

Pulp And Paper Industry Microbiological Issues In Papermaking

Chemistry for Green Environment Pulp and Paper Manufacture Bibliography, 1951-1955 Environmental Pollutants and their Bioremediation Approaches Microbiology of Pulp and Paper Pulp and Paper Manufacture Canadian Pulp and Paper Industry Water Technology in the Pulp and Paper Industry Southern Pulp and Paper Manufacturer Microbiology of Composting Biotechnology in the Pulp and Paper Industry Industrial Microbiology Advances in Applied Microbiology Microbial Diversity Pulp and Paper Industry Environmental Microbiology Monograph on Microbiology of Papermaking Systems Southern Pulp and Paper Journal Water Resources Thesaurus Microbial Technology Handbook of Biocide and Preservative Use Combined Application of Physico-Chemical & Microbiological Processes for Industrial Effluent Treatment Plant Industrial Biocides Lignocellulose Biotechnology Biotechnology of Microbial Enzymes Microbes Environmentally Friendly Technologies for the Pulp and Paper Industry Pulp and Paper Industry Nordic Pulp & Paper Research Journal Yearbook - Technical Association of the Pulp and Paper Industry Pulp and Paper Industry Pulp and Paper Industry TAPPI Monograph Series Technical Association of the Pulp and Paper Industry Pulp and Paper Industry 7th International Conference on Biotechnology in the Pulp and Paper Industry: poster presentations Biermann's

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Handbook of Pulp and Paper
Slime Control in the Pulp and Paper Industry
Green Pulp and Paper Industry
Pulp and Paper Manufacture
New and Future Developments in Microbial Biotechnology and Bioengineering

Chemistry for Green Environment

Pulp and Paper Manufacture Bibliography, 1951-1955

Biermann's Handbook of Pulp and Paper: Raw Material and Pulp Making, Third Edition is a comprehensive reference for industry and academia covering the entire gamut of pulping technology. This book provides a thorough introduction to the entire technology of pulp manufacture; features chapters covering all aspects of pulping from wood handling at the mill site through pulping and bleaching and pulp drying. It also includes a discussion on bleaching chemicals, recovery of pulping spent liquors and regeneration of chemicals used and the manufacture of side products. The secondary fiber recovery and utilization and current advances like organosolv pulping and attempts to close the cycle in bleaching plants are also included. Hundreds of illustrations, charts, and tables help the reader grasp the concepts being presented. This book will provide professionals in the field with the most up-to-date and comprehensive information on the state-of-the-art techniques

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and aspects involved in pulp making. It has been updated, revised and extended. Alongside the traditional aspects of pulping and papermaking processes, this book also focuses on biotechnological methods, which is the distinguishing feature of this book. It includes wood-based products and chemicals, production of dissolving pulp, hexenuronic acid removal, alternative chemical recovery processes, forest products biorefinery. The most significant changes in the areas of raw material preparation and handling, pulping and recycled fiber have been included. A total of 11 new chapters have been added. This handbook is essential reading for all chemists and engineers in the paper and pulp industry. Provides comprehensive coverage on all aspects of pulp making Covers the latest science and technology in pulp making Includes traditional and biotechnological methods, a unique feature of this book Presents the environmental impact of pulp and papermaking industries Sets itself apart as a valuable reference that every pulp and papermaker/engineer/chemist will find extremely useful

Environmental Pollutants and their Bioremediation Approaches

The agricultural and forestry processing wastes (lignocellulosics) are an important material resource and energy source. However, if untreated they can pose a danger to the environment and potentially valuable resources. Microorganisms contribute significantly to the problem of biomass degradation, its recycling and conservation. In the recent years, an increasing interest shown by the textile, food,

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feed & pulp and paper industries in the microbial and enzymatic processes has triggered in-depth studies of lignocellulolytic microorganisms and their enzymes. Moreover, the advent of recombinant DNA technology in the late 1970s further paved the way for developing technologies based on lignocellulolytic microbes and enzymes. Lignocellulose Biotechnology presents a comprehensive review of the research directed towards potential and environment friendly agricultural and forest byproducts. The book comprises 22 chapters, divided in four sections. It deals with a wide range of topics including biodiversity of lignocellulose degrading microorganisms and their enzymes, molecular biology of biodegradation of lignin, characterization of lignocellulolytic enzymes, bioconversion of plant biomass to produce enzymes, animal feed, bioethanol and industrial applications of lignocellulolytic enzymes. The chapters dealing with industrial applications also address current biotechnological approaches in lignocellulose bioconversion to value added products. This book is essential reading for students, researchers, scientists and engineers working in the areas of environmental microbiology, environmental biotechnology, life sciences, waste management and biomaterials.

