmental Organizations (NGOs) in developing a better understanding of the mining environment and assisting the mineral industry in effective implementation of the environmental management efforts. · The people in the mining complexes in developing the understanding of various aspects of the management of mining environment. In addition the Manual will be an important addition to the knowledge base in the libraries of all the institutions and organizations associated with mining and environmental management. The user is advised to read the Manual carefully and understand the various topics discussed and then use their own wisdom and the suggestions made in the Manual in design, planning, implementation and monitoring of the mining activities. The legislative aspect of mining environmental management is dynamic and time to time changes are made in the Acts. Rules and Regulations by the Central and State Governments. The user is therefore advised to get abreast with the latest developments through the web-sites of the MOEF and the Central and State Pollution Control Boards and other regulatory agencies, e.g., DGMS, IBM, etc.

Engine Emission Control Technologies

Springer Science & Business Media

An introductory course on Health, Safety and Environment (HSE) as applicable to all manufacturing and exploration engineering industries. Its first part deals with fundamentals, ecology and environmental engineering and covers air and water pollution sources, magnitude, measuring techniques and remedial measures to minimize them. The second pa

Environmental Engineering CRC Press
Designed for a first-course in environmental engineering for undergraduate engineering and postgraduate science students, the book deals with environmental pollution and its control methodologies. It explains the basic environmental technology - environmental sanitation, water supply, waste management, air pollution control and other related issues - and presents a logical and systematic treatment of topics. The book, an outgrowth of author's long experience in teaching the postgraduate science and engineering students, is presented in a student-oriented approach. It is interspersed with solved examples and illustrations to reinforce many of the concepts discussed and apprise the readers of the current practices in areas of water processing, water distribution, collection and treatment of domestic sewage and industrial waste water, and control of air pollution. It emphasizes fundamental concepts and basic appli-cations of environmental technology for management of environmental problems. Besides students, the book will be useful to the academia of environmental sciences, civil/environmental engineering as well as to environmentalists and administrators working in the field of pollution control.

Annual Bibliography World Scientific Environmental Pollution Control EngineeringNew Age International

Air and Noise Pollution Control Scientific Publishers
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.

A Design Approach Waveland Press
This book is divided into four parts that outline the use of science and technology for applications pertaining to chemical and bioprocess engineering. The book endeavors to help academia, researchers, and practitioners to use the principles and tools of Chemical and Bioprocess Engineering in a pertinent way, while attempting to point out the novel thoughts associated with the brain storming concepts encountered. As an example, the ability to use case studies

appropriately is more important, to most practitioners.

Application of Adsorbents for Water Pollution Control APH Publishing

This book focuses on various aspects related to air pollution, including major sources of air pollution, measurement techniques, modeling studies and solution approaches to control. The book also presents case studies on measuring air pollution in major urban areas, such as Delhi, India. The book examines vehicles as a source of air pollution and addresses the quantitative analysis of engine exhaust emissions. Subsequent chapters discuss particulate matter from engines and coal-fired power plants as a major pollutant, as well as emission control techniques using various after treatment systems. The book's final chapter considers future perspectives and a way forward for sustainable development. It also discusses several emission control techniques that will gain relevance in the future, when stricter emission norms will be enforced for international combustion (IC) engines as well as power plants. Given its breadth of coverage, the book will benefit a wide variety of readers, including researchers, professionals, and policymakers.

Environmental Pollution Monitoring and Control Wiley-Interscience

Environmental and Health Management of Novel Coronavirus Disease (COVID-19) examines mitigation measures that can be adopted at the time of a novel coronavirus outbreak to lessen environmental contamination and impacts on human health. The book discusses origin, structure and pathogenesis, epidemiology, environmental transmission and the potential spread routes of COVID-19 via surfaces, air, water, wastewater, medical waste and food products. It also covers guidelines and protocols for setting safety conditions to provide adequate health care and reduce the risk of infection in health and non-healthcare settings, along with preventative measures and disinfection technologies. In addition, the book discusses challenges, opportunities and future perspectives, the global crisis, and global consequences on the environment and health. With contributions from experts, this book presents a multidisciplinary reference resource for virologists, microbiologists, public health professionals, environmental health managers and others engaged in the study and mitigation of the environmental and health impacts of the virus. Covers the environmental transmission and spread of COVID-19 Includes environmental disinfection technologies for prevention of COVID-19 Provides guidelines, standards and protocols related to COVID-19

