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ANTONIO GARZA

[Sustainable Food Production Includes Human and Environmental Health](#) Springer

This book reports on innovative concepts and practical solutions at the intersection between engineering design, engineering production and industrial management. It covers cutting-edge design, modeling and control of dynamic and multiphysics systems, knowledge management systems in industry 4.0, cyber-physical production systems, additive and sustainable manufacturing and many other related topics. The original, carefully selected, peer-reviewed chapters highlight collaborative works between different countries and between industry and universities, thus offering a timely snapshot for the research and industrial communities alike, as well as a bridge to facilitate communication and collaboration.

Whole System Design John Wiley & Sons

This book provides different engineering, management, economic solutions and methodologies regarding sustainable aviation, giving readers a great sense of how sustainable aviation works at the "systems" level. The aviation industry is one of the fastest growing in the world and can make a positive contribution to sustainability. This book presents environmental policies and their application to the aviation industry and evaluates solutions provided to address pollution. Chapters discuss novel technologies that the aviation industry can apply to reduce its environmental impact and become more energy efficient.

The Integrated Reporting Movement American Society of Mechanical Engineers

This book provides an overview of recent advances in Integrated Community-Managed Development (ICMD) as an innovative strategy for the community-based development of local institutions in order to achieve lasting poverty reduction and empowerment. The original approach presented here to improving the lives and livelihoods of the poor takes a critical stance on the failing concept of conventional community development, as it is based on the shifting paradigm of 'bottom-up' cooperation and development, where recent regional autonomy policies are enabling national services to successfully integrate with local institutions at the community level. Based on recent experiences in South-East Asia, where the implementation of an alternative approach to integrating financial, medical, educational, communication and socio-cultural services has led to increased community participation and impressive poverty reduction, the book highlights the theoretical, methodological and

practical aspects of this innovative strategy. The potential offered by applying the newly developed 'ICMD formula' worldwide as a function of themes, principles and services is reflected in the book's diverse range of contributions, written by respected researchers and practitioners in the fields of development economics and financial management.

Advances in Research, Theory and Practice in Work-Integrated Learning Springer Nature

The proceedings includes the set of revised papers from the 23rd International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2013). This conference aims to provide an international forum for the exchange of leading edge scientific knowledge and industrial experience regarding the development and integration of the various aspects of Flexible Automation and Intelligent Manufacturing Systems covering the complete life-cycle of a company's Products and Processes. Contents will include topics such as: Product, Process and Factory Integrated Design, Manufacturing Technology and Intelligent Systems, Manufacturing Operations Management and Optimization and Manufacturing Networks and MicroFactories.

Sustainable Operations Management IGI Global

The book presents the select proceedings of the International Conference on Recent Advances in Sustainable Environment (RAISE 2022). It discusses recent challenges and advances in various areas of sustainable environment. The topics covered include environmental dynamics, atmospheric physics, physical oceanography, global environmental change & ecosystems management, climate & climatic changes, global warming, ozone layer depletion, carbon capture & storage, integrated ecosystems management, satellite applications in the environment, environmental restoration & ecological engineering, habitat reconstruction, biodiversity conservation, deforestation, landscape degradation & restoration, ground water remediation, soil decontamination, environmental sustainability, renewable sources of energy, clean technologies, toxicity assessment & epidemiological studies, indoor air pollution, etc. This book will be useful for the researches, academicians, scientists, and professionals working in the various areas of environment sustainability, especially sustainable civil engineering.

[Advances in Integrated and Sustainable Supply Chain Planning](#) Springer

This book presents innovative research on various aspects of sustainability in the field of operations management and illustrates the potential of sustainability thinking and practice to improve operations performance and thereby meet customer needs. Particular attention is devoted to corporate social responsibility and marketing strategy, knowledge management for sustainability, the role of culture in a sustainable built

environment, sustainable manufacturing through the application of lean and green concepts, advancing sustainability through ISO standards, and the sustainable supply chain. The present decade is proving to be a time of change in terms of business strategies and operations management. Many of the trends are still subject to uncertainty, but an understanding of the need for, and benefits of, sustainability can give a clear indication of their trajectory. Consumers and markets in general believe that while implementing their business strategies, companies should also try to improve society and the environment and to exercise social responsibility toward their employees. This book provides insights into how this may be achieved, and it is recommended for researchers as well as all practitioners and managers dedicated to enhancing sustainability in operations.