Microbiology of Pulp and Paper

Pulp and Paper Manufacture

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Chemistry for Green Environment provides an overview of the current status of Chemistry for implementation of clean, ecofriendly, less improvident manufacturing processes as well as introducing a new-emerging green face of multi-dimensional Chemistry which highlights the need, principle, evolution, strategies and bioethical concerns for sustainable development of environment. It addresses important topics such as Information Processing, Information Building, Bioinformatics, Green Computation, Ecofriendly Technologies for Clean World, Green Processes: Emerging Trends, Combinatorial effects of synthetic and natural pesticides, Plant Based Products-Green Perspectives, Standardization approach for herbal products and Recent trends in drug development through Ethno botany.

Canadian Pulp and Paper Industry

Understanding the relationship between a microorganism and its environment is essential to the successful manipulation of industrial, biochemical, and medical processes. In Environmental Microbiology: Methods and Protocols, highly practiced experimentalists who often have perfected the methods they write about describe readily reproducible techniques for determining most of the important factors governing microorganisms and their habitats. Presented in step-by-step detail, these cutting-edge methods range from those for the study of marine organisms, to those for investigating microorganisms occurring in groundwater, to the biodiversity found in remote environments. The protocols for studying fermented

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milks are significant for investigators concerned with milk as an item of food for infants, small children, and even adults. Additional methods for the recovery and determination of nucleic acids and other compounds affecting, and affected by, microorganisms, are provided for certain enzymes produced by plant pathogens and for obtaining microbial species tolerant of such inhibitors as heavy metals. Review articles discuss the endophytic bacterium *Bacillus mojavensis*, the engineering of bacteria to enhance their ability to carry out bioremediation of aromatic compounds, and the use of chemical shift reagents and Na-NMR to study sodium gradients in microorganisms. The protocols follow the successful Methods in Molecular Biology™ series format, each one offering step-by-step laboratory instructions, an introduction outlining the principle behind the technique, lists of equipment and reagents, and tips on troubleshooting and avoiding known pitfalls. State-of-the-art and highly practical, *Environmental Microbiology: Methods and Protocols* offers microbiological researchers a powerful set of techniques for investigating and understanding microorganisms in their native environments.

Water Technology in the Pulp and Paper Industry

Southern Pulp and Paper Manufacturer

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This book covers both basic and applied sciences in a rather specified area of pulp and paper manufacture. The basic science of lignocellulose enzymology and plant genetics is covered also in many other contexts, whereas the application of biotechnology in process and product development is thoroughly reviewed. All the latest advances as well as new ideas of the research field are covered. This book will serve as an updated and compact information package of biotechnical aspects and the most recent advances of the pulp and paper industry sector.

Microbiology of Composting

Biotechnology in the Pulp and Paper Industry

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.

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Industrial Microbiology

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.

Advances in Applied Microbiology

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.

Microbial Diversity

New and Future Developments in Microbial Biotechnology and Bioengineering: Microbial Cellulase System Properties and Applications covers the biochemistry of

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cellulase system, its mechanisms of action, and its industrial applications. Research has shed new light on the mechanisms of microbial cellulase production and has led to the development of technologies for production and applications of cellulose degrading enzymes. The biological aspects of processing of cellulosic biomass have become the crux of future research involving cellulases and cellulolytic microorganisms, as they are being commercially produced by several industries globally and are widely being used in food, animal feed, fermentation, agriculture, pulp and paper, and textile applications. The book discusses modern biotechnology tools, especially in the area of microbial genetics, novel enzymes, and new enzyme and the applications in various industries. As a professional reference, this new book is useful to all researchers working with microbial cellulase system, both academic institutions and industry-based research bodies, as well as to teachers, graduate, and postgraduate students with information on continuous developments in microbial cellulase system. The book provides an indispensable reference source for chemists, biochemical engineers/bioengineers, biochemists, biotechnologists and researchers who want to know about the unique properties of this microbe and explore its future applications. Compiles the latest developments made and currently undergoing in the area of microbial cellulase system Chapters are contributed from top researchers on this area around the globe Includes information related to almost all areas of microbial cellulase system Extensive cover of current industrial applications and discusses potential future applications

Pulp and Paper Industry

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

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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

Environmental Microbiology

Monograph on Microbiology of Papermaking Systems

My professional interest in antimicrobial agents and contamination control goes back 50 years to my tour as a microbiologist in a field hospital in Europe during World War II. With no experience and relying solely on a military handbook, I prepared thermometer trays with jars of blue bichloride of mercury and pink isopropyl alcohol. A preliminary typhoid diagnosis of one of our cooks resulted in the need for lab testing. His stool specimen and its subsequent disposal was my problem. My handbook said bum it. So burn it I did, in a five-gallon can with gasoline. Flames shot up almost six feet, and my next mistake was to extinguish them with carbon tetrachloride. This resulted in the production of lethal phosgene gas. The hospital had a near disaster. I could say that at that moment I vowed to write a how-to book so that such stupidities could be avoided. Nevertheless, when I was offered the opportunity to edit this book I thought back on the need for a real,

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practical treatment of my subject. This book, then, is a practical handbook for technical service personnel and scientists who are not necessarily specialists in microbiology. It provides information on suitable antimicrobial agents appropriate to their particular problem-solving needs and information on the microbial groups contributing to the specific problem, their ecologies, and strategies for controlling their access to the area or material of interest.

