

Industrial Environmental Control Pulp And Paper Industry

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Bleach Plant Effluents from the Pulp and Paper Industry - Pratima Bajpai 2013-06-22

This book covers bleach plant effluents, that most polluting effluent from the pulp and paper industry. Disappearance of benthic invertebrates, a high incidence of fish diseases, and mutagenic effects on the aquatic fauna are some of the consequences of the disposal of bleach effluents into surface waters. This book describes environmental impact of bleach plant effluents, environmental regulations, and measures to reduce the pollution load by internal process modification and external treatment of bleach plant effluents.

Environmental impact analysis of pulp and paper production - Matthias Okoro 2014-10-01

Seminar paper from the year 2012 in the subject Environmental Sciences, grade: A, University of Nigeria (CENTER FOR ENVIRONMENTAL MANAGEMENT AND CONTROL), course: ENVIRONMENTAL MANAGEMENT AND CONTROL, language: English, abstract: The complexity of the paper issue means that firm conclusions are hard to draw. All paper manufactures causes harm to the environment and more often than not the determining factors in a paper mills. Environmental performance is not the process, paper type or fiber source but the location, mill practice and mill operator. Hence to try to grade paper products or production techniques into some kind of hierarchy of environmental performance, based solely on the manufacture process, is extremely difficult. Yet, globally however, the environmental impact of paper is significant, which has led to changes in industry and behavior at both business and personal levels. With the use of modern technology such as the printing press and the highly mechanized harvesting of wood, paper has become a cheap commodity everywhere. This has led to a high level of consumption and waste. With the rise in environmental awareness on the pollution of the Eco- system by the effluent of pulp and paper it became imperative to run a clearer analysis of its environmental impact.

Pulp and Paper Industry - Pratima Bajpai 2017-02-25

Pulp and Paper Industry: Emerging Waste Water Treatment Technologies is the first book which comprehensively reviews this topic. Over the past decade, pulp and paper companies have continued to focus on minimizing fresh water use and effluent discharges as part of their move towards sustainable operating practices. Three stages—basic conservation, water reuse and water recycling—provide a systematic approach to water resource management. Implementing these stages requires increased financial investment and better utilization of water resources. The ultimate goal for pulp and paper companies is to have effluent-free factories with no negative environmental impact. The traditional water treatment technologies that are used in paper mills are not able to remove recalcitrant contaminants. Therefore, advanced water treatment technologies are being included in industrial wastewater treatment chains aiming to either improve water biodegradability or its final quality. This book discusses various measures being adopted by the pulp and paper industry to reduce water consumption and treatment techniques to treat wastewater to recover it for reuse. The book also examines the emerging technologies for treatment of effluents and presents examples of full-scale installations. Provides thorough and in-depth coverage of advanced treatment technologies which will benefit the industry personnel, pulp manufacturers, researchers and advanced students Presents new treatment strategies to improve water reuse and fulfill the legislation in force regarding wastewater discharge Presents viable solutions for pulp and paper manufacturers in terms of wastewater treatment Presents examples of full-scale installations to help motivate mill personnel to incorporate new technologies

