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The book presents high-quality research papers from the Seventh International Conference on Solid Waste Management (IconSWM 2017), held at Professor Jayashankar Telangana State Agricultural University, Hyderabad on December 15–17, 2017. The conference, an official side event of the high-level Intergovernmental Eighth Regional 3R Forum in Asia and the Pacific, aimed to generate scientific inputs into the policy consultation of the Forum co-organized by the UNCRD/UNDESA, MoEFCC India, MOUD India and MOEJ, Japan. Presenting research on solid waste management from more than 30 countries, the book is divided into three volumes and addresses various issues related to innovation and implementation in sustainable waste management, segregation, collection, transportation of waste, treatment technology, policy and strategies, energy recovery, life cycle analysis, climate change, research and business opportunities.

"This book examines current, state-of-the-art research in the areas of data science, machine learning, data mining, optimization, artificial intelligence, statistics, and the interactions, linkages, and applications of knowledge-based business with information systems"--

This IBM® Redbooks® publication describes the features and functions the latest member of the IBM Z® platform, the IBM z15TM (machine type 8561). It includes information about the IBM z15 processor design, I/O innovations, security features, and supported operating systems. The z15 is a state-of-the-art data and transaction system that delivers advanced capabilities, which are vital to any digital transformation. The z15 is designed for enhanced modularity, which is in an industry standard footprint. This system excels at the following tasks: Making use of multi-cloud integration services Securing data with pervasive encryption Accelerating digital transformation with agile service delivery Transforming a transactional platform into a data powerhouse Getting more out of the platform with IT Operational Analytics Accelerating digital transformation with agile service delivery Revolutionizing business processes Blending open source and Z technologies This book explains how this system uses new innovations and traditional Z strengths to satisfy growing demand for cloud, analytics, and open source technologies. With the z15 as the base, applications can run in a trusted, reliable, and secure environment that improves operations and lessens business risk.

CONTINUOUS EMISSION MONITORING The new edition of the only single-volume reference on both the regulatory and technical aspects of U.S. and international continuous emission monitoring (CEM) systems Continuous Emission Monitoring presents clear, accurate, and up-to-date information on the technical and regulatory issues that affect the design, application, and certification of CEM systems installed in power plants, cement plants, pulp and paper mills, smelters, and other stationary sources. Written by an international expert in the field, this classic reference guide covers U.S. and international CEM regulatory requirements, analytical techniques, operation and maintenance of CEM instrumentation, and more. The fully revised Third Edition remains the most comprehensive source of CEM information available, featuring three brand-new chapters on mercury monitoring, the reporting and certification of industrial greenhouse gas emissions, and the instrumentation and methods used to measure air toxic compounds including dioxins, furans, and hydrogen chloride. Thoroughly updated chapters discuss topics such as flow rate monitors, new EPA regulations, instrumentation and calibration techniques, CEM system control and data acquisition, and extractive system design. Providing environmental professionals with the knowledge of CEM systems necessary to address the present-day regulatory environment, Continuous Emission Monitoring: Discusses how CEM systems work, their advantages and limitations, and the regulatory requirements governing their operation Covers both the historical framework and technological basis of current CEM regulatory programs and standards in the United States, Canada, Europe, and Asia Offers practical guidance on sampling system selection, measurement techniques, advanced monitoring approaches, recordkeeping, and quality assurance Provides detailed technical descriptions of the technology necessary for regulatory compliance Includes new orthographic drawings to help instrument technicians and regulators with little technical background to easily understand key topics Continuous Emission Monitoring, Third Edition is an essential resource for professionals responsible for ensuring regulatory compliance, managers and technicians who purchase, operate, and maintain CEM instrumentation, regulatory personnel who write and enforce operating permits, and instructors and students in upper-level environmental engineering programs.

This book, divided in two volumes, originates from Techno-Societal 2020: the 3rd International Conference on Advanced Technologies for Societal Applications, Maharashtra, India, that brings together faculty members of various engineering colleges to solve Indian regional relevant problems under the guidance of eminent researchers from various reputed organizations. The focus of this volume is on technologies that help develop and improve society, in particular on issues such as advanced and sustainable technologies for manufacturing processes, environment, livelihood, rural employment, agriculture, energy, transport, sanitation, water, education. This conference aims to help innovators to share their best practices or products developed to solve specific local problems which in turn may help the other researchers to take inspiration to solve problems in their region. On the other hand, technologies proposed by expert researchers may find applications in different regions. This offers a multidisciplinary platform for researchers from a broad range of disciplines of Science, Engineering and Technology for reporting innovations at different levels.

