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## KEY=ENGINEERING - GUADALUPE AVA

## Advanced Industrial Wastewater Treatment and Reclamation of Water

## Comparative Study of Water Pollution Index during Pre-industrial, Industrial Period and Prospect of Wastewater Treatment for Water Resource Conservation

Springer Nature

## MANAGEMENT OF SALINE & WASTE WATER IN AGRICULTURE

Scientific Publishers *The current book compiles and puts together information on extent and distribution of poor quality waters in various states of India, their characteristics highlighting the problems likely to be encountered and principles and practices of using poor quality waters in agriculture. Special emphasis has been placed on the use of domestic and industrial wastewaters.*

## Irrigation and Water Resources Engineering

New Age International *The Book Irrigation And Water Resources Engineering Deals With The Fundamental And General Aspects Of Irrigation And Water Resources Engineering And Includes Recent Developments In Hydraulic Engineering Related To Irrigation And Water Resources Engineering. Significant Inclusions In The Book Are A Chapter On Management (Including Operation, Maintenance, And Evaluation) Of Canal Irrigation In India, Detailed Environmental Aspects For Water Resource Projects, A Note On Interlinking Of Rivers In India, And Design Problems Of Hydraulic Structures Such As Guide Bunds, Settling Basins Etc.The First Chapter Of The Book Introduces Irrigation And Deals With The Need, Development And Environmental Aspects Of Irrigation In India. The Second Chapter On Hydrology Deals With Different Aspects Of Surface Water Resource. Soil-Water Relationships Have Been Dealt With In Chapter 3. Aspects Related To Ground Water Resource Have Been Discussed In Chapter 4. Canal Irrigation And Its Management Aspects Form The Subject Matter Of Chapters 5 And 6. Behaviour Of Alluvial Channels And Design Of Stable Channels Have Been Included In Chapters 7 And 8, Respectively. Concepts Of Surface And Subsurface Flows, As Applicable To Hydraulic Structures, Have Been Introduced In Chapter 9. Different Types Of Canal Structures Have Been Discussed In Chapters 10, 11, And 13. Chapter 12 Has Been Devoted To Rivers And River Training Methods. After Introducing Planning Aspects Of Water Resource Projects In Chapter 14, Embankment Dams, Gravity Dams And Spillways Have Been Dealt With, Respectively, In Chapters 15, 16 And 17.The Students Would Find Solved Examples (Including Design Problems) In The Text, And Unsolved Exercises And The List Of References Given At The End Of Each Chapter Useful.*

## Sustainable Development Through Engineering Innovations

## Select Proceedings of SDEI 2020

Springer Nature *This book comprises select peer-reviewed papers presented at the International Conference on Sustainable Development through Engineering Innovations (SDEI) 2020. It presents recent advances, new directions, and opportunities for sustainable and resilient approaches to design and protect the built-environment through engineering innovations & interventions. The topics covered are highly diverse and include all civil engineering and construction-related aspects such as construction and environmental Issues, durability and survivability under extreme conditions, design of new materials for sustainability, eco-efficient and ultra-high performance cementitious materials, embedded structural and foundation systems and environmental geomechanics. The book will be of potential interest to the researchers and students in the fields of civil engineering, architecture and sustainable development.*

## Development in Wastewater Treatment Research and Processes

## Removal of Emerging Contaminants from Wastewater through Bio-nanotechnology

Elsevier *Removal of Emerging Contaminants from Wastewater through Bio-nanotechnology showcases profiles of the nonregulated contaminants termed as “emerging contaminants, which comprise industrial and household persistent toxic chemicals, pharmaceuticals and personal care products (PPCPs), pesticides, surfactants and surfactant residues, plasticizers and industrial additives, manufactured nanomaterials and nanoparticles, microplastics, etc. that are used extensively in everyday life. The occurrence of “emerging contaminants in wastewater, and their behavior during wastewater treatment and production of drinking water are key issues in the reuse and recycling of water resources. This book focuses on the exploitation of Nano-biotechnology inclusive of the state-of-the-art remediate strategies to degrade/detoxify/stabilize toxic and hazardous contaminants and restore contaminated sites, which is not as comprehensively discussed in the existing titles on similar topics available in the global market. In addition, it discusses the potential environmental and health hazards and ecotoxicity associated with the widespread distribution of emerging contaminants in the water bodies. It also considers the life cycle assessment (LCA) of emerging (micro)-pollutants with suitable case studies from various industrial sources. Provides natural and ecofriendly solutions to deal with the problem of pollution Details underlying mechanisms of nanotechnology-associated microbes for the removal of emerging contaminants Describes numerous successful field studies on the application of bio-nanotechnology for eco-restoration of contaminated sites Presents recent advances and challenges in bio-nanotechnology research and applications for sustainable development Provides authoritative contributions on the diverse aspects of bio-nanotechnology by world’s leading experts*