Industrial Environmental Management - Tapas K. Das 2020-02-26

Provides aspiring engineers with pertinent information and technological methodologies on how best to manage industry's modern-day environment concerns This book explains why industrial environmental management is important to human environmental interactions and describes what the physical, economic, social, and technological constraints to achieving the goal of a sustainable environment are. It emphasizes recent progress in life-cycle sustainable design, applying green engineering principles and the concept of Zero Effect Zero Defect to minimize wastes and discharges from various manufacturing facilities. Its goal is to educate engineers on how to obtain an optimum balance between environmental protections, while allowing humans to maintain an acceptable quality of life. Industrial Environmental Management: Engineering, Science, and Policy covers topics such as industrial wastes, life cycle sustainable design, lean manufacturing, international environmental regulations, and the assessment and management of health and environmental risks. The book also looks at the economics of manufacturing pollution prevention; how eco-industrial parks and process intensification will help minimize waste; and the application of green manufacturing principles in order to minimize wastes and discharges from manufacturing facilities. Provides end-of-chapter questions along with a solutions manual for adopting professors Covers a wide range of interdisciplinary areas that makes it suitable for different branches of engineering such as wastewater management and treatment; pollutant sampling; health risk assessment; waste minimization; lean manufacturing; and regulatory information Shows how industrial environmental management is connected to areas like sustainable engineering, sustainable manufacturing, social policy, and more Contains theory, applications, and real-world problems along with their solutions Details waste recovery systems Industrial Environmental Management: Engineering, Science, and Policy is an ideal textbook for junior and senior level students in multidisciplinary engineering fields such as chemical, civil, environmental, and petroleum engineering. It will appeal to practicing engineers seeking information about sustainable design principles and methodology.

Pollution Prevention - Ryan Dupont 2016-11-18

This new edition has been revised throughout, and adds several sections, including: lean manufacturing and design for the environment, low impact development and green infrastructure, green science and engineering, and sustainability. It presents strategies to reduce waste from the source of materials development through to recycling, and examines the basic concepts of the physical, chemical, and biological properties of different pollutants. It includes case studies from several industries, such as pharmaceuticals, pesticides, metals, electronics, petrochemicals, refineries, and more. It also addresses the economic considerations for each pollution prevention approach.

Environmental Waste Management - Ram Chandra 2016-04-19

Rapid industrialization has resulted in the generation of huge quantities of hazardous waste, both solid and liquid. Despite regulatory guidelines and pollution control measures, industrial waste is being dumped on land and discharged into water bodies without adequate treatment. This gross misconduct creates serious environmental and public health

Green Pulp and Paper Industry - Amit Kumar 2021-07-19

This book provides recent developments and future perspectives of pulp and paper processing based on biotechnology to replace conventional environmental unfriendly chemical processes. The use of microorganism and microbial enzymes in various processes such as bleaching, deinking, refining, dissolving

pulp, debarking & pitch removal, slime control, wastewater treatment and waste material valorisation are discussed.

Environmentally Friendly Production of Pulp and Paper - Pratima Bajpai 2011-03-21

Implementing Cleaner Production in the pulp and paper industry The large—and still growing—pulp and paper industry is a capital- and resource-intensive industry that contributes to many environmental problems, including global warming, human toxicity, ecotoxicity, photochemical oxidation, acidification, nutrification, and solid wastes. This important reference for professionals in the pulp and paper industry details how to improve manufacturing processes that not only cut down on the emission of pollutants but also increase productivity and decrease costs. Environmentally Friendly Production of Pulp and Paper guides professionals in the pulp and paper industry to implement the internationally recognized process of Cleaner Production (CP). It provides updated information on CP measures in: Raw material storage and preparation Pulping processes (Kraft, Sulphite, and Mechanical) Bleaching, recovery, and papermaking Emission treatment and recycled fiber processing In addition, the book includes a discussion on recent cleaner technologies and their implementation status and benefits in the pulp and paper industry. Covering every aspect of pulping and papermaking essential to the subject of reducing pollution, this is a must-have for paper and bioprocess engineers, environmental engineers, and corporations in the forest products industry.

Industrial Innovation and Environmental Regulation - International Development Research Centre (Canada) 2007

What role should governments play in protecting the environment and controlling the environmental impacts of industry? Do regulations benefit the environment? And how do they affect industrial innovation? Since the early 1970s, regulations have been used to coerce producers of goods and services into internalizing the environmental costs of production. These efforts have often faced opposition on practical and ideological grounds. Beginning in the 1980s, there has been a movement toward liberalization, coupled with the continued failure of the market to protect the environment as a public good. As a result, private and public sector interests have been debating the appropriate role of governments in protecting and improving the environment and controlling the environmental impact of industry. Using case studies from numerous countries, this book examines political and industrial trends and the responses to these challenges. The authors conclude that the complexities of environmental and economic relationships disallow universal solutions, and they stress the need for context-specific perspectives on the role of regulatory measures in environmental innovation.