Southern Pulp and Paper Journal

Numerous applications for biocides have been found in fields as diverse as ethical pharmaceuticals and cat litter products. The aim of this book is two-fold: to provide a comprehensive guide to the use of biocides across a range of applications; and to aid in the selection of a biocide that is "fit for purpose". It covers a cross-section of traditional measures, novel ideas and innovative developments, as well as addressing the biocides market, the political outlook and future trends of biocide use. With contributions by acknowledged experts in the field, Industrial Biocides is a unique title that will be welcomed by many in industry, including industrial and water chemists, microbiologists, and plant and environment managers.

Water Resources Thesaurus

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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

Microbial Technology

Handbook of Biocide and Preservative Use

Combined Application of Physico-Chemical & Microbiological Processes for Industrial Effluent Treatment Plant

Industrial Biocides

Lignocellulose Biotechnology

Advances in Applied Microbiology offers intensive reviews of the latest techniques and discoveries in this rapidly moving field. The editors are recognized experts and the format is comprehensive and instructive.

Biotechnology of Microbial Enzymes

Microbes

Environmentally Friendly Technologies for the Pulp and Paper

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Industry

Microbes: Health and Environment highlights the interrelatedness of microbes with life and environment. It stresses that microbes have a beneficial impact on human life and environment. It covers the various aspects of microbes such as molecular biology, interrelationships, microbial intervention in our environment, microbial biotechnology, genetics, their immunology, biochemistry, economic importance, interaction with medicinal plants, human beings, industrial relevance, influence on our health and so on. It is an asset for enterprising students, teachers and scientists. Ashok K Chauhan is the Founder President of the Ritnand Balved Education Foundation, the umbrella body of 35 Amity schools and institutions of higher education, in addition to India's first private university Amity University, Uttar Pradesh. He pursued his higher studies in Chemical Engineering and Plastic Technology from Germany. Ajit K Varma is Vice President, Amity Science and Technology Foundation and Director, Amity Institute of Herbal and Microbial Studies, Amity University. Formerly, he was professor of Microbial Technology at the School of Life Sciences, Jawaharlal Nehru University, New Delhi. He is also Fellow of Alexander von Humboldt, Germany.

Pulp and Paper Industry

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Biotechnology of Microbial Enzymes: Production, Biocatalysis and Industrial Applications provides a complete survey of the latest innovations on microbial enzymes, highlighting biotechnological advances in their production and purification along with information on successful applications as biocatalysts in several chemical and industrial processes under mild and green conditions. Applications of microbial enzymes in food, feed, and pharmaceutical industries are given particular emphasis. The application of recombinant DNA technology within industrial fermentation and the production of enzymes over the last 20 years have produced a host of useful chemical and biochemical substances. The power of these technologies results in novel transformations, better enzymes, a wide variety of applications, and the unprecedented development of biocatalysts through the ongoing integration of molecular biology methodology, all of which is covered insightfully and in-depth within the book. Features research on microbial enzymes from basic science through application in multiple industry sectors for a comprehensive approach Includes information on metabolic pathway engineering, metagenomic screening, microbial genomes, extremophiles, rational design, directed evolution, and more Provides a holistic approach to the research of microbial enzymes

Nordic Pulp & Paper Research Journal

In recent decades, scientific insight into the chemistry of water has increased

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enormously, leading to the development of advanced wastewater and water purification technologies. However, the quality of freshwater resources has continually deteriorated worldwide, both in industrialized and developing countries. Although traditional wastewater technologies focus on the removal of suspended solids, nutrients and bacteria, hundreds of organic pollutants occur in wastewater and urban surface waters. These new pollutants are synthetic or naturally occurring chemicals that are not often monitored in the environment but have the potential to enter the environment and cause known or suspected adverse ecological and / or human health effects. Collectively referred to as the "emerging contaminants," they are mostly derived from domestic use and occur in trace concentrations ranging from pico to micrograms per liter. Environmental contaminants are resistant to conventional wastewater treatment processes and most of them remain unaffected, leading to the contamination of the receiving water. As such, there is a need for advanced wastewater treatment process that is capable of removing environmental contaminants to ensure safe fresh water supplies. This book explains the biological and chemical wastewater treatment technologies. The biological wastewater treatment processes presented include: (1) bioremediation of wastewater such as aerobic and anaerobic treatment; (2) phytoremediation of wastewater using engineered wetlands, rhizofiltration, rhizodegradation, phytodegradation, phytoaccumulation, phytotransformation and hyperaccumulators; and (3) mycoremediation of wastewater. The chemical wastewater treatment processes discussed include chemical precipitation, ion