Organic waste composting is another excellent example to demonstrate the power and the benefits of nexus thinking. Even though organic waste composting itself is not a new topic, those who want to start a new project or align an ongoing project with nexus thinking, find it difficult to gather the necessary information. With nine case studies from four continents, this book aims to fill above gap in literature. While current literature on compost-

ing is often found to be limited to either soil/agriculture sector or waste management sector, this book presents a combined point of view. This open access book starts with an introductory chapter that describes the need to bring the waste management aspects and soil nutrient management aspects of compost production into one integrated theme. The relevance of nexus thinking and the Sustainable Development Goals (SDGs) are also presented in this introduction. The first three chapters after the introduction covers composting from the solid waste management and its policy aspects, taking examples from three developing countries. The next three examples are mostly about the benefits composting can provide to the soil and agriculture. These examples are also from three developing countries, but with a mixture of urban as well as rural settings. Last three chapters present more insight into the latest developments taking examples from Europe, as well as new methods adapted from the traditional styles from Africa.

Addresses the key cotton ginning issues concerned with facilities, machinery, cleaning, ginning, drying, packaging, and waste collection and disposal as well as ancillary issues concerned with pollution, management, economics, energy, insurance, safety, cotton classification, and textile machinery. Appendices: duties of gin personnel, portable moisture meters and pink bollworm control in gins. Glossary and index. Photos, charts, tables and graphs.

Affordable and effective domestic wastewater treatment is a critical issue in public health and disease prevention around the world, particularly so in developing countries which often lack the financial and technical resources necessary for proper treatment facilities. This practical guide provides state-of-the-art coverage of methods for domestic wastewater treatment and provides a foundation to the practical design of wastewater treatment and re-use systems. The emphasis is on low-cost, low-energy, low--maintenance, high-performance 'natural' systems that contribute to environmental sustainability by producing effluents that can be safely and profitably used in agriculture for crop irrigation and/or in aquaculture, for fish and aquatic vegetable pond fertilization. Modern design methodologies, with worked design examples, are described for waste stabilization ponds, wastewater storage and treatment reservoirs; constructed wetlands, upflow anaerobic sludge blanket reactors, biofilters, aerated lagoons and oxidation ditches. This book is essential reading for engineers, academics and upper-level and graduate students in engineering, wastewater management and public health, and others interested in sustainable and cost-effective technologies for reducing wastewater-related diseases and environmental damage.

The Importance Of Environmental Studies Cannot Be Disputed Since The Need For Sustainable Development Is A Key To The Future Of Mankind. Recognising This, The Honourable Supreme Court Of India Directed The Ugc To Introduce A Basic Course On Environmental Education For Undergraduate Courses In All Disciplines, To Be Implemented By Every University In The Country. Accordingly, The Ugc Constituted An Expert Committee To Formulate A Six-Month Core Module Syllabus For Environmental Studies. This Textbook Is The Outcome Of The Ugc S Efforts And Has Been Prepared As Per The Syllabus. It Is Designed To Bring About An Awareness On A Variety Of Environmental Concerns. It Attempts To Create A Pro-Environmental Attitude And A Behavioural Pattern In Society That Is Based On Creating Sustainable Lifestyles And A New Ethic Towards Conservation. This Textbook Stresses On A Balanced View Of Issues That Affect Our Daily Lives. These Issues Are Related To The Conflict Between Existing `Development Strategies And The Need For `Conservation . It Not Only Makes The Student Better Informed On These Concerns, But Is Expected To Lead The Student Towards Positive Action To Improve The Environment. Based On A Multidisciplinary Approach That Brings About An Appreciation Of The Natural World And Human Impact On Its Integrity, This Textbook Seeks Practical Answers To Make Human Civilization Sustainable On The Earth S Finite Resources. Attractively Priced At Rupees One Hundred And Fifteen Only, This Textbook Covers The Syllabus As Structured By The Ugc, Divided Into 8 Units And 50 Lectures. The First 7 Units, Which Cover 45 Lectures Are Classroom Teaching-Based, And Enhance Knowledge Skills And Attitude To Environment. Unit 8 Is Based On Field Activities To Be Covered In 5 Lecture Hours And Would Provide Students With First Hand Knowledge On Various Local Environmental Issues.

