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Biomass for Sustainable Applications Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations for 2015 Current Developments in Biotechnology and Bioengineering Drying, Roasting, and Calcining of Minerals Electronic Waste Recent advances in Applied Microbiology Ni-Co 2021: The 5th International Symposium on Nickel and Cobalt Sustainable Heavy Metal Remediation 6th International Symposium on High-Temperature Metallurgical Processing Phytoremediation Advances in Environmental Pollution Management: Wastewater Impacts and Treatment Technologies Recent Progress in Desalination, Environmental and Marine Outfall Systems Sustainable Metal Extraction from Waste Streams Handbook of Clean Energy Systems, 6 Volume Set Sustainable Infrastructure: Breakthroughs in Research and Practice Water Safety, Security and Sustainability Environmental Microbial Biotechnology Microbial Rejuvenation of Polluted Environment Porous Carbons - Hyperbranched Polymers - Polymer Solvation Financial Accounting and Reporting Biotechnological Approaches in Waste Management Advanced Treatment Techniques for Industrial Wastewater Green Adsorbents to Remove Metals, Dyes and Boron from Polluted Water Advanced Nanomaterials for Water Engineering, Treatment, and Hydraulics Environmental Microbiology and Biotechnology Development of Unconventional Reservoirs Extremophilic Fungi Bio-Nanoparticles Metal Recovery from Electronic Waste: Biological Versus Chemical Leaching for Recovery of Copper and Gold Sporotrichosis Strategies and Tools for Pollutant Mitigation Lloyd's Register of Shipping 1915 Steamers Sustainable Energy and Transportation Handbook of Petroleum Geoscience Spatially Resolved Operando Measurements in Heterogeneous Catalytic Reactors Energy Technology 2018 Coal Bed Methane Bioprospecting Algae for Nanosized Materials Bioremediation: Challenges and Advancements Principles of Accounting Volume 1 - Financial Accounting

Phytoremediation Jan 23 2022 This text details the plant-assisted remediation method, "phytoremediation", which involves the interaction of plant roots and associated rhizospheric microorganisms for the remediation of soil contaminated with high levels of metals, pesticides, solvents, radionuclides, explosives, crude oil, organic compounds and various other contaminants. Each chapter highlights and compares the beneficial and economical alternatives of phytoremediation to currently practiced soil removal and burial practices. This book covers state of the art approaches in Phytoremediation written by leading and eminent scientists from around the globe. Phytoremediation: Management of Environmental Contaminants, Volume 1 supplies its readers with a multidisciplinary understanding in the principal and practical approaches of phytoremediation from laboratory research to field application.

Bio-Nanoparticles Jul 05 2020 Nanoparticles are the building blocks for nanotechnology; they are better built, long lasting, cleaner, safer, and smarter products for use across industries, including communications, medicine, transportation, agriculture and other industries. Controlled size, shape, composition, crystallinity, and structure-dependent properties govern the unique properties of nanotechnology. Bio-Nanoparticles: Biosynthesis and Sustainable Biotechnological Implications explores both the basics of and advancements in nanoparticle biosynthesis. The text introduces the reader to a variety of microorganisms able to synthesize nanoparticles, provides an overview of the methodologies applied to biosynthesize nanoparticles for medical and commercial use, and gives an overview of regulations governing their use. Authored by leaders in the field, Bio-Nanoparticles: Biosynthesis and Sustainable Biotechnological Implications bridges the gap between biology and technology, and is an invaluable resource for students and researchers alike.

Sustainable Metal Extraction from Waste Streams Oct 20 2021 Provides a comprehensive overview on developing sustainable practices for waste minimization via green metal extraction from waste streams This book introduces readers to sustainable management and defines the challenges as well as the opportunities in waste stream management. It starts by covering conventional technologies for metal extraction then focuses on emerging tools and techniques such as green adsorption, bioleaching, and chelation. It also discusses the scale-up and process intensification of metal extraction from waste streams from process design to pilot plan. Sustainable Metal Extraction from Waste Streams begins by covering sustainability-related constructs and illustrates the pre-requisites for sustainable management of waste streams. It then introduces the basics of solid waste handling, ranging from an analysis of the relevance, categories of wastes, consequences of untreated waste disposal into the environment, government initiatives, management strategies, and unit operations for pre-treatment of wastes. The book also looks at widely accepted, conventional metal extraction technologies like hydro and pyro metallurgical methods; discusses the possibility of sustainable green processes for metal extraction; and introduces the recently deployed coiled flow inverter process. -Provides a comprehensive collection of the conventional, emerging, and future technologies for metal extraction from industrial waste and electrical & electronic equipment in a sustainable way -Demonstrates trans-disciplinary research as an executable direction to achieve the sustainable governance of natural resources and solid waste management -Presents a dedicated section on scale-up and process intensification of metallurgical processes -Summarizes various aspects of novel processes ranging from basic concepts, benchmark performance of technologies on lab scale, and recent research trends in metal extraction Covering a variety of interdisciplinary topics on resource optimization and waste minimization, Sustainable Metal Extraction from Waste Streams is an excellent resource for engineers, science students, entrepreneurs, and organizations who are working in the field of waste management and wish to gain information on upcoming sustainable processes.