## Omics for Environmental Engineering and Microbiology Systems

CRC Press *Bioremediation using microbes is a sustainable technology for biodegradation of target compounds, and an omics approach gives more clarity on these microbial communities. This book provides insights into the complex behavior of microbial communities and identifies enzymes/metabolites and their degradation pathways. It describes the application of microbes and their derivatives for the bioremediation of potentially toxic and novel compounds. It highlights the existing technologies along with industrial practices and real-life case studies. Features: Includes recent research and development in the areas of omics and microbial bioremediation. Covers the broad environmental pollution control approaches such as metagenomics, metabolomics, fluxomics, bioremediation, and biodegradation of industrial wastes. Reviews metagenomics and waste management, and recycling for environmental cleanup. Describes the metagenomic methodologies and best practices, from sample collection to data analysis for taxonomies. Explores various microbial degradation pathways and detoxification mechanisms for organic and inorganic contaminants of wastewater with their gene expression. This book is aimed at graduate students and researchers in environmental engineering, soil remediation, hazardous waste management, environmental modeling, and wastewater treatment.*

## Proceedings of the 1st International Conference on Sustainable Waste Management through Design

## IC_SWMD 2018

Springer *This book describes the latest advances, innovations and applications in the field of waste management and environmental geomechanics as presented by leading researchers, engineers and practitioners at the International Conference on Sustainable Waste Management through Design (IC_SWMD), held in Ludhiana (Punjab), India on November 2-3, 2018. Providing a unique overview of new directions, and opportunities for sustainable and resilient design approaches to protect infrastructure and the environment, it discusses diverse topics related to civil engineering and construction aspects of the resource management cycle, from the minimization of waste, through the eco-friendly re-use and processing of waste materials, the management and disposal of residual wastes, to water treatments and technologies. It also encompasses strategies for reducing construction waste through better design, improved recovery, re-use, more efficient resource management and the performance of materials recovered from wastes. The contributions were selected by means of a rigorous peer-review process and highlight many exciting ideas that will spur novel research directions and foster multidisciplinary collaboration among different waste management specialists.*

# Clean Energy and Resource Recovery

# Wastewater Treatment Plants as Biorefineries, Volume 2

Elsevier *Clean Energy and Resource Recovery: Wastewater Treatment Plants as Bio-refineries, Volume 2, summarizes the fundamentals of various treatment modes applied to the recovery of energy and value-added products from wastewater treatment plants. The book addresses the production of biofuel, heat, and electricity, chemicals, feed, and other products from municipal wastewater, industrial wastewater, and sludge. It intends to provide the readers an account of up-to-date information on the recovery of biofuels and other value-added products using conventional and advanced technological developments. The book starts with identifying the key problems of the sectors and then provides solutions to them with step-by-step guidance on the implementation of processes and procedures. Titles compiled in this book further explore related issues like the safe disposal of leftovers, from a local to global scale. Finally, the book sheds light on how wastewater treatment facilities reduce stress on energy systems, decrease air and water pollution, build resiliency, and drive local economic activity. As a compliment to Volume 1: Biomass Waste Based Biorefineries, Clean Energy and Resource Recovery, Volume 2: Wastewater Treatment Plants as Bio-refineries is a comprehensive reference on all aspects of energy and resource recovery from wastewater. The book is going to be a handy reference tool for energy researchers, environmental scientists, and civil, chemical, and municipal engineers interested in waste-to-energy. Offers a comprehensive overview of the fundamental treatments and methods used in the recovery of energy and value-added products from wastewater. Identifies solutions to key problems related to wastewater to energy/resource recovery through conventional and advanced technologies and explore the alternatives. Provides step-by-step guidance on procedures and calculations from practical field data. Includes successful case studies from both developing and developed countries.*