Praise for Endgame "This is an extremely powerful, sobering, well-written and highly accessible book. It will demonstrate to you why there are no painless solutions to the mounting debt problems around the world—something that too many people are yet to realize. It will take you on a well-documented journey through the debt supercycle, making stops around the world and at critical junctures. And it is a must-read for anyone wishing to understand the global debt dynamics and ways to protect against its bad consequences." —Mohamed A. El-Erian, CEO, PIMCO, and author of When Markets Collide "No one has thought more creatively about the economy. Mauldin's weekly newsletter is a must-read, and his book is even more important if you want to understand a rapidly changing world." —Newt Gingrich, Former Speaker of the House of Representatives "Successful investors explore all possibilities. You should read this book so you can succeed in case the Endgame is our future." —Jim Rogers, author of A Gift to My Children "I read everything John Mauldin writes. He travels the world and shares his financial stories like a good friend sharing a drink. Mauldin is that rarity—a skeptical optimist—who calls 'em straight and rewards his clients and fans." —Rich Karlgaard, Publisher and Columnist, Forbes magazine "There's clearly something important going on in the world economy. Something big. Something powerful and dangerous. But something as yet undefined and uncertain. We are all feeling our way around in the dark, trying to figure out what it is. John Mauldin must have night vision glasses. He does an excellent job of seeing the obstacles. You should read this book before you knock over a lamp and stumble over the furniture." —William Bonner, President and CEO, Agora Inc., and author of Dice Have No Memory and Empire of Debt "Endgame is not only a highly readable and informative account of the causes of the recent global economic and financial meltdown, but it also provides investors with a concrete investment strategy from which they can benefit while this final act in financial history is being played out." —Marc Faber, Managing Director, Marc Faber, Ltd., and Editor, Gloom, Boom & Doom Report

Exponential growth of the worldwide population requires increasing amounts of water, food, and energy. However, as the quantity of available fresh water and energy sources directly affecting cost of food production and transportation diminishes, technological solutions are necessary to secure sustainable supplies. In direct response to this reality, this book focuses on the water-energy--food nexus and describes in depth the challenges and processes involved in efficient water and energy production and management, wastewater treatment, and impact upon food and essential commodities. The book is organized into 4 sections on water, food, energy, and the future of sustainability, highlighting the interplay among these topics. The first section emphasizes water desalination, water management, and wastewater treatment. The second section discusses cereal processing, sustainable food security, bioenergy in food production, water and energy consumption in food processing, and mathematical modeling for food undergoing phase changes. The third section discusses fossil fuels,

biofuels, synthetic fuels, renewable energy, and carbon capture. Finally, the book concludes with a discussion of the future of sustainability, including coverage of the role of molecular thermodynamics in developing processes and products, green engineering in process systems, petrochemical water splitting, petrochemical approaches to solar hydrogen generation, design and operation strategy of energy-efficient processes, and the sustainability of process, supply chain, and enterprise.

This book discusses regional and international climate-change, air- pollution and human-health scenarios. The research, from both industrialized and developing countries, focuses on region-specific perspectives of climate change impacts on air pollution. After analyzing the variations of climate data over recent decades, the authors consider the different effects of climate change on air pollution and health. As stressed by the IPCC, “pollen, smoke and ozone levels are likely to increase in a warming world, affecting the health of residents of major cities. Rising temperatures will worsen air quality through a combination of more ozone in cities, bigger wild fires and worse pollen outbreaks,” according to a major UN climate report. The report follows the World Health Organization in finding that air pollution is the world’s greatest environmental health risk, killing 7 million people in 2014 (compared to 0.4 million deaths due to malaria). Deteriorating air quality will most affect the elderly, children, people with chronic ill-health and expectant mothers. Another report suggests that more than 5.5 million people die prematurely each year due to air pollution with over half of those deaths occurring in China and India. A study on the air pollution in the USA,suggests that more than half of US population lives in areas with potentially dangerous air pollution, and about six out of 10 of the top cities for air pollution in the USA are located in the state of California. In the face of future climate change, scientists have urged stronger emission controls to avoid worsening air pollution and the associated exacerbation of health problems, especially in more populated regions of the world. It is hoped that the implementation of the Paris Climate Agreement will help minimize air pollution. Additionally the authors consider the various measures that different countries and groups of countries, like the European Union, have adopted to mitigate the problems arising from climate change and to safeguard the health of population. The book examines the increasing incidence of diseases largely caused by climate change. The countries/regions covered in this study include the USA, Northern Europe (U.K).,Southern Europe (Italy), Canada, Australia, East Asia, Russia, Hong Kong, Taiwan, Thailand, Malaysia, Indonesia, India, South Africa, Mexico, Brazil, Caribbean countries, and Argentina.