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exchange, neutralization, adsorption and disinfection. In addition, the book describes wastewater treatment plants in terms of plant size, layout and design as well as installation location. Also presenting the latest, innovative effluent water treatment processes, it is a valuable resource for biochemical and wastewater treatment engineers, environmental scientists and environmental microbiologists.

Yearbook - Technical Association of the Pulp and Paper Industry

Pulp and Paper Industry

Diversity perspectives are discussed in the context of ecosystem dynamics, taking into consideration environments that are rather unique to microorganisms. Considerable thrust is placed on the role that microorganisms play in sustainable production systems. Microbe-plant interaction arena is highlighted through the discussion of mycorrhizal partners, on which depends not only the plant community structure but also abatement of abiotic and biotic stresses. Other mutualist, rhizobia gets its due coverage whereas plant disease component carries examples from both, fungal and viral disease point of view. Considerable emphasis is placed on a discussion of the environmental issues such as the approaches that

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will lead to newer bioremediation technologies. No discussion of microbial diversity is complete without their implications in animal and human health. Discussed in this context are L-arginases in cancer therapy as also bioactives from cyanobacteria. Genomics and pathogenicity of two groups of viruses, viz., blue tongue and flaviviruses is highlighted whereas keratinophilic fungal forms are discussed in the context of dermatophytic infections. This volume also carries a fair number of articles on commercial microbiology.

Pulp and Paper Industry

TAPPI Monograph Series

Technical Association of the Pulp and Paper Industry

Composting is increasingly used as a recycling technology for organic wastes. Knowledge on the composition and activities of compost microbial communities has so far been based on traditional methods. New molecular and physiological tools now offer new insights into the "black box" of decaying material. An unforeseen diversity of microorganisms are involved in composting, opening up an

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enormous potential for future process and product improvements. In this book, the views of scientists, engineers and end-users on compost production, process optimisation, standardisation and product application are presented.

Pulp and Paper Industry

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

7th International Conference on Biotechnology in the Pulp and Paper Industry: poster presentations

Biermann's Handbook of Pulp and Paper

Pulp and Paper Industry: Chemical Recovery examines the scientific and technical advances that have been made in chemical recovery, including the very latest developments. It looks at general aspects of the chemical recovery process and its significance, black liquor evaporation, black liquor combustion, white liquor preparation, and lime reburning. The book also describes the technologies for chemical recovery of nonwood black liquor, as well as direct alkali regeneration systems in small pulp mills. In addition, it includes a discussion of alternative chemical recovery processes, i.e. alternative causticization and gasification processes, and the progress being made in the recovery of filler, coating color, and pigments. Furthermore, it discusses the utilization of new value streams (fuels and chemicals) from residuals and spent pulping liquor, including related environmental challenges. Offers thorough and in-depth coverage of scientific and technical advances in chemical recovery in pulp making Discusses alternative chemical recovery processes, i.e., alternative causticization and gasification processes Covers the progress being made in the recovery of filler, coating color,

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and pigments Examines utilization of new value streams (fuels and chemicals) from residuals and spent pulping liquor Discusses environmental challenges (air emissions, mill closure) Presents ways in which the economics, energy efficiency, and environmental protection associated with the recovery process can be improved

Slime Control in the Pulp and Paper Industry

Green Pulp and Paper Industry

Pulp and Paper Manufacture

New and Future Developments in Microbial Biotechnology and Bioengineering

Pulp and Paper Industry: Nanotechnology in Forest Industry covers the latest scientific and technical advances in the area of nanotechnology in forest sector providing information on recent developments, structure and properties, raw

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materials and methods for the production of nanocellulose along with their characterization and application in various industries with an analysis of both challenges and opportunities with respect to environmentally sound technologies and consumer concerns such as health effects. Also identifies the key barriers to innovation, and the breakthroughs required to make nanocellulosic materials viable alternatives in the important sectors. Thorough review of the evolution and development of different types of nanocelluloses In-depth coverage of preparation and characterization of nanocellulose Use of nanocellulose materials in a wide range of applications Commercial and precommercial developments Challenges and opportunities of nanocellulose market Identifies the key barriers to innovation, and the breakthroughs required to make nanocellulosic materials viable alternatives in the important sectors

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