# Sustainable Water Treatment

# Innovative Technologies

CRC Press *This book focuses on green and innovative wastewater treatment technologies that promote sustainability. It discusses a variety of biological, physical, and chemical treatment technologies. It covers biological processes for recovery of value-added products from wastewater and gives an overview of enzymatic hydrolysis and bioremediation of wastewater using immobilized enzyme and fungus. It offers a case study and future trends of wastewater treatment through membrane bioreactor technologies, describes advanced chemical–physical processes for recalcitrant pollutant, and emphasizes the use of low-cost materials and cost-effective treatment methods.*

# Wastewater Characteristics, Treatment and Disposal

IWA Publishing *Wastewater Characteristics, Treatment and Disposal is the first volume in the series Biological Wastewater Treatment, presenting an integrated view of water quality and wastewater treatment. The book covers the following topics: wastewater characteristics (flow and major constituents) impact of wastewater discharges to rivers and lakes overview of wastewater treatment systems complementary items in planning studies. This book, with its clear and practical approach, lays the foundations for the topics that are analysed in more detail in the other books of the series. About the series: The series is based on a highly acclaimed set of best selling textbooks. This international version is comprised by six textbooks giving a state-of-the-art presentation of the science and technology of biological wastewater treatment. Other titles in the series are: Volume 2: Basic Principles of Wastewater Treatment; Volume 3: Waste Stabilisation Ponds; Volume 4: Anaerobic Reactors; Volume 5: Activated Sludge and Aerobic Biofilm Reactors; Volume 6: Sludge Treatment and Disposal*

# Waste Production and Utilization in the Metal Extraction Industry

CRC Press *Increasingly stringent environmental regulations and industry adoption of waste minimization guidelines have thus, stimulated the need for the development of recycling and reuse options for metal related waste. This book, therefore, gives an overview of the waste generation, recycle and reuse along the mining, beneficiation, extraction, manufacturing and post-consumer value chain. This book reviews current status and future trends in the recycling and reuse of mineral and metal waste and also details the policy and legislation regarding the waste management, health and environmental impacts in the mining, beneficiation, metal extraction and manufacturing processes. This book is a useful reference for engineers and researchers in industry, policymakers and legislators in governance, and academics on the current status and future trends in the recycling and reuse of mineral and metal waste. Some of the key features of the book are as follows: Holistic approach to waste generation, recycling and reuse along the minerals and metals extraction. Detailed overview of metallurgical waste generation. Practical examples with complete flow sheets, techniques and interventions on waste management. Integrates the technical issues related to efficient resources utilization with the policy and regulatory framework. Novel approach to addressing future commodity shortages.*

# The Directory of Scientific Research Institutions in India

# Water Quality Management

# Select Proceedings of ICWEES-2016

Springer *This book comprises two parts. The first part deals with some aspects of wastewater treatment, encompassing various types of technologies for treating wastewater and evaluation. The technologies, biochemical as well as chemical, including evaluation of technologies are also discussed. Part 2 is on solid waste management. It includes both municipal and industrial waste management. The book is of interest to researchers and practitioners in the field of water resources, hydrology, environmental resources, agricultural engineering, watershed management, earth sciences, as well as those engaged in natural resources planning and management. Graduate students and those wishing to conduct further research in water and environment and their development and management find the book to be of value.*