Business Value and Sustainability Springer Science & Business Media

Decision making at the enterprise level often encompass not only production operations and product R&D, but other strategic functions such as financial planning and marketing. With the aim of maximizing growth and a firm's value, companies often focus on co-ordinating these functional components as well as traditional hierarchical decision levels. Understanding this interplay can enhance enterprise capabilities of adaptation and response to uncertainties arising from internal processes as well as the external environment. This book presents concepts, methods, tools and solutions based on mathematical programming, which provides the quantitative support needed for integrated decision-making and ultimately for improving the allocation of overall corporate resources (e.g., materials, cash and personnel). Through a systems perspective, the integrated planning of the supply chain also promotes activities of reuse, reduction and recycling for achieving more sustainable environmental impacts of production/distribution networks. Thus, this book presents, for the first time, a unique integrated vision of the Enterprise Supply Chain Planning and provides a comprehensive account of the state of the art models, methods and tools available to address the above mentioned features of the modern supply chain. It offers a comprehensive review of the associated literature of supply chain management and then systematically builds on this knowledge base to develop the mathematical models representing each of the core functional units and decision levels of the corporation and shows how they can be integrated into a holistic decision problem formulation. Abundant illustrations and tables help maximize reader insights into the problems discussed with several case studies and industry application also examined. This book is intended as a textbook for academics (PhD, MSc), researchers and industry decision-makers, who are involved in the design, retrofit and

evaluation of alternative scenarios for the improvement of the supply chain.

Advances in Sustainable and Competitive Manufacturing Systems Springer Nature

Whole System Design is increasingly being seen as one of the most cost-effective ways to both increase the productivity and reduce the negative environmental impacts of an engineered system. A focus on design is critical as the output from this stage of the project locks in most of the economic and environmental performance of the designed system throughout its life which can span from a few years to many decades. Indeed it is now widely acknowledged that all designers - particularly engineers architects and industrial designers - need to be able to understand and implement a whole system design approach. This book provides a clear design methodology based on leading efforts in the field and is supported by worked examples that demonstrate how advances in energy materials and water productivity can be achieved through applying an integrated approach to sustainable engineering. Chapters 1-5 outline the approach and explain how it can be implemented to enhance the established Systems Engineering framework. Chapters 6-10 demonstrate through detailed worked examples the application of the approach to industrial pumping systems passenger vehicles electronics and computer systems temperature control of buildings and domestic water systems. Published with The Natural Edge Project the World Federation of Engineering Organizations UNESCO and the Australian Government.

Managing Water, Soil and Waste Resources to Achieve Sustainable Development Goals Springer

This book explores how integrated management of environmental resources via a Nexus Approach can help to achieve Sustainable Development Goals (SDGs). It takes a process-oriented view on what should or needs to be done to implement a Nexus Approach and how this relates to SDGs. After sketching the background and conceptual outline, contributions to the book explore key aspects of monitoring and implementation. Specifically, they: focus on the importance of monitoring resource use and how to advance it at the international level to support SDG implementation, exemplify the resources perspective on the nexus approach by exploring how to close the nitrogen cycle and stay within planetary boundaries, elaborate on proven and emerging strategies for nexus implementation, highlighting means to enhance, monitor and analyse stakeholder participation, explain how the horizontal and vertical nexus dimensions interact and can support SDG implementation. The book sheds new light on key aspects of the interrelation between SDGs and the Nexus Approach and provides specific recommendations how to advance it.