Air Pollution Control Engineering Courier Corporation

Among various water and wastewater treatment technologies, the adsorption process is considered better because of lower cost, simple design and easy operation. Activated carbon (a universal adsorbent) is generally used for the removal of diverse types of pollutants from water and wastewater. Research is now being directed towards the modification of carbon surfaces to enhance its adsorption potential towards specific pollutants. However, widespread use of commercial activated carbon is sometimes restricted especially in developing or poor countries due to its higher costs. Attempts are therefore being made to develop inexpensive adsorbents utilizing abundant natural materials, agricultural and industrial

waste materials. Use of waste materials as low-cost adsorbents is attractive due to their contribution in the reduction of costs for waste disposal, therefore contributing to environmental protection. This e-book explores knowledge on recent developments in adsorbents synthesis and their use in water pollution control. This handy reference work is intended for researchers and scientists actively engaged in the study of adsorption and the development and application of efficient adsorption technology for water treatment. This e-book covers a wide range of topics including modeling aspects of adsorption process and the applications of conventional and non-conventional adsorbents in water remediation emphasizing sorption mechanisms of different pollutants on the adsorbents.

Environmental Instrumentation and Analysis Handbook CRC Press

A comprehensive resource for information about differenttechnologies and methods to measure and analyze contamination ofair, water, and soil. * Serves as a technical reference in the field of environmentalscience and engineering * Includes information on instrumentation used for measurement andcontrol of effluents and emissions from industrial facilities thatcan directly influence the environment * Focuses on applications, making it a practical reference tool

Second Edition ASCE Publications

This new volume covers the important issues related to environmental emissions from SI and CI engines as well as their formation and various pollution mitigation techniques. The book addresses aspects of improvements in engine modification, such as design modifications for enhanced performance, both with conventional fuels as well as with new and alternative fuels. It also explores some new combustion concepts that will help to pave the way for complying with new emission concepts. Alternative fuels are addressed in this volume to help mitigate harmful emissions, and alternative power sources for automobiles are also discussed briefly to cover the switch over from fueled engines to electrics, including battery-powered electric vehicles and fuel cells. The authors explain the different technologies available to date to overcome the limitations of conventional prime movers (fueled by both fossil fuels and alternative fuels). Topics examined include: • Engine modifications needed to limit harmful emissions • The use of engine after-treatment devices to contain emissions • The development of new combustion concepts • Adoption of alternative fuels in existing engines • Switching over to electrics—advantages and limitations • Specifications of highly marketed automobiles • Emission measurement methods

Water Pollution Control Engineering Academic Press

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.

Statistical Methods for Environmental Pollution Monitoring KHANNA PUBLISHING HOUSE

This book discusses a broad range of statistical design and analysis methods that are particularly well suited to pollution data. It explains key statistical techniques in easy-to-comprehend terms and uses practical examples, exercises, and case studies to illustrate procedures. Dr. Gilbert begins by discussing a space-time framework for sampling pollutants. He then shows how to use statistical sample survey methods to estimate average and total amounts of pollutants in the environment, and how to determine the number of field samples and measurements to collect for this purpose. Then a broad range of statistical analysis methods are described and illustrated. These include: * determining the number of samples needed to find hot spots * analyzing pollution data that are lognormally distributed * testing for trends over time or space * estimating the magnitude of trends * comparing pollution data from two or more populations New areas discussed in this sourcebook include statistical techniques for data that are correlated, reported as less than the measurement detection limit, or obtained from field-composited samples. Nonparametric statistical analysis methods are emphasized since parametric procedures are often not appropriate for pollution data. This book also provides an illustrated comprehensive computer code for nonparametric trend detection and estimation analyses as well as nineteen statistical tables to permit easy application of the discussed statistical techniques. In addition, many publications are cited that deal with the design of pollution studies and the statistical analysis of pollution data. This sourcebook will be a useful tool for applied statisticians, ecologists, radioecologists, hydrologists, biologists, environmental engineers, and other professionals who deal with the collection, analysis, and interpretation of pollution in air, water, and soil.