# Waste Biorefinery

# Potential and Perspectives

Elsevier *Waste Biorefinery: Potential and Perspectives offers data-based information on the most cutting-edge processes for the utilisation of biogenic waste to produce biofuels, energy products, and biochemicals – a critical aspect of biorefinery. The book explores recent developments in biochemical and thermo-chemical methods of conversion and the potential generated by different kinds of biomass in more decentralized biorefineries. Additionally, the book discusses the move from 200 years of raw fossil materials to renewable resources and how this shift is accompanied by fundamental changes in industrial manufacturing technologies (from chemistry to biochemistry) and in logistics and manufacturing concepts (from petrochemical refineries to biorefineries). Waste Biorefinery: Potential and Perspectives designs concepts that enable modern biorefineries to utilize all types of biogenic wastes, and to integrate processes that convert byproduct streams to high-value products, achieving higher cost benefits. This book is an essential resource for researchers and students studying biomass, biorefineries, and biofuels/products/processes, as well as chemists, biochemical/chemical engineers, microbiologists, and biotechnologists working in industries and government agencies. Details the most advanced and innovative methods for biomass conversion Covers biochemical and thermo-chemical processes as well as product development Discusses the integration of technologies to produce bio-fuels, energy products, and biochemicals Illustrates specific applications in numerous case studies for reference and teaching purposes*

# Green Innovation, Sustainable Development, and Circular Economy

CRC Press *Although green innovation and technology is not new, so far very limited information is available regarding the diversified approaches for green technologies and engineering. This book highlights the challenges and opportunities, offering a roadmap for using various approaches in the most cost effective way. The book discusses the interrelationship between a circular economy and green technologies. It presents the dimensions of green innovations and illustrates the challenges of industrialization, especially in terms of material synthesis and utilized processes. It covers the current environmental and health challenges of societies and describes the role of stakeholders in developing sustainable societies and industries. This book provides a line of approach to core and interdisciplinary students, academicians, research scientists, and various industry personnel to present their ideas of green innovations with a common vision of sustainable development of community and industries in mind. Features Discusses the interrelationship between a circular economy and green technologies Presents the dimensions of green innovations Illustrates the challenges of industrialization, especially in terms of material synthesis and utilized processes Covers the current environmental and health challenges of societies Offers the identification and role of stakeholders in the sustainable development of societies and industries*

# Recent Trends in Wastewater Treatment

Springer Nature *This volume discusses contemporary techniques, technologies, and solutions for industrial wastewater remediation and treatment. It covers biological, chemical, and physical aspects of wastewater treatment, with a background on the generation of wastewater associated with different industries, as well as a comparison of traditional treatment technologies with new advancements. The authors also describe the reuse and recovery of nutrients and precious metals from wastewater, and how such sustainable strategies can be incorporated into industrial wastewater planning and legislation. The book also contains practical and theoretical aspects of various industries and their wastewater management practices in a changing climate, with an emphasis on recent research examining the environmental impact of wastewater. The work will be of interest to students, teachers, and researchers studying wastewater pollution and remediation, wastewater management-based NGOs, and people involved in the planning and legislation of industrial operations.*

# Graphene Science Handbook, Six-Volume Set

CRC Press *Graphene is the strongest material ever studied and can be an efficient substitute for silicon. This six-volume handbook focuses on fabrication methods, nanostructure and atomic arrangement, electrical and optical properties, mechanical and chemical properties, size-dependent properties, and applications and industrialization. There is no other major reference work of this scope on the topic of graphene, which is one of the most researched materials of the twenty-first century. The set includes contributions from top researchers in the field and a foreword written by two Nobel laureates in physics. Volumes in the set: K20503 Graphene Science Handbook: Mechanical and Chemical Properties (ISBN: 9781466591233) K20505 Graphene Science Handbook: Fabrication Methods (ISBN: 9781466591271) K20507 Graphene Science Handbook: Electrical and Optical Properties (ISBN: 9781466591318) K20508 Graphene Science Handbook: Applications and Industrialization (ISBN: 9781466591332) K20509 Graphene Science Handbook: Size-Dependent Properties (ISBN: 9781466591356) K20510 Graphene Science Handbook: Nanostructure and Atomic Arrangement (ISBN: 9781466591370)*