Industrial Pollution Control - Nancy J. Sell 1992-11-11

Industrial Pollution Control: Issues and Techniques Second Edition Nancy J. Sell This revised guide incorporates all the important information on pollution sources, control methods, and pollution regulations generated since publication of the previous edition in 1981. This edition surveys the impacts of every type of pollution on health, plants, materials, and weather. It discusses how different types of pollution are produced, laws governing specific emissions, and both existing and emerging air, water, and solid waste control techniques. Detailed sections zero in on processing methods, pollution production, and control methods in specific industries, including chemical, physical, and economic factors that inhibit better pollution control. Case studies offer insights into processes that directly minimize emissions or indirectly reduce them by decreasing energy needs. Pollution issues of iron and steel manufacturing, foundry operations, metals finishing, cement manufacture, glass manufacture, paper and pulp, food processing, brewing, tanning, and chemical industries are probed in depth. Among the new pollution control strategies covered are: * Regulations, treatment techniques, and disposal methods for hazardous wastes * Direct steelmaking processes that reduce pollution * Modified glassmaking furnaces that decrease pollution * Non-chlorine pulp bleaching sequences that curtail production of toxic substances such as dioxin * Secondary fiber utilization and reduction of PCB emissions * Resource recovery from sludges and ashes * Chemical spill containment and cleanup * Uses of degradation and recycling to reduce plastics waste Coverage of the impact of U.S. regulations, status of the U.S. environment, continuing problems, economic costs, and cost-benefit issues further increases the value of this source to environmental engineers and scientists working for the EPA, state regulatory agencies, or consulting engineering firms. This guide is also

a vital reference for environmentalists working with advocacy groups, and environmental or process engineers in industry.

Pulp and Paper Industry - Pratima Bajpai 2015-04-21

Pulp and Paper Industry: Microbiological Issues in Papermaking features in-depth and thorough coverage of microbiological issues in papermaking and their consequences and the current state of the different alternatives for prevention, treatment and control of biofilm/slime considering the impact of the actual technological changes in papermaking on the control programmes. The microbial issues in paper mill systems, chemistry of deposits on paper machines, the strategies for deposit control and methods used for the analysis of biofouling are all dealt in this book along with various growth prevention methods. The traditional use of biocides is discussed taken into account the new environmental regulations regarding their use. Finally, discusses the trends regarding the future of the microbiological control in papermaking systems. In-depth coverage of microbiological issues in papermaking and their consequences Discusses eco-efficient processes (green processes) for biofilm/slime control Offers a thorough review of the current literature with links to the primary literature Comprehensive indexing Author is an authority in the pulp and paper industry

Encyclopedia of Forest Sciences - Julian Evans 2004-04-02

A combination of broad disciplinary coverage and scientific excellence, the Encyclopedia of Forest Sciences will be an indispensable addition to the library of anyone interested in forests, forestry and forest sciences. Packed with valuable insights from experts all over the world, this remarkable set not only summarizes recent advances in forest science techniques, but also thoroughly covers the basic information vital to comprehensive understanding of the important elements of forestry. The Encyclopedia of Forest Sciences also covers relevant biology and ecology, different types of forestry (e.g. tropical forestry and dryland forestry), scientific names of trees and shrubs, and the applied, economic, and social aspects of forest management. Valuable key features further enhance the utility of this Encyclopedia as an exceptional reference tool. Also available online via ScienceDirect - featuring extensive browsing, searching, and internal cross-referencing between articles in the work, plus dynamic linking to journal articles and abstract databases, making navigation flexible and easy. For more information, pricing options and availability visit www.info.sciencedirect.com. Edited and written by a distinguished group of editors and contributors Well-organized encyclopedic format provides concise, readable entries, easy searches, and thorough cross-references Illustrative tables, figures, and photographs in every entry, produced in full color Comprehensive glossary defines new and important terms Complete, up-to-date coverage of over 60 areas of forest sciences - sure to be of interest to scientists, students, and professionals alike! Editor-in-Chief is the past president of the International Union of Forestry Research Organizations, the oldest international collaborative forestry research organization with over 15,000 scientists from 100 countries