Intensely practical and down to earth, this timely new text covers the breadth of health emergency preparedness, resilience and response topics in the context of inter-disciplinary and whole society responses to a range of threats. It includes public, private and third sector roles in preparation for and in response to natural and man-made events, such as: major incident planning; infectious disease epidemics and pandemics; natural disasters; terrorist threats; and business and service continuity management. The book builds upon the basics of risk assessment and writing an emergency plan, and then covers inter-agency working, command and control, communication, personal impact and business continuity as well as training, exercises and post-incident follow up. Detailing the full emergency preparedness and civil protection planning cycle, the book is illustrated throughout with real-life examples and case studies from global experts in the field for countries with both advanced and developing healthcare systems. This practical handbook covering the essential aspects of major incident and disaster management is ideal for undergraduate and master's students in emergency management and public health, as well as for practitioners in emergency preparedness and civil protection. It will be valuable to all health practitioners from ambulance, hospital, primary and community care, mental health and public health backgrounds.

Today, there is increasing pressure on the water infrastructure and although unsustainable water extraction and wastewater handling can continue for a while, at some point water needs to be managed in a way that is sustainable in the long-term. We need to handle water utilities "smarter". New and effective tools and technologies are becoming available at an affordable cost and these technologies are steadily changing water infrastructure options. The quality and robustness of sensors are increasing rapidly and their reliability makes the automatic handling of critical processes viable. Online and real-time control means safer and more effective operation. The combination of better sensors and new water treatment technologies is a strong enabler for decentralised and diversified water treatment. Plants can be run with a minimum of personnel attendance. In the future, thousands of sensors in the water utility cycle will handle all the complexity in an effective way. Smart Water Utilities: Complexity Made Simple provides a framework for Smart Water Utilities based on a M-A-D (Measurement-Analysis-Decision). This enables the organisation and implementation of "Smart" in a water utility by providing an overview of supporting technologies and methods. The book presents a an introduction to methods and tools, providing a perspective of what can and could be achieved. It provides a toolbox for all water challenges and is essential reading for the Water Utility Manager, Engineer and Director and for Consultants, Designers and Researchers. Authors: Pernille Ingildsen, Chief of Plan and Project at Kalundborg utility, Denmark and Gustaf Olsson, Professor Em. in Industrial Automation, Lund University, Sweden

This book provides the first systematic explanation of the origins of constitutional designs from an analytical, historical, and comparative perspective. Based on a comprehensive analysis of constitutional change in Latin America from 1900 to 2008 and four detailed case studies, Gabriel Negretto shows that the main determinants of constitutional choice are the past performance of constitutions in providing effective and legitimate instruments of government and the strategic interests of the actors who have influence over institutional selection. The book explains how governance problems shape the general guidelines for reform, while strategic calculations and power resources affect the selection of specific alternatives of design. It also emphasizes the importance of the events that trigger reform and the designers' level of electoral uncertainty for understanding the relative impact of short-term partisan interests on constitution writing. Negretto's study challenges predominant theories of institutional choice, and paves the way for the development of a new research agenda on institutional change.

Due to the complexity, and heterogeneity of the smart grid and the high volume of information to be processed, artificial intelligence techniques and computational intelligence appear to be some of the enabling technologies for its future development and success. The theme of the book is “Making pathway for the grid of future” with the emphasis on trends in Smart Grid, renewable interconnection issues, planning-operation-control and reliability of grid, real time monitoring and protection, market, distributed generation and power distribution issues, power electronics applications, computer-IT and signal processing applications, power apparatus, power engineering education and industry-institute collaboration. The primary objective of the book is to review the current state of the art of the most relevant artificial intelligence techniques applied to the different issues that arise in the smart