Advanced Integrated Approaches to Environmental Economics and Policy: Emerging Research and Opportunities Springer

We are living at the dawn of what has been termed 'the fourth paradigm of science,' a scientific revolution that is marked by both the emergence of big data science and analytics, and by the increasing adoption of the underlying technologies in scientific and scholarly research practices. Everything about science development or knowledge production is fundamentally changing thanks to the ever-increasing deluge of data. This is the primary fuel of the new age, which powerful computational processes or analytics algorithms are using to generate valuable knowledge for enhanced decision-making, and deep insights pertaining to a wide variety of practical uses and applications. This book addresses the complex interplay of the scientific, technological, and social dimensions of the city, and what it entails in terms of the systemic implications for smart sustainable urbanism. In concrete terms, it explores the interdisciplinary and transdisciplinary field of smart sustainable urbanism and the unprecedented paradigmatic shifts and practical advances it is undergoing in light of big data science and analytics. This new era of science and technology embodies an unprecedentedly transformative and constitutive power—manifested not only in the form of revolutionizing science and transforming knowledge, but also in advancing social practices, producing new discourses, catalyzing major shifts, and fostering societal transitions. Of particular relevance, it is instigating a massive change in the way both smart cities and sustainable cities are studied and understood, and in how they are planned, designed, operated, managed, and governed in the face of urbanization. This relates to what has been dubbed data-driven smart sustainable urbanism, an emerging approach based on a computational understanding of city systems and processes that reduces urban life to logical and algorithmic rules and procedures, while also harnessing urban big data to provide a more holistic and integrated view or synoptic intelligence of the city. This is increasingly being directed towards improving, advancing, and maintaining the contribution of both sustainable cities and smart cities to the goals of sustainable development. This timely and multifaceted book is aimed at a broad readership. As such, it will appeal to urban scientists, data scientists, urbanists, planners, engineers, designers, policymakers, philosophers of science, and futurists, as well as all readers interested in an overview of the pivotal role of big data science and analytics in advancing every academic discipline and social practice concerned with data-intensive science and its

application, particularly in relation to sustainability.

Advances in Integrated Management of Fresh and Saline Water for Sustainable Crop Production John Wiley & Sons

Sustainable Food and Agriculture: An Integrated Approach is the first book to look at the imminent threats to sustainable food security through a cross-sectoral lens. As the world faces food supply challenges posed by the declining growth rate of agricultural productivity, accelerated deterioration of quantity and quality of natural resources that underpin agricultural production, climate change, and hunger, poverty and malnutrition, a multi-faceted understanding is key to identifying practical solutions. This book gives stakeholders a common vision, concept and methods that are based on proven and widely agreed strategies for continuous improvement in sustainability at different scales. While information on policies and technologies that would enhance productivity and sustainability of individual agricultural sectors is available to some extent, literature is practically devoid of information and experiences for countries and communities considering a comprehensive approach (cross-sectoral policies, strategies and technologies) to SFA. This book is the first effort to fill this gap, providing information on proven options for enhancing productivity, profitability, equity and environmental sustainability of individual sectors and, in addition, how to identify opportunities and actions for exploiting cross-sectoral synergies. - Provides proven options of integrated technologies and policies, helping new programs identify appropriate existing programs - Presents mechanisms/tools for balancing trade-offs and proposes indicators to facilitate decision-making and progress measurement - Positions a comprehensive and informed review of issues in one place for effective education, comparison and evaluation

Advances in Mobility-as-a-Service Systems Springer

Sustainability is a fairly old concept, born in the 18th century in the field of forestry, within a mono-functionality perspective. The concept has considerably evolved in the last few years towards a multi-functionality context, with applications reported in practically all areas of economic interest. On the other hand, modern sustainability is a complex problem, for two reasons: a) The multiplicity of functions of a very different nature involved in the process and b) The manner in which different segments of the society or stakeholders perceive the relative importance of these functions. For the above reasons, a realistic approach for dealing with the sustainability issue requires taking into consideration multiple criteria of different nature (economic, environmental and social), and in many cases within a participatory decision making framework. This book presents a collection of papers, dealing with different theoretical and applied issues of sustainability, with the help of a modern multi-criteria decision-making theory, with a single as well as several stakeholders involved in the decision-making process. Hopefully, this material will encourage academics and practitioners to alter their research in this hot and vital topic. After all, the sustainable management of the environment and its embedded resources is one of the most important, if not the major challenge of the 21st century.