Green Chemistry and Sustainability in Pulp and Paper Industry - Pratima Bajpai 2015-06-23

This book features in-depth and thorough coverage of Minimum Impact Mill Technologies which can meet the environmental challenges of the pulp and paper industry and also discusses Mills and Fiberlines that encompass "State-of-the-Art" technology and management practices. The minimum impact mill does not mean "zero effluent", nor is it exclusive to one bleaching concept. It is a much bigger concept which means that significant progress must be made in the following areas: Water Management, Internal Chemical Management, Energy Management, Control and Discharge of Non-Process Elements and Removal of Hazardous Pollutants. At the moment, there is no bleached kraft pulp mill operating with zero effluent. With the rise in environmental awareness due to the lobbying by environmental organizations and with increased government regulation there is now a trend towards sustainability in the pulp and paper industry. Sustainable pulp and paper manufacturing requires a holistic view of the manufacturing process. During the last decade, there have been revolutionary technical developments in pulping, bleaching and chemical recovery technology. These developments have made it possible to further reduce loads in effluents and airborne emissions. Thus, there has been a strong progress towards minimum impact mills in the pulp and paper industry. The minimum-impact mill is a holistic manufacturing concept that encompasses environmental management systems, compliance with environmental laws and regulations and manufacturing technologies.

Biermann's Handbook of Pulp and Paper - Pratima Bajpai 2018-05-17

Biermann's Handbook of Pulp and Paper: Paper and Board Making, Third Edition provides a thorough introduction to paper and board making, providing paper technologists recent information. The book emphasizes principles and concepts behind papermaking, detailing both the physical and chemical processes. It has been updated, revised and extended. Several new chapters have been added. Papermaking chemistry has found an adequate scope covering this important area by basics and practical application. Scientific and technical advances in refining, including the latest developments have been presented. The process of stock preparation describes the unit processes. An exhaustive overview of Chemical additives in Pulp and Paper Industry is included. Paper and pulp processing and additive chemicals are an integral part of the total papermaking process from pulp slurry, through sheet formation, to effluent disposal. Water circuits with loop designs and circuit closure are presented. The chapter on paper and board manufacture covers the different sections in the paper machine and also fabrics, rolls and roll covers, and describes the different types of machines producing the various paper and board grades. Coating is dealt with in a separate chapter covering color formulation and preparation and also coating application. Paper finishing gives an insight into what happens at roll slitting and handling. The chapter on environmental impact includes waste water treatment and handling, air emissions, utilization and solid residue generation and mitigation. The major paper and board grades and their properties, are described. Biotechnological methods for paper processing are also presented. This handbook is essential reading for Applied Chemists, Foresters, Chemical Engineers, Wood Scientists, and Pulp and Paper technologist/Engineers, and anyone else interested or involved in the pulp and paper industry. Provides comprehensive coverage on all aspects of papermaking Covers the latest science and technology in papermaking Includes traditional and biotechnological methods, a unique feature of this book Presents the environmental impact of papermaking industries Sets itself apart as a valuable reference that every pulp and papermaker/engineer/chemist will find extremely useful

Biotechnology for Environmental Protection in the Pulp and Paper Industry - P. Bajpai 2012-12-06

Pulp and paper production has increased globally and will continue to increase in the near future. Approximately 155 million tons of wood pulp is produced worldwide and about 260 million is projected for the year 2010. To be able to cope with increasing demand, an increase in productivity and improved environmental performance is needed as the industry is also under constant pressure to reduce and modify environmental emissions to air and water. The authors give updated information on various biotechnological processes useful in the pulp and paper industry which could help in reducing the environmental pollution problem, in addition to other benefits. Various chapters deal with the latest developments in such areas as raw material preparation, pulping, bleaching, water management, waste treatment and utilization. The book also covers the environmental regulations in various parts of the world as well as the role of biotechnology in reducing environmental problems.