Sustainable Infrastructure: Breakthroughs in Research and Practice Aug 18 2021 The continued growth of any nation depends largely on the development of their built infrastructures and communities. By creating stable infrastructures, countries can more easily thrive in competitive international markets. Sustainable Infrastructure: Breakthroughs in Research and Practice examines sustainable development through the lens of transportation, waste management, land use planning, and governance. Highlighting a range of topics such as sustainable development, transportation planning, and regional and urban infrastructure planning, this publication is an ideal reference source for engineers, planners, government officials, developers, policymakers, legislators, researchers, academicians, and graduate-level students seeking current research on the latest trends in sustainable infrastructure.

Coal Bed Methane Sep 26 2019 Coal Bed Methane: Theories and Applications, Second Edition, captures the full lifecycle of a coal bed methane well and offers petroleum geologists and engineers a single source for a broad range of coal bed methane (CBM) applications. The vast coal resources in the United States continue to produce tremendous amounts of natural gas, contributing to a diverse range of energy assets. This book addresses crucial technical topics, including exploration and evaluation of coal bed reservoirs, hydraulic fracturing of CBM wells, coal seam degasification, and production engineering and processing, among others. The book also covers legal issues and permitting, along with an economic analysis of CBM projects. This new edition includes information on new and established research and applications, making it relevant for field geologists and engineers, as well as students. Edited by a team of coal bed methane experts from industry, academia and government with more than 100 years of combined experience in the field Contains more than 150 figures, photographs and illustrations to aid in the understanding of fundamental concepts Presents the full scope of improvements in U.S. energy independence, coal mine safety and greenhouse gas emissions

Sustainable Heavy Metal Remediation Mar 25 2022 This book presents an assortment of case-studies pertaining to the use of sustainable technologies for heavy metal removal and recovery from mining and metallurgical wastes, construction and demolition wastes, spent catalysts and electronic wastes. Wastewaters from diverse industrial and mining activities have caused pollution problems, but these sectors also serve as a hotspot for metal recovery. Several metal removal technologies based on physical, chemical and biological processes have been successfully implemented in full-scale operation, while metal recovery, which is beneficial for economic and environmental reasons, is still limited due to challenges arising from downstream processing. For instance, microbial recovery (bioleaching) of metals from their ores is an established technology with a number of full-scale applications. Bioleaching of electronic wastes to recover metals is also a highly promising technology with low environmental impact and high cost-effectiveness; yet, this technology is still at its infancy. As the individual chapters of this book focuses on the applications and limitations of different technologies, this book will serve as an excellent resource for chemical engineers, environmental engineers, mining engineers, biotechnologists, graduate students and researchers in these areas.

Water Safety, Security and Sustainability Jul 17 2021 This book focuses on threats, especially contaminants, to drinking water and the supply system, especially in municipalities but also in industrial and even residential settings. The safety, security, and suitability landscape can be described as dynamic and complex stemming from necessity and hence culpability due to the emerging threats and risks, vis-a-vis globalization resulting in new forms of contaminants being used due to new technologies. The book provides knowledge and guidance for engineers, scientists, designers, researchers, and students who are involved in water, sustainability, and study of security issues. This book starts out with basics of water usage, current statistics, and an overview ofwater resources. The book then introduces different scenarios of safety and security and areas that researchers need to focus. Following that, the book presents different types of contaminants - inadvertent, intentional, or incidental. The next section presents different methodologies of contamination sensing/detection and remediation strategies as per guidance and standards set globally. The book then concludes with selected chapters on water management, including critical infrastructure that is critical to maintaining safe water supplies to cities and municipalities. Each chapter includes descriptive information for professionals in their respective fields. The breadth of chapters offers insights into how science (physical, natural, and social) and technology can support new developments to manage the complexity resident within the evolving threat and risk landscape.