# Nanobiotechnology in Bioformulations

Springer *With the recent shift of chemical fertilizers and pesticides to organic agriculture, the employment of microbes that perform significant beneficial functions for plants has been highlighted. This book presents timely discussion and coverage on the use of microbial formulations, which range from powdered or charcoal-based to solution and secondary metabolite-based bioformulations. Bioformulation development of biofertilizers and biopesticides coupled with the advantages of nanobiotechnology propose significant applications in the agricultural section including nanobiosensors, nanoherbicides, and smart transport systems for the regulated release of agrochemical. Moreover, the formulation of secondary metabolites against individual phytopathogens could be used irrespective of geographical positions with higher disease incidences. The prospective advantages and uses of nanobiotechnology generate tremendous interest, as it could augment production of agricultural produce while being cost-effective both energetically and economically. This bioformulation approach is incomparable to existing technology, as the bioformulation would explicitly target the particular pathogen without harming the natural microbiome of the ecosystem. Nanobiotechnology in Bioformulations covers the constraints associated with large-scale development and commercialization of bioinoculant formations. Furthermore, exclusive emphasis is be placed on next-generation efficient bioinoculants having secondary metabolite formulations with longer shelf life and advanced competence against several phytopathogens. Valuable chapters deal with bioformulation strategies that use divergent groups of the microbiome and include detailed diagrammatic and pictorial representation. This book will be highly beneficial for both experts and novices in the fields of microbial bioformulation, nanotechnology, and nano-microbiotechnology. It discusses the prevailing status and applications available for microbial researchers and scientists, agronomists, students, environmentalists, agriculturists, and agribusiness professionals, as well as to anyone devoted to sustaining the ecosystem.*

# Nanozymes for Environmental Engineering

Springer Nature *This book reviews the latest developments and applications of nanozymes in environmental science. Protection of the environment is essential because pollution has become a global problem with many adverse effects on life and ecosystems. For that, remediation strategies and techniques have been designed, yet they are limited. Here, the recent development of nanotechnology opens a new vista for environmental remediation. In particular, nanomaterials displaying enzyme-like activities, named 'nanozymes', appear very promising for environmental monitoring, contaminant detection, microbial management, and degradation of organic pollutants. Nanomaterials including metallic, metal oxides and carbon-based nanoparticles with nanozymes activities have been synthesized. These nanozymes have similar activities as natural peroxidase, oxidase, superoxide dismutase and catalase enzymes. Nanozymes have several advantages, yet they suffer from several limitations such as low catalytic efficiency, less substrate selectivity, biocompatibility, and lack of engineering of the active sites.*

# New and Future Developments in Microbial Biotechnology and Bioengineering

# Microbial Biomolecules: Properties, Relevance, and Their Translational Applications

Elsevier *New and Future Developments in Microbial Biotechnology and Bioengineering: Microbial Biomolecules: Properties, Relevance and Their Translational Applications presents a concise review on microbial biotechnology, along with impacts and recent results from research centers, small companies and large enterprises. The book brings the most relevant information on how we can use resources—in this case from microorganisms—and technology to develop solutions in fields like biofuels, food, cosmetics and medicine. It covers case studies of start-ups in the field and explains how scientists have moved their ideas into profitable bio-based products that are necessary for our current living standards. In addition, the book describes strategic governmental programs designed to exploit biomass in a sustainable way, along with detailed information on research in several high-impact, worldwide laboratories. It gives concrete examples of ongoing research from molecules to methods, such as L-asparaginase, extremophiles, new diagnostics tools and the analytical methods that have raised the quality of the data obtained, thereby boosting the so-called bioeconomy. Comprises a unique source of information on the various applications of microbial biomolecules Provides resourceful material for new ideas and strong rational/application-oriented stories Discusses biotech companies in various areas (biofuel, food, medicine, etc.) who are actively using microbial biomolecules Outlines scientific discoveries and their translation into profitable products Gives an insight perspective of institutional and governmental strategic research programs aiming to preserve, explore and generate benefits from microbial biomolecules*

# Inorganic Pollutants in Wastewater

# Methods of Analysis, Removal and Treatment

Materials Research Forum LLC *This book, 'Inorganic Pollutants in Wastewater: Methods of Analysis, Removal and Treatment' extensively investigates the most recent improvements in the area of inorganic pollutants analysis, removal and treatment of wastewater by utilizing different materials such as natural polymers, husks, graphene and carbon nanotube composites, fruit cortex etc. It covers photocatalysis, adsorption, desalination and electrochemical technologies used for the analysis and treatment of inorganic pollutants. Waste Water Treatment, Inorganic Pollutants, Natural Polymers, Husks, Graphene and Carbon Nanotube Composites, Fruit Cortex, Photocatalysis, Adsorption, Desalination, Electrochemical Technologies*