EPA Office of Compliance Sector Notebook Project - 1995

Environmental Regulation - John McEldowney 2014-05-30

Featuring an original introduction by the editors, this important collection of essays explores the main issues surrounding the regulation of the environment. The expert contributors illustrate that regulating the environment in the UK is conceptually complex, involves a diverse range of institutions, techniques and methodologies and crosses geographical and national boundaries. In the USA it is more formalised, juridical, adversarial and formally dependent upon legal rules. The articles highlight the fact that despite differences in the UK and the USA's regulatory styles, environmental regulation today has much in common with both traditions.

The Slain Wood - William Boyd 2015-11-05

It shows how the industry's massive pollution loads significantly disrupted local environments and communities, leading to a long struggle to regulate and control that pollution.

Nanocellulose Materials - Ramesh Oraon 2022-01-17

Nanocellulose Materials: Fabrication and Industrial Applications focuses on the practices, distribution and applications of cellulose at the nanoscale. The book delivers recent advancements, highlights new

perspectives and generic approaches on the rational use of nanocellulose, and includes sustainability advantages over conventional sources towards green and sustainable industrial developments. The topics and sub-topics are framed to cover all key features of cellulose, from extraction to technological evolution. Nanocellulose has great potential due to its versatility and numerous applications, including the potential role of nanocellulose scaffold derivatives towards active involvement in the energy sector, chemical sensing, catalysis, food industry and anti-bacterial coatings towards land, agricultural and aquatic systems. Explores the whole spectrum of industrial scale fabrications and the utilization of nanocellulose as a sustainable material or as part of a sustainability agenda Discusses the environmental, legal, health and safety issues of nanocellulose Assesses the major challenges and opportunities for using nanocellulose at an industrial scale

Biotechnology for Environmental Protection in the Pulp and Paper Industry - P. Bajpai 2011-09-16

Pulp and paper production has increased globally and will continue to increase in the near future. Approximately 155 million tons of wood pulp is produced worldwide and about 260 million is projected for the year 2010. To be able to cope with increasing demand, an increase in productivity and improved environmental performance is needed as the industry is also under constant pressure to reduce and modify environmental emissions to air and water. The authors give updated information on various biotechnological processes useful in the pulp and paper industry which could help in reducing the environmental pollution problem, in addition to other benefits. Various chapters deal with the latest developments in such areas as raw material preparation, pulping, bleaching, water management, waste treatment and utilization. The book also covers the environmental regulations in various parts of the world as well as the role of biotechnology in reducing environmental problems.

Environmental Management - G N Pandey 1997-05-01

Pollution has become a worldwide phenomenon and so has become concern for its control. The alarming situation has awakened administrators, engineers, technocrats, governments and international organizations to take steps to curb pollution. Educational institutions now include in their curricula various aspects of pollution (its nature and dimensions, health hazards it has created, and measures of controlling and managing it, etc.). This book contains a core course in Environment Management. It will be useful to students of Civil, Mechanical, Chemical, Biochemical and other disciplines of Engineering and Technology.

Biotechnology for Pulp and Paper Processing - Pratima Bajpai 2018-02-14

The book provides the most up-to-date information available on various biotechnological processes useful in the pulp and paper industry. The first edition was published in 2011, covering a specific biotechnological process or technique, discussing the advantages, limitations, and prospects of the most important and popular processes used in the industry. Many new developments have taken place in the last five years, warranting a second edition on this topic. The new edition contains about 35% new material covering topics in Laccase application in fibreboard; biotechnology in forestry; pectinases in papermaking; stickies control with pectinase; products from hemicelluloses; value added products from biorefinery lignin; use of enzymes in mechanical pulping.