grid development.
Discover the latest trends in the abatement of water pollution from four celebrated and authoritative authors Water Resource Management: Strategies and Scarcity delivers a balanced and comprehensive look at recent trends in the management of polluted water resources. Covering the latest practical and theoretical aspects of polluted water management, the distinguished academics and authors emphasize indigenous practices of water resource management, the scarcity of clean water, and the future of the water system in the context of an increasing urbanization and globalization. The book details the management of contaminated water sites, including heavy metal contaminations in surface and subsurface water sources. It details a variety of industrial activities that typically pollute water, such as those involving crude oils and dyes. In its discussion of recent trends in abatement strategies, Water Resource Management includes an exploration of the application of microorganisms, like bacteria, actinomycetes, fungi, and cyanobacteria, for the management of environmental contaminants. Readers will also discover a wide variety of other topics on the conservation of water sources, like: The role of government and the public in the management of water resource pollution The causes of river system pollution and potential future scenarios in the abatement of river pollution Microbial degradation of organic pollutants in various water bodies The advancement in membrane technology used in water treatment processes Lead contamination in groundwater and recent trends in abatement strategies for it Highly polluting industries and their effects on surrounding water resources Perfect for graduate and post graduate students and researchers whose focus is on recent trends in abatement strategies for pollutants and the application of microorganisms for the management of environmental contaminants, Water Resource Management: Strategies and Scarcity also has a place in the libraries of environmentalists whose work involves the management and conservation of polluted sites.
Why does authoritarian China provide a higher level of public goods than democratic India? Studies based on regime type have shown that the level of public goods provision is higher in democratic systems than in authoritarian forms of government. However, public goods provision in China and India contradicts these findings. Whether in terms of access to education, healthcare, public transportation, and basic necessities, such as drinking water and electricity, China does consistently better than India. This book argues that regime type does not determine public goods outcomes. Using empirical evidence from the Chinese and Indian municipal water sectors, the study explains and demonstrates how a social contract, an informal institution, influences formal institutional design, which in turn accounts for the variations in public goods provision.
The book provides reader with a comprehensive up-to-date overview of various aspects of soil pollutants manifestation of toxicity. The book highlights their interactions with soil constituents, their toxicity to agro-ecosystem & human health, methodologies of toxicity assessment along with remediation technologies for the polluted land by citing case studies. It gives special emphasis on scenario of soil pollution threats in developing countries and ways to counteract these in low cost ways which have so far been ignored. It also explicitly highlights the need for soil protection policy and identifies its key considerations after analyzing basic functions of soil and the types of threats perceived. This book will be a useful resource for graduate students and researchers in the field of environmental and agricultural sciences, as well as for personnel involved in environmental impact assessment and policy making.
Freshwater Algae: Identification and Use as Bioindicators provides a comprehensive guide to temperate freshwater algae, with additional information on key species in relation to environmental characteristics and implications for aquatic management. The book uniquely combines practical material on techniques and water quality management with basic algal taxonomy and the role of algae as bioindicators. Freshwater Algae: Identification and Use as Bioindicators is divided into two parts. Part I describes techniques for the sampling, measuring and observation of algae and then looks at the role of algae as bioindicators and the implications for aquatic management. Part II provides the identification of major genera and 250 important species. Well illustrated with numerous original illustrations and photographs, this reference work is essential reading for all practitioners and researchers concerned with assessing and managing the aquatic environment.
This Revised Edition Of The Book On Environmental Pollution Control Engineering Features A Systematic And Thorough Treatment Of The Principles Of The Origin Of Air, Water And Land Pollutants, Their Effect On The Environment And The Methods Available To Control Them. The Demographic And Environmental Trends, Energy Consumption Patterns And Their Impact On The Environment Are Clearly Discussed. Application Of The Physical, And Chemical Engineering Concepts To The Design Of Pollution Control Equipment Is Emphasized. Due Importance Is Given To Modelling, Quality Monitoring And Control Of Specific Major Pollutants. A Separate Chapter On The Management Of Hazardous Wastes Is Added. Information Pertaining To Indian Conditions Is Given Wherever Possible To Help The Reader Gain An Insight Into India Sown Pollution Problems.This Book Is Mainly Intended As A Textbook For An Integrated One-Semester Course For Senior Level Undergraduate Or First Year Post-Graduate Engineering Students And Can Also Serve As A Reference Book To Practising Engineers And Decision Makers Concerned With Environmental Pollution Control.

Solid waste management issues, technologies and challenges are dynamic. More so, in developing and transitory nations in Asia. This book, written by Asian experts in solid waste management, explores the current situation in Asian countries including Pacific Islands. There are not many technical books of this kind, especially dedicated to this region of the world. The chapters form a comprehensive, coherent investigation in municipal solid waste (MSW) management, including, definitions used, generation, sustainable waste management system, legal framework and impacts on global warming. Several case studies from Asian nations are included to exemplify the real situation experienced. Discussions on MSW policy in these countries and their impacts on waste management and minimization (if any) are indeed an eye-opener. Undoubtedly, this book would be a pioneer in revealing the latest situation in the Asian region, which includes two of the world's most dynamic nations in the economic growth. It is greatly envisaged to form an excellent source of reference in MSW management in Asia and Pacific Islands. This book will bridge the wide gap in available information between the developed and transitory/developing nations.
The report presents the latest assessment of global trends in wildlife crime. It includes discussions on illicit rosewood, ivory, rhino horn, pangolin scales, live reptiles, tigers and other big cats, and European eel. The COVID-19 (coronavirus) pandemic has highlighted that wildlife crime is a threat not only to the environment and biodiversity, but also to human health, economic development and security. Zoonotic diseases - those caused by pathogens that spread from animals to humans - represent up to 75% of all emerging infectious diseases. Trafficked wild species and the resulting products offered for human consumption, by definition, escape any hygiene or sanitary control, and therefore pose

even greater risks of infection.