Sustainable Nanotechnology for Environmental Remediation ALPHA SCIENCE INTERNATIONAL LIMITED

The 28 chapters in this collection describe science-based principles and technological advances behind green technologies that can be effective solutions to pressing problems in sustainable water management.

Health and Environmental Impacts Elsevier

AIR QUALITY MONITORING AND CONTROL STRATEGY essentially deals with air quality and underlines a strategy to improve it. To this effect this volume describes briefly the problem of air pollution, impact of various pollutants present in the indoor/outdoor atmosphere on health, the various monitoring techniques/instruments and their practical use, instructions, precautions etc., control instrumentation and environment impact assessment. The answer to questions like the need for air quality monitoring, choice of monitoring location and parameters, averaging time and frequencies etc. has been provided along with the basic

statistics required to work out certain statistical figures in air quality. The science of meteorology, an important subject that takes care of dispersion/dilution of air pollutants at a place, has been discussed briefly. A chapter on noise pollution, another vital air toxicant, has also been dealt with to a certain limit. Two case studies have been incorporated to elucidate the importance of EIA and the need to develop a strategy for management of ambient air quality. Revised new standards have also been included.
Fundamentals of Air Pollution Engineering Springer Nature
Presents the fundamentals of air pollution. This book covers principles and practices of air pollution such as sampling, analysis and control. It also deals with the types, origins, sources, atmospheric movements and effects of air pollution.
Systems Approach to Air Pollution Control Pearson College Division
Annotation "Advances in Water and Wastewater Treatment provides state-of-the-art information on the application of innovative technologies for water and wastewater treatment with an emphasis on the scientific principles for pollutant or pathogen removal. Described in detail are the practice and principles of wastewater treatment on topics such as: global warming, sustainable development, nutrient removal, bioplastics production, biosolid digestion and composting, pathogen reduction, metal leaching, secondary clarifiers, surface and subsurface constructed wetland, and wastewater reclamation. Environmental engineers and scientists involved in the practice of environmental engineering will benefit from the basic principles to innovation technologies application."--BOOK JACKET. Title Summary field provided by Blackwell North America, Inc. All Rights Reserved.
Environment, Pollution and Management Elsevier
This book on Basics of Environmental Science and Engineering will provide complete overview of the status and role of various resources on environment, environmental awareness and protection. The book has simple approach on various factors for undergraduate and post graduate level. This book will be useful for engineering as well as science graduates also. All efforts have been made to cover the present topics on environmental issues with adequate and relevant examples.
Environmental Pollution and Control KHANNA PUBLISHING HOUSE
Mining is basically an intermediate use of land and it causes various impacts on all the components of environment. In most situations the impacts on land are severe and may cause the land to become useless for any economic use after mining. Since, the mining companies take land areas which have been in various uses before the onset of mining activities it should have been obligatory for the companies to develop the land areas for uses most suitable for the economic activities after mining. Though this was known right from the inception of the mining activities the efforts towards developing the land after mining were negligible. This has resulted in devastation of mined out land in many locations in the country. Keeping in view the importance and the necessity of development of land areas legislation have been formulated for mine closure. The legislation are recent not many mines have been closed in accordance with the provisions therein. A lot of work is still required to be done to make mine closure really effective. All over the

world the importance of the mine closure is being realized due mainly to the following reasons. Closure planning at all the stages in a mine's life is important to the economics of a mine and such a planning results in a large cost savings. In this book the following aspects of mine closure planning and implementation in the opencast and underground mines, with special reference to the mining situations in the India, have been outlined. 1. Impacts of mining on environmental components and their roles in mine closure planning; 2. Legal, social and economic necessity of mine closure; 3. Land use planning as a tool for mine closure planning and implementation; 4. How to incorporate mine closure in mine planning; 5. Mine closure planning in underground and opencast mines; 6. Implications of mine fires in mine closure; 7. Mine closure planning for small mines; 8. Taking care of the abandoned mines, i.e., closure of abandoned mines; 9. Economics of mine closure; 10. Management of ecology during mine closure. The book is expected to be useful to the practical mining engineers and environmentalists in mine planning and design. It should also be useful to the researchers and students of mining and environment.