Current Developments in Biotechnology and Bioengineering Aug 30 2022 Current Developments in Biotechnology and Bioengineering: Solid Waste Management provides extensive coverage of new developments, state-of-the-art technologies, and potential future trends, reviewing the latest innovative developments in environmental biotechnology and bioengineering as they pertain to solid wastes, also revealing current research priority areas in solid waste treatment and management. The fate of solid wastes can be divided into three major areas, recycling, energy recovery, and safe disposal. From this foundation, the book covers such key areas as biotechnological production of value added products from solid waste, bioenergy production from various organic solid wastes, and biotechnological solutions for safe, environmentally-friendly treatment and disposal. The state of the art situation, potential advantages, and limitations are discussed, along with proposed strategies on how to overcome limitations. Reviews available bioprocesses for the production of bioproducts from solid waste Outlines processes for the production of energy from solid waste using biochemical conversion processes Lists various environmentally friendly treatments of solid waste and its safe disposal

Ni-Co 2021: The 5th International Symposium on Nickel and Cobalt Apr 25 2022 In this volume, operators, engineers, and researchers present information about all aspects of current processing technologies for nickel and cobalt, as well as emerging technologies for both metals. Contributions from industry and academia encompass metallurgical aspects of metals commonly associated with nickel and cobalt, such as copper and platinum group metals (PGMs). Specific focus areas of the collection include, but are not limited to mineral processing, metallurgy of nickel and cobalt ores, battery materials, recycling, recovery of associated byproducts and PGMs, and sulfide and laterite processing.

Handbook of Clean Energy Systems, 6 Volume Set Sep 18 2021 The Handbook of Clean Energy Systems brings together an international team of experts to present a comprehensive overview of the latest research, developments and practical applications throughout all areas of clean energy systems. Consolidating information which is currently scattered across a wide variety of literature sources, the handbook covers a broad range of topics in this interdisciplinary research field including both fossil and renewable energy systems. The development of intelligent energy systems for efficient energy processes and mitigation technologies for the reduction of environmental pollutants is explored in depth, and environmental, social and economic impacts are also addressed. Topics covered include: Volume 1 - Renewable Energy: Biomass resources and biofuel production; Bioenergy Utilization; Solar Energy; Wind Energy; Geothermal Energy; Tidal Energy. Volume 2 - Clean Energy Conversion Technologies: Steam/Vapor Power Generation; Gas Turbines Power Generation; Reciprocating Engines; Fuel Cells; Cogeneration and Polygeneration. Volume 3 - Mitigation Technologies: Carbon Capture; Negative Emissions System; Carbon Transportation; Carbon Storage; Emission Mitigation Technologies; Efficiency Improvements and Waste Management; Waste to Energy. Volume 4 - Intelligent Energy Systems: Future Electricity Markets; Diagnostic and Control of Energy Systems; New Electric Transmission Systems; Smart Grid and Modern Electrical Systems; Energy Efficiency of Municipal Energy Systems; Energy Efficiency of Industrial Energy Systems; Consumer Behaviors; Load Control and Management; Electric Car and Hybrid Car; Energy Efficiency Improvement. Volume 5 - Energy Storage: Thermal Energy Storage; Chemical Storage; Mechanical Storage; Electrochemical Storage; Integrated Storage Systems. Volume 6 - Sustainability of Energy Systems: Sustainability Indicators, Evaluation Criteria, and Reporting; Regulation and Policy; Finance and Investment; Emission Trading; Modeling and Analysis of Energy Systems; Energy vs. Development; Low Carbon Economy; Energy Efficiencies and Emission Reduction. Key features: Comprising over 3,500 pages in 6 volumes, HCES presents a comprehensive overview of the latest research, developments and practical applications throughout all areas of clean energy systems, consolidating a wealth of information which is currently scattered across a wide variety of

literature sources. In addition to renewable energy systems, HCES also covers processes for the efficient and clean conversion of traditional fuels such as coal, oil and gas, energy storage systems, mitigation technologies for the reduction of environmental pollutants, and the development of intelligent energy systems. Environmental, social and economic impacts of energy systems are also addressed in depth. Published in full colour throughout. Fully indexed with cross referencing within and between all six volumes. Edited by leading researchers from academia and industry who are internationally renowned and active in their respective fields. Published in print and online. The online version is a single publication (i.e. no updates), available for one-time purchase or through annual subscription.

Extremophilic Fungi Aug 06 2020 This contributory volume is a comprehensive account of recent research on extremophilic fungi. It brings to the readers, latest information on all categories of extremophilic fungi, their isolation, culture, and potential applications. The book aims at providing the audience in-depth and updated theoretical concepts, also application on the field. It will serve as a supplementary reading material in addition to basic mycology textbooks. The book fills the gap in literature and will be useful to the postgraduate students and researchers in the field of mycology, agriculture, biotechnology and Microbiology.