The U. S. Paper Industry and Sustainable Production - Maureen Smith 1997-03-12

The problems recyclers face with wastepaper are connected to the issues addressed by forest advocates, as well as to the difficulties confronted by those involved with industrial pollution from the paper industry. In this richly detailed study, Maureen Smith shows how industrial and environmental analysis can be synthesized to clarify these complex problems and produce solutions. Smith outlines the basic structural characteristics of the U.S. pulp and paper industry and its relationship to the larger forest products sector, as well as its patterns of domestic and global fiber resource use. She then reviews the core technologies employed in virgin pulp production, with an emphasis on their environmental impacts, the role of technological innovation, and the relationships between fiber choices and pollution prevention. Building on this base she reveals structural barriers within the industry that have impeded positive change and shows how these barriers are reinforced by the traditional isolation of environmental policy domains. The study includes a comparative analysis of how organochlorine pollution from pulp mills has been addressed in the United States, Europe, and Canada (and why the United States has seen the slowest rate of progress); an assessment of commodity trade patterns in the industry and how they are linked to resource demand; an

examination of the momentum building around annual plant fiber use and the diverse interests it reflects; and a review of recent developments in paper recycling within the context of historical trends in fiber utilization. A case study of the controversial environmental review process of the largest recycled pulp and paper mill ever proposed ties together earlier elements of the book and forms the basis for the conclusions. In closing, Smith argues convincingly against narrowly focused attempts to "fix" the problems associated with the industry, and offers practical guidance on new frameworks and approaches for industrial restructuring. She highlights the need for regional perspectives that integrate environmental, social, and economic objectives. Urban and Industrial Environment series

Industrial Environmental Performance Metrics - National Academy of Engineering and National Research Council 1999-09-24

Industrial Environmental Performance Metrics is a corporate-focused analysis that brings clarity and practicality to the complex issues of environmental metrics in industry. The book examines the metrics implications to businesses as their responsibilities expand beyond the factory gate—upstream to suppliers and downstream to products and services. It examines implications that arise from greater demand for comparability of metrics among businesses by the investment community and environmental interest groups. The controversy over what sustainable development means for businesses is also addressed. Industrial Environmental Performance Metrics identifies the most useful metrics based on case studies from four industries—automotive, chemical, electronics, and pulp and paper—and includes specific corporate examples. It contains goals and recommendations for public and private sector players interested in encouraging the broader use of metrics to improve industrial environmental performance and those interested in addressing the tough issues of prioritization, weighting of metrics for meaningful comparability, and the longer term metrics needs presented by sustainable development.

The Ecology of Industry - National Academy of Engineering 1998-09-03

This volume provides insights into the environmental practices of five industry sectors: materials processing, manufacturing, electric utilities, and pulp and paper. The ecology of industry is presented in terms of systems of production and consumption, taking into account the flows of material, energy, capital, and information. The book examines ways to improve the environmental performance of these industries (and others, such as the service sector) and shows how decisions made by industry managers can leverage systemic environmental improvements elsewhere in the economy.

Management of Pulp and Paper Mill Waste - Pratima Bajpai 2016-08-23

Pulp and paper mill industries are always associated with the disposal problem of highly contaminated sludge or bio-solids. The development of innovative systems to maximize recovery of useful materials and/or energy in a sustainable way has become necessary. The management of wastes, in particular of industrial waste, in an economically and environmentally acceptable manner is one of the most critical issues facing modern industry, mainly due to the increased difficulties in properly locating disposal works and complying with even more stringent environmental quality requirements imposed by legislation. This book presents a general Introduction on waste management in the pulp and paper industry and contains topics on the generation of waste in pulp and paper mills, waste composition, methods of sludge pre-treatment, processes and technologies for conversion of pulp and paper mill waste into valuable products, waste reduction techniques employed in the pulp and paper Industry worldwide and future trends.