# Energy Research Abstracts

*Semiannual, with semiannual and annual indexes. References to all scientific and technical literature coming from DOE, its laboratories, energy centers, and contractors. Includes all works deriving from DOE, other related government-sponsored information, and foreign nonnuclear information. Arranged under 39 categories, e.g., Biomedical sciences, basic studies; Biomedical sciences, applied studies; Health and safety; and Fusion energy. Entry gives bibliographical information and abstract. Corporate, author, subject, report number indexes.*

# Handbook of Research on Green Synthesis and Applications of Nanomaterials

IGI Global *Nanomaterials can be synthesized by physical, chemical, and biological methods; however, the latter technique is preferred as it is eco-friendly, non-toxic, and cost-effective. The green synthesized nanomaterials have been found to be more efficient with potential applications in diverse fields. It is crucial to explore green synthesized nanomaterials and the applications that can be made in order to support water remediation, pharmaceuticals, food processing, construction, and more. The Handbook of Research on Green Synthesis and Applications of Nanomaterials provides a multidisciplinary approach to the awareness of using non-toxic, eco-friendly, and economical green techniques for the synthesis of various nanomaterials, as well as their applications across a variety of fields. Covering topics such as antimicrobial applications, environmental remediation, and green synthesis, this book acts as a thorough reference for engineers, nanotechnology professionals, academicians, students, scientists, and researchers pursuing research in the nanotechnology field.*

# Handbook of Metal-Microbe Interactions and Bioremediation

CRC Press *Around the World, metal pollution is a major problem. Conventional practices of toxic metal removal can be ineffective and/or expensive, delaying and exacerbating the crisis. Those communities dealing with contamination must be aware of the fundamentals advances of microbe-mediated metal removal practices because these methods can be easily used and require less remedial intervention. This book describes innovations and efficient applications for metal bioremediation for environments polluted by metal contaminates.*

# Permafrost: North American Contribution [to The] Second International Conference

National Academies

# Microbial Biotechnology

# Role in Ecological Sustainability and Research

John Wiley & Sons *A holistic approach covering a wide range of environmental microbial applications along with current and future trends In Microbial Biotechnology: Role in Ecological Sustainability and Research, a team of distinguished researchers delivers an authoritative overview of the role of microbial biotechnology in the pursuit of environmental and ecological sustainability. The book provides readers with compelling presentations of microbial technology, including its applications in the removal of environmental pollutants, and sustainable agriculture using microbial biocontrol agents or bio-fertilizers. Readers will also be able to explore the microbial reduction of greenhouse gases and a wide range of other cutting-edge applications, including the removal of various toxic environmental contaminants, such as antibiotics, pesticides, dyes, and heavy metals. Microbial Biotechnology provides: A thorough introduction to microorganisms, their metabolic engineering, the human microbiome, and other foundational topics An in-depth exploration of environmental management, including bioremediation through a nexus approach A fulsome treatment of current trends in microbial biotechnology*

*and its role in sustainable production Perfect for professionals in applied microbiology, biotechnology, environmental engineering, green chemistry, and soil science, Microbial Biotechnology: Role in Ecological Sustainability and Research will also earn a place in the libraries of research scholars, scientists, and academicians with an interest in environmental microbiology and ecology.*

# Innovative Materials and Methods for Water Treatment

# Solutions for Arsenic and Chromium Removal

CRC Press *Due to increasing demand for potable and irrigation water, water suppliers have to use alternative resources. They either have to regenerate wastewater or deal with contaminated surface water. This book brings together the experiences of various experts in preparing of innovative materials that are selective for arsenic and chromium removal, and in*

# Nanomaterials for Water Remediation

Walter de Gruyter GmbH & Co KG *The capability to generate potable water from polluted sources is growing in importance as pharmaceuticals, microplastics and waste permeate our soil. Nanotechnology allows for improvements in water remediation technologies by taking advantage of the unique properties of materials at this small scale.*