Energy Technology 2018 Oct 27 2019 This collection focuses on energy efficient technologies including innovative ore beneficiation, smelting technologies, recycling and waste heat recovery. The volume also covers various technological aspects of sustainable energy ecosystems, processes that improve energy efficiency, reduce thermal emissions, and reduce carbon dioxide and other greenhouse emissions. Papers addressing renewable energy resources for metals and materials production, waste heat recovery and other industrial energy efficient technologies, new concepts or devices for energy generation and conversion, energy efficiency improvement in process engineering, sustainability and life cycle assessment of energy systems, as well as the thermodynamics and modeling for sustainable metallurgical processes are included. This volume also includes topics on CO2 sequestration and reduction in greenhouse gas emissions from process engineering, sustainable technologies in extractive metallurgy, as well as the materials processing and manufacturing industries with reduced energy consumption and CO2 emission. Contributions from all areas of non-nuclear and non-traditional energy sources, such as solar, wind, and biomass are also included in this volume.Papers from the following symposia are presented in the book:Energy Technologies and CO2 ManagementAdvanced Materials for Energy Conversion and Storage Deriving Value from Challenging Waste Streams: Recycling and Sustainability Joint SessionSolar Cell SiliconStored Renewable Energy in Coal

Strategies and Tools for Pollutant Mitigation Apr 01 2020 This volume explores recent research trends and achievements in environmental pollution remediation (e.g. water, air, soil), and compiles critical and constructive papers and reviews with a focus on advances in bioremediation and green technology solutions for waste minimization, waste management and pollution control. The book is timely, as the need for researchers and engineers to develop sustainable and green eco-friendly remediation technologies is increasing with a growing global population, stressed agricultural systems, and an environment impacted by climate change. A key focus of the book is on the efficient use of agricultural waste residues as viable substrates for creating materials for environmental clean-up, and the possible conversion of these pollutants to sustainable bioresources. The volume will be of interest to sustainability researchers, environmental engineers, industry managers and agricultural scientists.

Advanced Treatment Techniques for Industrial Wastewater Jan 11 2021 A heavy backlog of gaseous, liquid, and solid pollution has resulted from a lack of development in pollution control. Because of this, a need for a collection of original research in water and wastewater treatment, industrial waste management, and soil and ground water pollution exists. Advanced Treatment Techniques for Industrial Wastewater is an innovative collection of research that covers the different aspects of environmental engineering in water and wastewater treatment processes as well as the different techniques and systems for pollution management. Highlighting a range of topics such as agriculture pollution, hazardous waste management, and sewage farming, this book is an important reference for environmental engineers, waste authorities, solid waste management companies, landfill operators, legislators, environmentalists, and academicians seeking research on waste management.

Lloyd's Register of Shipping 1915 Steamers Mar 01 2020 The Lloyd's Register of Shipping records the details of merchant vessels over 100 gross tonnes, which are self-propelled and sea-going, regardless of classification. Before the time, only those vessels classed by Lloyd's Register were listed. Vessels are listed alphabetically by their current name.

Sporotrichosis May 03 2020 The book presents current affairs of Sporotrichosis as emergent disease with emphasis on the potential factors associated with genetic polymorphisms in Sporothrix complex. Constitutive and inducible factors play an essential role in the response of the fungal cell to the environment as determinant in the immunopathogenicity, highlighting clinical forms of Sporotrichosis and host immunocompetence. Also, a current issue interest in zoonotic transmission showing that a cat is the animal species most affected by Sporothrix species and their importance in the involvement in the human transmission. Readers can associate parameters of experimental immune response to disease development as well as the diagnostic, prophylaxis, and therapies that can be applied in the near future.

Electronic Waste Jun 27 2022 This book presents an overview of the characterization of electronic waste. In addition, processing techniques for the recovery of metals, polymers and ceramics are described. This book serves as a source of information and as an educational technical reference for practicing scientists and engineers, as well as for students.