Environmental Fate and Effects of Pulp and Paper - Mark R. Servos 2020-02-03

In recent years, there have been emerging concerns regarding the fate and effects of pulp and paper mill effluents on the environment. Countries throughout the world are focusing attention on the implementation of regulatory and monitoring programs. In response, industry has begun to implement a variety of process and treatment technologies designed to minimize or eliminate the potential impacts. Environmental Fate and Effects of Pulp and Paper Mill Effluents explores the most active and critical current research and experimentation from around the world. This comprehensive overview examines the identity and origin of chemicals in pulp mill effluents, environmental fate of chemicals from pulp and paper mills, bioaccumulation of substances from pulp mills to fish and wildlife, field and laboratory studies of biochemical and whole organism responses associated with pulp and paper effluents, integrated monitoring and future research, and policy directions of this rapidly evolving field. Written by prominent scientists

from around the world with contributions from industry, government, and academia, this important new book provides a balanced global perspective of the recent scientific findings and the challenges being faced in the immediate future.

Industrial Environmental Management - Tapas K. Das 2020-01-29

Provides aspiring engineers with pertinent information and technological methodologies on how best to manage industry's modern-day environment concerns This book explains why industrial environmental management is important to human environmental interactions and describes what the physical, economic, social, and technological constraints to achieving the goal of a sustainable environment are. It emphasizes recent progress in life-cycle sustainable design, applying green engineering principles and the concept of Zero Effect Zero Defect to minimize wastes and discharges from various manufacturing facilities. Its goal is to educate engineers on how to obtain an optimum balance between environmental protections, while allowing humans to maintain an acceptable quality of life. Industrial Environmental Management: Engineering, Science, and Policy covers topics such as industrial wastes, life cycle sustainable design, lean manufacturing, international environmental regulations, and the assessment and management of health and environmental risks. The book also looks at the economics of manufacturing pollution prevention; how eco-industrial parks and process intensification will help minimize waste; and the application of green manufacturing principles in order to minimize wastes and discharges from manufacturing facilities. Provides end-of-chapter questions along with a solutions manual for adopting professors Covers a wide range of interdisciplinary areas that makes it suitable for different branches of engineering such as wastewater management and treatment; pollutant sampling; health risk assessment; waste minimization; lean manufacturing; and regulatory information Shows how industrial environmental management is connected to areas like sustainable engineering, sustainable manufacturing, social policy, and more Contains theory, applications, and real-world problems along with their solutions Details waste recovery systems Industrial Environmental Management: Engineering, Science, and Policy is an ideal textbook for junior and senior level students in multidisciplinary engineering fields such as chemical, civil, environmental, and petroleum engineering. It will appeal to practicing engineers seeking information about sustainable design principles and methodology.

Environmentally Friendly Technologies for the Pulp and Paper Industry - Raymond A. Young 1997-11-19

Solving the pulp and paper industries' environmental problems is essential to maintaining the forest industry and accommodating the changing economic needs of forest communities. This book explores the construction of new mills--operating on new technology that does not produce pollutants--which are vital to the pulp and paper industry.

Environmental Management in the Pulp and Paper Industry - United Nations Environment Programme 1996

This technical report examines the environmental issues facing the pulp & paper industry & shows how these issues can be addressed. It discusses the production process, the origins of pollution & other impacts on the industry. It also recommends procedures for reducing these impacts.

Water Pollution Management - Jivendra 1995

Study with reference to Orissa, India.

Industrial Environmental Control - Allan M. Springer 1993

Industrial Environmental Control - Allan M. Springer 2000-01-01

Anaerobic Technology in Pulp and Paper Industry - Pratima Bajpai 2017-03-14

This book presents a state-of-the-art report on the treatment of pulp and paper industry effluents using anaerobic technology. It covers a comprehensive range of topics, including the basic reasons for anaerobic treatment, comparison between anaerobic and aerobic treatment, effluent types suitable for anaerobic treatment, design considerations for anaerobic treatment, anaerobic reactor configurations applied for treatment of pulp and paper industry effluents, present status of anaerobic treatment in pulp and paper industry, economic aspects, examples of full scale installations and future trends.