# Management of Hazardous Wastes

BoD – Books on Demand *Rapid trend of industry and high technological progress are the main sources of the accumulation of hazardous wastes. Recently, nuclear applications have been rapidly developed, and several nuclear power plants have been started to work throughout the world. The potential impact of released hazardous contaminants into the environment has received growing attention due to its serious problems to the biological systems. The book Management of Hazardous Wastes contains eight chapters covering two main topics of hazardous waste management and microbial bioremediation. This book will be useful to many scientists, researchers, and students in the scope of development in waste management program including sources of hazardous waste, government policies on waste generation, and treatment with particular emphasis on bioremediation technology.*

# Biological Synthesis of Nanoparticles and Their Applications

CRC Press *Biological Synthesis of Nanoparticles and Their Applications gives insight into the synthesis of nanoparticles utilizing the natural routes. It demonstrates various strategies for the synthesis of nanoparticles utilizing plants, microscopic organisms like bacteria, fungi, algae and so forth. It orchestrates interdisciplinary hypothesis, ideas, definitions, models and discoveries associated with complex cell of the prokaryotes and eukaryotes. Highlights: Discusses biological approach towards the nanoparticle synthesis Describes the role of nanotechnology in the field of medicine and its medical devices Covers application and usage of the chemicals at the molecular level to act as catalysts and binding products for both organic and inorganic Chemical Reactions Reviews application in physics such as solar cells, photovoltaics and other usage Microorganisms can aggregate and detoxify substantial metals because of different reductase enzymes, which can diminish metal salts to metal nanoparticles. The readers after going through this book will have detailed account of mechanism of bio-synthesis of nanoparticles.*

# Biomethane through Resource Circularity

# Research, Technology and Practices

CRC Press *Biomethane through resource circularity: Research, Technology and Practices is an invaluable resource for researchers, policy makers, implementers and PhD and Marsters level students in universities analyzing the present status, waste biomass including agro wastes, success in experimentation & commercial production, future needs and other relevant areas. While huge biomass is wasted by open burning, there is potential of energy generation that can be extracted from the biomass preventing GHG emission and creating business opportunities. Abundance and renewable bioenergy can contribute to a more secure, sustainable, and economically sound future through biomethanation process by selecting followings: Supply chain sustainability of clean energy sources Appropriate Anaerobic Digestion technology with different feedstock Processes Parameter Optimization and best fit conditions, Productivity, Purification of biogas and end use Economic feasibility as business case, Commercialization, generating employment and Revitalizing rural economies This book addresses most of the above issues in lucid manner by experts in the field from different countries which are helpful for the related stakeholders edited by experts in the field.*

# Soils of Malaysia

CRC Press *There are approximately 500 different soil varieties in Malaysia, most is residual soil and coastal alluvial soil. This book presents a comprehensive overview of various aspects of soils in Malaysia. It covers topics including climate; flora and fauna; geology and hydrology; land use changes for agriculture; soil fertility; human-induced soil degradation; and soil contamination sources. It features information on the role of biological, chemical, mechanical, and physical factors in relation to soil properties. The book highlights land use impact, soil problems arising from contamination and its control methods, the management of problem soils, limiting materials as well as future soil issues. The presentation of different soils in Malaysia is organized through chapters based on two major soil groups (a) the sedentary soils formed in the interior on a wide range of rock types, and (b) the soils of the coastal alluvial plains. The book features information on how these various soil types affect the economy of the country and highlights the soil issues and challenges within the context of sustainable agriculture. Useful to graduate students of soil science, professionals, and agriculturalists, it provides extensive knowledge of agriculture soils in Malaysia in a concise and user-friendly manner.*

# Waste-to-Energy Approaches Towards Zero Waste

# Interdisciplinary Methods of Controlling Waste

Elsevier *Waste-to-Energy Approaches Towards Zero Waste: Interdisciplinary Methods of Controlling Waste provides a comprehensive overview of the key technologies and approaches to achieve zero waste from energy. The book emphasizes the importance of an integrated approach to waste-to-energy using fundamental concepts and principles, and presents key methods, their applications, and perspectives on future development. The book provides readers with the tools to make key decisions on waste-to-energy projects from zero-waste principles, while incorporating sustainability and life cycle assessments from financial and environmental perspectives. Waste-to-Energy Approaches Towards Zero Waste: Interdisciplinary Methods of Controlling Waste offers practical guidance on achieving energy with zero waste ideal for researchers and graduate students involved in waste-to-energy and renewable energy, waste remediation, and sustainability. Provides an integrated approach for waste-to-energy using zero waste concepts Offers decision-making guidance on selecting the most appropriate approach for each project Presents the sustainability and life cycle assessment of WTE technologies on financial and environmental grounds*