Recent advances in Applied Microbiology May 27 2022 This book is a one-stop reference resource, presenting recent research in various emerging areas of microbiology, including microbial biotechnology, microbes in health, microbial interactions, agricultural microbiology and computational approaches. Recent discoveries in microbiology have created a great deal of interest among researchers around the globe, and as as such the book discusses a number of important research topics, such as microbial enzymes and nanoparticles, bacterial polyhydroxyalkanoates, biosurfactant aided bioprocessing, autophagy and microbial pathogenesis, multidrug resistant bacteria, probiotics, rhizosphere, metal tolerant bacteria, plant- beneficial environmental bacteria and therapeutic applications of fungal chondroitinase. It serves as a valuble resource for masters, doctoral and postdoctoral researchers in life sciences, as well as scientists involved in various interdisciplinary research areas. It also provides useful material for higher-level graduate courses in microbiology and biotechnology.

Sustainable Energy and Transportation Jan 29 2020 This book presents an integrated approach to sustainably fulfilling energy requirements, considering various energy-usage sectors and applicable technologies in those sectors. It discusses smart cities, focusing on the design of urban transport systems and sources of energy for mobility. It also shares thoughts on individual consumption for ensuring the sustainability of energy resources and technologies for emission reductions for both mobility and stationary applications. For the latter, it examines case studies related to energy consumption in the manufacturing sector as well as domestic energy requirements. In addition it explores various distribution and policy aspects related to the power sector and sources of energy such as coal and biomass. This book will serve as a valuable resource for researchers, practitioners, and policymakers alike.

Handbook of Petroleum Geoscience Dec 30 2019 HANDBOOK OF PETROLEUM GEOSCIENCE This reference brings together the latest industrial updates and research advances in regional tectonics and geomechanics. Each chapter is based upon an in-depth case study from a particular region, highlighting core concepts and themes as well as regional variations. Key topics discussed in the book are: Drilling solutions from the Kutch offshore basin Geophysical studies from a gas field in Bangladesh Exploring Himalayan terrain in India Tectonics and exploration of the Persian Gulf basin Unconventional gas reservoirs in the Bohemian Massif This book is an invaluable industry resource for professionals and academics working in and studying the fields of petroleum geoscience and tectonics.

Metal Recovery from Electronic Waste: Biological Versus Chemical Leaching for Recovery of Copper and Gold Jun 03 2020 Waste electrical and electronic equipment (WEEE) generation is a global problem. Despite the growing awareness and deterring legislation, most of the WEEE is disposed improperly, i.e. landfilled or otherwise shipped overseas, and treated in sub-standard conditions. Informal recycling of WEEE has catastrophic effects on humans and the environment. WEEE contains considerable quantities of valuable metals such as base metals, precious metals and rare earth elements (REE). Metal recovery from WEEE is conventionally carried out by pyrometallurgical and hydrometallurgical methods. In this PhD research, novel metal recovery technologies from WEEE are investigated. Using acidophilic and cyanide-generating bacteria, copper and gold were removed from crushed electronic waste with removal efficiencies of 98.4 and 44.0%, respectively. The leached metals in solution were recovered using sulfidic precipitation and electrowinning separation techniques. Finally, a techno-economic assessment of the technology was studied. This research addresses the knowledge gap on two metal extraction approaches, namely chemical and biological, from a secondary source of metals. The essential parameters of the selective metal recovery processes, scale-up potential, techno-economic and sustainability assessment have been studied.

Environmental Microbial Biotechnology Jun 15 2021 This book provides a timely review of strategies for coping with polluted ecosystems by employing bacteria, fungi and algae. It presents the vast variety of microbial technologies currently applied in the bioremediation of a variety of anthropogenic toxic chemicals, mining and industrial wastes and other pollutants. Topics covered include: microbe-mineral interactions, biosensors in environmental monitoring, iron-mineral transformation, microbial biosurfactants, bioconversion of cotton gin waste to bioethanol, anaerobe bioleaching and sulfide oxidation. Further chapters discuss the effects of pollution on microbial diversity, as well as the role of microbes in the bioremediation of abandoned mining areas, industrial and horticultural wastes, wastewater and sites polluted with hydrocarbons, heavy metals, manganese and uranium.