Environmental Pollutants and their Bioremediation Approaches - Ram Naresh Bharagava 2017-07-06

This book is a compilation of detailed and latest knowledge on the various types of environmental pollutants released from various natural as well as anthropogenic sources, their toxicological effects in environments, humans, animals and plants as well as various bioremediation approaches for their safe disposal into the environments. In this book, an extensive focus has been made on the various types of environmental pollutants discharged from various sources, their toxicological effects in environments, humans, animals and plants as well as their biodegradation and bioremediation approaches for environmental cleanup.

Management of Pulp and Paper Mill Waste - Pratima Bajpai 2014-11-07

Pulp and paper mill industries are always associated with the disposal problem of highly contaminated sludge or bio-solids. The development of innovative systems to maximize recovery of useful materials and/or energy in a sustainable way has become necessary. The management of wastes, in particular of industrial waste, in an economically and environmentally acceptable manner is one of the most critical issues facing modern industry, mainly due to the increased difficulties in properly locating disposal works and complying with even more stringent environmental quality requirements imposed by legislation. This book presents a general Introduction on waste management in the pulp and paper industry and contains topics on the generation of waste in pulp and paper mills, waste composition, methods of sludge pre-treatment, processes and technologies for conversion of pulp and paper mill waste into valuable products, waste reduction techniques employed in the pulp and paper Industry worldwide and future trends.

Pulp and Paper Industry - Pratima Bajpai 2017-03-06

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being adopted by the pulp and paper industry to reduce water consumption and treatment techniques to treat wastewater to recover it for reuse. The book also examines the emerging technologies for treatment of effluents and presents examples of full-scale installations. Provides thorough and in-depth coverage of advanced treatment technologies which will benefit the industry personnel, pulp manufacturers, researchers and advanced students Presents new treatment strategies to improve water reuse and fulfill the legislation in force regarding wastewater discharge Presents viable solutions for pulp and paper manufacturers in terms of wastewater treatment Presents examples of full-scale installations to help motivate mill personnel to incorporate new technologies

New Source Review for Stationary Sources of Air Pollution - National Research Council 2006-10-30
The Clean Air Act established a pair of programs known as New Source Review (NSR) that regulate large stationary sources of air pollution, such as factories and electricity-generating facilities. Congress then asked the National Research Council to estimate the effects of NSR rule changes made in 2002 and 2003 in terms of the effects on emissions and human health, and changes in operating efficiency (including energy efficiency), pollution prevention, and pollution-control activities. New Source Review for Stationary Sources of Air Pollution provides insights into the potential effects of the rule changes on national emissions from the electric power industry. Although this book focuses on the 2002 and 2003 rules, its analytic framework applies to other possible changes in NSR and to other regulatory contexts. Helpful, in that it outlines the data-collection efforts needed to assess the impact of the NSR rules, the book recommends EPA and other government agencies undertake and sustain the recommended methods.

Biological Wastewater Treatment and Resource Recovery - Robina Farooq 2017-03-29

Biological treatment of wastewater is a low-cost solution for remediation of wastewater. This book focuses on the bioremediation of wastewater, its management, monitoring, role of biofilms on wastewater treatment and energy recovery. It emphasizes on organic, inorganic and micropollutants entering into the environment after conventional wastewater treatment facilities of industrial, agricultural and domestic wastewaters. The occurrence of persistent pollutants poses deleterious effects on human and environmental health. Simple solution for recovery of energy as well as water during biological treatment of wastewater is a viable option. This book provides necessary knowledge and experimental studies on emerging bioremediation processes for reducing water, air and soil pollution.

Technologies for Reducing Dioxin in the Manufacture of Bleached Wood Pulp - 1989