Palm Trees and Fruits Residues John Wiley & Sons

Practical solutions for sustainability In this timely guide, one of the world's leaders in advanced building technology implementation shows architects and engineers proven and practical methods for implementing these technologies in sustainably-designed buildings. Because of the very limited time architects are given from being awarded a project to concept design, this book offers clear and workable solutions for implementing solar energy, radiant heating and cooling floors, displacement ventilation, net zero, and more. It provides helpful tips and suggestions for architects and engineers to work together on implementing these technologies, along with many innovative possibilities for developing a truly integrated design. This book also explores and explains the many benefits of advanced technologies, including reduced greenhouse gas emissions, lower operating costs, noise reduction, improved indoor air quality, and more. In addition, Advanced Building Technologies for Sustainability: Offers detailed coverage of solar energy systems, thermal energy storage, geothermal systems, high-performance envelopes, chilled beams, under-floor air distribution, displacement induction units, and much more Provides case studies of projects using advanced technologies and demonstrates their implementation in a variety of contexts and building types Covers the implementation of advanced technologies in office towers, large residential buildings, hospitals, schools, dormitories, theaters, colleges, and more Complete with a clear and insightful explanation of the requirements for and benefits of acquiring the U.S. Green Building Council's LEED certification, Advanced Building Technologies for Sustainability is an important resource for architects, engineers, developers, and contractors involved in sustainable projects using advanced technologies.

Advances in Integrated Design and Production Springer Science & Business Media

Sustainable development remains a significant issue in a globalized world requiring new economic standards and practices for the betterment of the environment as well as the world economy. However, sustainable economics must manage

environmental solutions to issues on multiple levels and within various disciplines. There is a need for studies that seek to understand how environmental economics and governance within small and large sectors affect the capability and wellbeing of the global economy. Advanced Integrated Approaches to Environmental Economics and Policy: Emerging Research and Opportunities is an essential publication that focuses on the strategic role of environmental issues within the global economy. While highlighting topics such as complementary currency, reusable waste, and urban planning, this book is ideally designed for policymakers, environmental lawyers, economists, sociologists, politicians, academicians, researchers, and students seeking current research on increasing an organization's sustainable performance at both public and private levels.

Advanced Integrated Approaches to Environmental Economics and Policy: Emerging Research and Opportunities Elsevier

This book explores the recent advances in the leading paradigms of urbanism, namely compact cities, eco-cities, and data-driven smart cities, and the evolving approach to their amalgamation under the umbrella term of smart sustainable cities. It addresses these advances by investigating how and to what extent the strategies of compact cities and eco-cities and their merger have been enhanced and strengthened through new planning and development practices, and are being supported and leveraged by the applied solutions pertaining to data-driven smart cities. The ultimate goal is to advance sustainability and harness its synergistic effects on multiple scales. This entails developing and implementing more effective approaches to the balanced integration of the three dimensions of sustainability, as well as to producing combined effects of the strategies and solutions of the prevailing approaches to urbanism that are greater than the sum of their separate effects in terms of the tripartite value of sustainability. Sustainable urban development is today seen as one of the keys towards unlocking the quest for a sustainable world. And the big data revolution is set to erupt in cities throughout the world, heralding an era where instrumentation, datafication, and computation are increasingly pervading the very fabric of cities and the spaces we live in thanks to the IoT. Big data and the IoT technologies are seen as powerful forces that have tremendous potential for advancing urban sustainability. Indeed, they are instigating a massive change in the way sustainable cities can tackle the kind of special conundrums, wicked problems, and significant challenges they inherently embody as complex systems. They offer a multitudinous array of innovative solutions and sophisticated approaches informed by groundbreaking research and data-driven science. As such, they are becoming essential to the functioning of sustainable cities. Besides, yet knowing to what extent we are making progress towards sustainable cities is problematic, adding to the fragmented, conflicting picture that arises of change on the ground in the face of the escalating rate and scale of urbanization and in the light of emerging ICT and its novel applications. In a nutshell, new circumstances require new responses. This timely and multifaceted book is intended for a wide readership. As such, it will appeal to researchers, academics, urban scientists, urbanists, planners, designers, policy-makers, and futurists, as well as all readers interested in sustainable cities and their ongoing and future data-driven transformation.