Bioremediation: Challenges and Advancements Jul 25 2019 Waste management is one of the major challenges for environmental and public health organizations for maintaining safety standards in any area. Population growth and urbanization increase the difficulty in maintaining a sustainable waste management system. Bioremediation refers to the use of living organisms in processes designed to remove toxic chemicals present in waste material. Bioremediation represents a sustainable way to remove a range of environmental pollutants. Bioremediation: Challenges and Advancements covers the subject of bioremediation in eight chapters that focus on a broad range of waste sources, their adverse impacts on the ecosystem, and the advanced strategies for their remediation. Each chapter also highlights the problems encountered in bioremediation processes. Key features: - Comprehensive coverage of bioremediation in 8 reader-friendly chapters - Highlights methods and challenges of bioremediation in one volume. - Introduces the reader to bioremediation - Explains recent biotechnological methods for removing heavy metals and xenobiotic compounds - Describes strategies including physical, chemical, and biological methods to mitigate radioactive waste from contaminated sites and water bodies - Details the use of microbial-aided remediation techniques for the management of biomedical and electronic wastes, and its impact on the ecosystem - Describes bioremediation technologies for decontamination of solid waste pollutants - Showcases the application of Omics approaches such as genomics, transcriptomics, proteomics, and metabolomics to improve bioremediation processes. - Covers bioremediation of agro-wastes - Includes detailed references This book is an informative reference for scholars (researchers, undergraduate and graduate students of environmental sciences, microbiology and biotechnology) professionals (environmental engineers) and researchers, giving each a good understanding of the significance of bioremediation in solid waste management and the restoration of contaminated sites.

Financial Accounting and Reporting Mar 13 2021 Financial Accounting and Reporting is the most up to date text on the market. Now fully updated in its fourteenth edition, it includes extensive coverage of International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS). This market-leading text offers students a clear, well-structured and comprehensive treatment of the subject. Supported by illustrations and exercises, the book provides a strong balance of theoretical and conceptual coverage. Students using this book will gain the knowledge and skills to help them apply current standards, and critically appraise the underlying concepts and financial reporting methods.

Drying, Roasting, and Calcining of Minerals Jul 29 2022 The papers in this volume give the reader focused information on the important extractive metallurgy unit operations of drying, roasting, and calcining

Spatially Resolved Operando Measurements in Heterogeneous Catalytic Reactors Nov 28 2019 Spatially Resolved Operando Measurements in Heterogeneous Catalytic Reactors, Volume 50, presents the latest on these essential components in the continuing search for better utilization of raw materials and energy that reduces impact on the environment. This latest release includes valuable chapters that present tactics on Understanding the performance of automotive catalysts via spatial resolution of reactions inside honeycomb monoliths, Operando spectroscopy in catalytic reactors, Spatio-temporal phenomena in monolithic reactors measured by combined spatially-resolved mass spectrometry and optical frequency domain reflectrometry, and In-situ spatially resolved techniques for the investigation of packed bed catalytic reactors: Current status and future outlook. This series presents the latest reviews of the state-of-the-art of in heterogeneous catalytic reactors and processes. Contains reviews by leading authorities in their respective areas Presents up-to-date reviews of the latest techniques in the modeling of catalytic processes Includes a broad mix of US and European authors, as well as academic, industrial and research institute perspectives Provides discussions on the connections between computation and experimental methods

Biotechnological Approaches in Waste Management Feb 09 2021 Waste generation from industrial and domestic sectors are imposing a very challenging environment and intervention of biotechnology offers a viable solution for their effective management. This book deals with the employment of biotechnological aspects for waste treatment including the basic concepts, biochemical processes and various technologies for pollutant reduction and production of value-added products for a cleaner environment. It covers different aspects of biotechnology in the conservation of environment dealing with the sustainable management of waste through the concept of waste-to-economy along with the management of environmental pollutants and natural resource conservation. Focusses on ecological approaches i.e., the use of biocatalysts and biotechnological approaches for waste management Explores the different biotechnology-based solution for the removal of environmental pollutants Covers

various microbiological routes, technological options for waste to energy, removal of contaminants and the production of value-added products Reviews the bioremediation potential of microbial strains and enzymes Explores the significant routes of biotechnological means of obtaining eco-friendly products substituting the hazardous chemical-based products This volume is aimed at researchers and professionals in environmental, biotechnology and chemical engineering.

6th International Symposium on High-Temperature Metallurgical Processing Feb 21 2022 The analysis, development, and/or operation of high temperature processes that involve the production of ferrous and nonferrous metals, alloys, and refractory and ceramic materials are covered in the book. The innovative methods for achieving impurity segregation and removal, by-product recovery, waste minimization, and/or energy efficiency are also involved. Eight themes are presented: 1: High Efficiency New Metallurgical Process and Technology 2: Fundamental Research of Metallurgical Process 3: Alloys and Materials Preparation 4: Direct Reduction and Smelting Reduction 5: Coking, New Energy and Environment 6: Utilization of Solid Slag/Wastes and Complex Ores 7: Characterization of High Temperature Metallurgical Process

Biomass for Sustainable Applications Nov 01 2022 Sustainable sources of energy and a supply of good quality water are two major challenges facing modern societies across the globe. Biomass from cultivated plants may be used to generate energy, but at the cost of contaminated surface waters from pesticide and fertiliser use. This two-volume set examines the potential use of biomass as both a source of sustainable energy and a resource to tackle contaminated soils and wastewaters. Consideration is given to non-food crops, bacteria ,and fungi as sources of biomass and the book enables the reader to identify the best local bioresources according to the desired application. With contributions from across the globe, this is an essential guide to meeting the demand for energy and pollution remediation by exploiting local and renewable resources. The example scenarios given will inspirational to policy makers and local officers, while chemical engineers and environmental scientists in both academia and industry will benefit from the comprehensive review of current thinking and application.