# Selected Water Resources Abstracts

# Reviews of Environmental Contamination and Toxicology Volume 240

Springer *Reviews of Environmental Contamination and Toxicology attempts to provide concise, critical reviews of timely advances, philosophy and significant areas of accomplished or needed endeavor in the total field of xenobiotics, in any segment of the environment, as well as toxicological implications.*

# Food Bioconversion

Academic Press *Food Bioconversion, Volume Two in the Handbook of Food Bioengineering series is an interdisciplinary resource of fundamental information on waste recovery and biomaterials under certain environmental conditions. The book provides information on how living organisms can be used to transform waste into compounds that can be used in food, and how specialized living cells in plants, animals and water can convert the most polluting agents into useful non-toxic products in a sustainable way. This great reference on the bioconversion of industrial waste is ideal in a time when food resources are limited and entire communities starve. Presents extraction techniques of biological properties to enhance food's functionality, i.e. functional foods or nutraceuticals Provides detailed information on waste material recovery issues Compares different techniques to help advance research and develop new applications Includes research solutions of different biological treatments to produce foods with antibiotic properties, i.e. probiotics Explores how bioconversion technologies are essential for research outcomes to increase high quality food production*

# Transactions of the American Society of Civil Engineers

*Vols. 29-30 contain papers of the International Engineering Congress, Chicago, 1893; v. 54, pts. A-F, papers of the International Engineering Congress, St. Louis, 1904.*

# Valorization of Agri-Food Wastes and By-Products

# Recent Trends, Innovations and Sustainability Challenges

Academic Press *Valorization of Agri-Food Wastes and By-Products: Recent Trends, Innovations and Sustainability Challenges addresses the waste and by-product valorization of fruits and vegetables, beverages, nuts and seeds, dairy and seafood. The book focuses its coverage on bioactive recovery, health benefits, biofuel production and environment issues, as well as recent technological developments surrounding state of the art of food waste management and innovation. The book also presents tools for value chain analysis and explores future sustainability challenges. In addition, the book offers theoretical and experimental information used to investigate different aspects of the valorization of agri-food wastes and by-products. Valorization of Agri-Food Wastes and By-Products: Recent Trends, Innovations and Sustainability Challenges will be a great resource for food researchers, including those working in food loss or waste, agricultural processing, and engineering, food scientists, technologists, agricultural engineers, and students and professionals working on sustainable food production and effective management of food loss, wastes and by-products. Covers recent trends, innovations, and sustainability challenges related to food wastes and by-products valorization Explores various recovery processes, the functionality of targeted bioactive compounds, and green processing technologies Presents emerging technologies for the valorization of agri-food wastes and by-products Highlights potential industrial applications of food wastes and by-products to support circular economy concepts*

# Civil Engineering Hydraulics Abstracts

# Encyclopedia of Renewable and Sustainable Materials

Elsevier *Encyclopedia of Renewable and Sustainable Materials provides a comprehensive overview, covering research and development on all aspects of renewable, recyclable and sustainable materials. The use of renewable and sustainable materials in building construction, the automotive sector, energy, textiles and others can create markets for agricultural products and additional revenue streams for farmers, as well as significantly reduce carbon dioxide (CO2) emissions, manufacturing energy requirements, manufacturing costs and waste. This book provides researchers, students and professionals in materials science and engineering with tactics and information as they face increasingly complex challenges around the development, selection and use of construction and manufacturing materials. Covers a broad range of topics not available elsewhere in one resource Arranged thematically for ease of navigation Discusses key features on processing, use, application and the environmental benefits of renewable and sustainable materials Contains a special focus on sustainability that will lead to the reduction of carbon emissions and enhance protection of the natural environment with regard to sustainable materials*