Sustainable Development Research Advances Elsevier

This book gathers together innovative research and practical findings relating to urban mobility transformation. It is especially intended to provide academicians, researchers, practitioners and decision makers with effective strategies and techniques that can support urban mobility in a sustainable way. The chapters, which report on contributions presented at the 5th Conference on Sustainable Urban Mobility, held virtually on June 17-19, 2020, from Greece, cover the thematic areas of: social networks and traveler behavior; applications of technologies in transportation and big data analytics; transport infrastructure and traffic management; and transportation modeling and impact assessment. Special attention is given to public transport and demand responsive systems, electromobility, micromobility and automated vehicles. The book addresses the challenges of the near future, highlighting the importance of knowledge transfer, and it is intended to foster communication among universities, industries and public administration.

Advances in Smart Cities Elsevier

This volume provides an overview of the fundamental concepts and recent advancements in organic farming, a form of agriculture that is increasing rapidly in popularity. Readers will discover information on the history of organic farming, environmental friendly practices and challenges, and innovations in the field. The chapter authors analyze pertinent aspects of this integrated farming system including strategies to improve seed quality, methods to improve soil fertility, and the advantages of using organic fertilizers. Particular attention is also given to weed management practices, bioenergy production and insights into the ways organic farming can adapt to global climate change and build sustainable food systems for future generations. Scientists, decision-makers, professors, and farmers who wish to work towards making agricultural systems more sustainable will find

this book appealing.

Environmental Modeling for Sustainable Regional Development: System Approaches and Advanced Methods Springer Nature
Sustainable development has been defined as balancing the fulfilment of human needs with the protection of the Natural environment so that these needs can be met not only in the present, but in the indefinite future. The term was used by the Brundtland Commission which coined what has become the most often-quoted definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own need." The field of sustainable development can be conceptually broken into four constituent parts: environmental sustainability, economic sustainability, social sustainability and political sustainability. This new book presents the latest research in the field.

Sustainability as a Multi-criteria Concept Springer Science & Business Media

Palm Trees and Fruits Residues: Recent Advances for Integrated and Sustainable Management places the wastes of palm trees and fruit residues in the international context of sustainable development, providing sustainable applications that are detailed based on sector to help readers from specific fields identify

applications. Furthermore, successful processing case studies using valorization are presented. As the expansion of palm tree fruit crops processing industries (manufacture of syrup, honey, non-alcoholic beverages, flours, confectionery products, fruit paste, etc.) is generating growing quantities of wastes in different forms, this book covers sustainable aspects. Written by an international team of contributors, this title is aimed at professionals and enterprises who aspire to develop real, high-scale industrial applications for palm tree and fruit residue valorization. - Includes palm tree wastes and fruit processing by-products, their quantification and classification - Brings identification, quantification and characterization of palm-tree and fruit wastes - Thoroughly explores biotechnological, agricultural, environmental and energy applications of fruit processing by-products - Contains case studies of a palm tree fruit processing by-products valorization

A Nexus Approach for Sustainable Development National Academies Press

Collaboration between those working in product development and production is essential for successful product realization. The Swedish Production Academy (SPA) was founded in 2006 with the aim of driving and developing production research and higher education in Sweden, and increasing national cooperation in

research and education within the area of production. This book presents the proceedings of SPS2024, the 11th Swedish Production Symposium, held from 23 to 26 April 2024 in Trollhättan, Sweden. The conference provided a platform for SPA members, as well as for professionals from industry and academia interested in production research and education from around the world, to share insights and ideas. The title and overarching theme of SPS2024 was Sustainable Production through Advanced Manufacturing, Intelligent Automation and Work Integrated Learning, and the conference emphasized stakeholder value, the societal role of industry, worker wellbeing, and environmental sustainability, in alignment with the European Commission's vision for the future of manufacturing. The 59 papers included here were accepted for publication and presentation at the symposium after a thorough review process. They are divided into 6 sections reflecting the thematic areas of the conference, which were: sustainable manufacturing, smart production and automation, digitalization for efficient product realization, circular production, industrial transformation for sustainability, and the integration of education and research. Highlighting the latest developments and advances in automation and sustainable production, the book will be of interest to all those working in the field.