Bioprospecting Algae for Nanosized Materials Aug 25 2019 Algae are simple, primitive, heterogeneous, autotrophic, eukaryotic or prokaryotic organisms that lead a symbiotic, parasitic or free-living mode of life. Microalgae and macroalgae possess great potential in various fields of application. Microalgae are ubiquitous and extremely diverse microorganisms that can accumulate toxic contaminants and heavy metals from wastewater, making them a superior candidate to become a powerful nanofactory. Algae were discovered to reduce the presence of metal ions, and afterwards aid in the biosynthesis of nanoparticles. Since algae-mediated biogenic nanoparticles are eco-friendly, cost-effective, high-yielding, speedy and energy-efficient, a large number of studies have been published on them in the last few years. This book focuses on recent progress on the utilization of algae for the synthesis of nanoparticles, their characterization and the possible mechanisms involved. Bioprospecting Algae for Nanosized Materials describes the synthesis of algal nanomaterials and its application in various fields for sustainable development. This book outlines the procedures to prepare phyconanomaterials, techniques to utilize the nanomaterials, and applications in agriculture, environment and medicine.

Green Adsorbents to Remove Metals, Dyes and Boron from Polluted Water Dec 10 2020 This book reviews adsorption techniques to clean wastewater, with focus on pollution by dyes and heavy metals. Advanced adsorbents include carbon nanomaterials, biomass, cellulose, polymers, clay, composites and chelating materials.

Recent Progress in Desalination, Environmental and Marine Outfall Systems Nov 20 2021 This book collects current scientific information on advanced technologies and management practices associated with the desalination industry in the Middle East and elsewhere around the world. The book opens with introductory chapter which briefly recounts the history of desalination, and describes the current state of development in the field. Part I: Desalination Systems includes ten chapters which describe a variety of techniques and designs intended not only to minimize the impact of desalination, but also to save energy and use natural resources to maximize the output of integrated desalination systems. Among the highlights are a chapter on the use of ceramic membrane technology for sustainable oil water production; a case study on the use of solar heating systems in desalination technology in Oman; discussion of fouling and its effect on design and performance of desalination systems; a review of shore approaches and sea-lines with case studies from Australia and Germany; and a discussion of the integration of desalination technology with renewable energy for climate change abatement in the Middle East and North Africa region. Part II: Environmental Systems includes among others a chapter on regulating the use of water resources and desalination technology on a regional scale reducing the carbon footprint of desalination, with examples from Australia; a description of desalination for irrigation in the Souss Massa region in the south of Morocco; a study of the impact of the coastal intake environment on operating conditions of thermal desalination plants in the United Arab Emirates; a discussion of hydrodynamic and thermal dispersion modeling of the effluent in a coastal channel, with a case study from Oman; and a mathematical model study of effluent disposal from a desalination plant in the marine environment at Tuticorin in India. The book aims to inspire developments in desalination technologies which are specifically aimed at reducing energy consumption and cost, and minimizing environmental impact.

Advances in Environmental Pollution Management: Wastewater Impacts and Treatment Technologies Dec 22 2021 Advances in Environmental Pollution Management: Wastewater Impacts and Treatment Technologies has been designed to bind novel knowledge of wastewater pollution-induced impacts on various aspects of our environment. The book also contains novel methods and tools for the monitoring and treatment of produced wastewater.

Advanced Nanomaterials for Water Engineering, Treatment, and Hydraulics Nov 08 2020 While nanotechnology has been a booming research field for years, the study of how it can be used alongside water engineering has not been deeply explored. By examining the ways in which nanomaterials can aid hydraulics, these tools can be used for water purification, water treatments, and a vast array of other uses that will make water engineering easier and safer. Advanced Nanomaterials for Water Engineering, Treatment, and Hydraulics is a comprehensive reference source for the latest research-based material on the use of progressive nanotechnologies for water technologies. Featuring coverage on relevant topics such as water purification, nano-metal oxides, chitosan nanoparticles, and contaminated waste water, this is an ideal reference source for engineers, students, academics, and researchers seeking innovative perspectives on the use of nanomaterials in water engineering.

Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations for 2015 Sep 30 2022

Microbial Rejuvenation of Polluted Environment May 15 2021 Pollution is one of the most serious issues facing mankind and other life forms on earth. Environmental pollution leads to the degradation of ecosystems, loss of services, economic losses, and various other problems. The eco-friendliest approach to rejuvenating polluted ecosystems is with the help of microorganism-based bioremediation. Microorganisms are characterized by great biodiversity, genetic and metabolic machinery, and by their ability to survive, even in extremely polluted environments. As such, they are and will remain the most important tools for restoring polluted ecosystems / habitats. This three-volume book sheds light on the utilization of microorganisms and the latest technologies for cleaning up polluted sites. It also discusses the remediation or degradation of various important pollutants such as pesticides, wastewater, plastics, PAHs, oil spills etc. The book also explains the latest technologies used for the degradation of pollutants in several niche ecosystems. Given its scope, the book will be of interest to teachers, researchers, bioremediation scientists, capacity builders and policymakers. It also offers valuable additional reading material for undergraduate and graduate students of microbiology, ecology, soil science, and the environmental sciences.

Porous Carbons - Hyperbranched Polymers - Polymer Solvation Apr 13 2021 The series Advances in Polymer Science presents critical reviews of the present and future trends in polymer and biopolymer science. It covers all areas of research in polymer and biopolymer science including chemistry, physical chemistry, physics, material science. The thematic volumes are addressed to scientists, whether at universities or in industry, who wish to keep abreast of the important advances in the covered topics. Advances in Polymer Science enjoy a longstanding tradition and good reputation in its community. Each volume is dedicated to a current topic, and each review critically surveys one aspect of that topic, to place it within the context of the volume. The volumes typically summarize the significant developments of the last 5 to 10 years and discuss them critically, presenting selected examples, explaining and illustrating the important principles, and bringing together many important references of primary literature. On that basis, future research directions in the area can be discussed. Advances in Polymer Science volumes thus are important references for every polymer scientist, as well as for other scientists interested in polymer science - as an introduction to a neighboring field, or as a compilation of detailed information for the specialist. Review articles for the individual volumes are invited by the volume editors. Single contributions can be specially commissioned. Readership: Polymer scientists, or scientists in related fields interested in polymer and biopolymer science, at universities or in industry, graduate students.

Environmental Microbiology and Biotechnology Oct 08 2020 This book provides up-to-date information on the state of the art in applications of biotechnological and microbiological tools for protecting the environment. Written by leading international experts, it discusses potential applications of biotechnological and microbiological techniques in solid waste management, wastewater treatment, agriculture, energy and environmental health. This first volume of the book "Environmental Microbiology and Biotechnology," covers three main topics: Solid waste management, Agriculture utilization and Water treatment technology, exploring the latest developments from around the globe regarding applications of biotechnology and microbiology for converting wastes into valuable products and at the same time reducing the environmental pollution resulting from disposal. Wherever possible it also includes real-world examples. Further, it offers advice on which procedures should be followed to achieve satisfactory results, and provides insights that will promote the transition to the sustainable utilization of various waste products.

Development of Unconventional Reservoirs Sep 06 2020 The need for energy is increasing and but the production from conventional reservoirs is declining quickly. This requires an economically and technically feasible source of energy for the coming years. Among some alternative future energy solutions, the most reasonable source is from unconventional reservoirs. As the name "unconventional" implies, different and challenging approaches are required to characterize and develop these resources. This Special Issue covers some of the technical challenges for developing unconventional energy sources from shale gas/oil, tight gas sand, and coalbed methane.

Principles of Accounting Volume 1 - Financial Accounting Jun 23 2019 The text and images in this book are in grayscale. A hardback color version is available. Search for ISBN 9781680922929. Principles of Accounting is designed to meet the scope and sequence requirements of a two-semester accounting course that covers the fundamentals of financial and managerial accounting. This book is specifically designed to appeal to both accounting and non-accounting majors, exposing students to the core concepts of accounting in familiar ways to build a strong foundation that can be applied across business fields. Each chapter opens with a relatable real-life scenario for today's college student. Thoughtfully designed examples are presented throughout each chapter, allowing students to build on emerging accounting knowledge. Concepts are further reinforced through applicable connections to more detailed business processes. Students are immersed in the "why" as well as the "how" aspects of accounting in order to reinforce concepts and promote comprehension over rote memorization.