

Green Manufacturing Initiative By Industries And

Green Technology deals with using science and technology to protect the environment as well as curb the negative impacts of human involvement. The emerging green technologies, covered in this book, will propel our economy in the near future. Their development will lead to global and sustainable powers that will impact our economics, societies, cultures, and the way of life. This book provides researchers, students, and professionals a comprehensive introduction, applications, benefits, and challenges of 15 emerging green technologies. It presents the impact of these cutting-edge technologies on our global economy and its future. The book will help a beginner to have an introductory knowledge about these emerging technologies. The main objective of the author is to provide a concise treatment that is easily digestible. It is a must-read for those graduate students or scholars who consider researching green technologies. It can also serve as a valuable resource for those business professionals who seek ways to green their processes.

This volume contains select papers presented during the Functional Textiles and Clothing Conference 2018. The book covers the recent scientific developments, cutting edge technologies, innovations, trends, challenges and opportunities in the field of functional and smart textiles and clothing. The contents of this volume will be of interest to researchers, professional engineers, entrepreneurs, and market stakeholders interested in functional textiles and clothing.

Globally, manufacturing facilities have taken a new turn with a mix of advanced robotics to fully unify production systems. Today's era of manufacturing has embraced smart manufacturing techniques by delving into intelligent manufacturing system of advances in robotics, controllers, sensors, and machine learning giving room for every aspect of the plant to be constantly accessible, monitored, controlled, redesigned, and adapted for required adjustments. Skill development within the manufacturing sector presents the advantage of high-quality products and can as well address long-term employment concerns through job creation. The development of skills for sustainable manufacturing is crucial to ensuring an efficient transition to a competitive economy by matching supply and demand for key skills. A number of factors ranging from green innovation, climate change, advances in technology, and global economic downturn are driving the need for a competitive and sustainable manufacturing value chain. The complexity of today's factories calls for new and existing workers to up-skill in order to influence design changes and production efficiency toward sustainable manufacturing.

Lean manufacturing is a process used in production to maximize efficiency and minimize waste by considering sustainability and the environment. This book presents a comprehensive overview of lean manufacturing in various enterprises, including manufacturing, construction, and the fabric and textile industry, among others. Chapters cover such topics as barriers to lean manufacturing, enterprise modeling, lean practices and circular economies, and more.

Emerging Green Technologies

Lean Manufacturing

Sustainable Manufacturing

Sustainable Development Goals and Sustainable Supply Chains in the Post-global Economy

Greening the Industrial Facility

Emerald Cities

Manufacturers are increasingly, under pressure from their major stakeholders to integrate environmental issues in the design and management of their products. These stakeholders include customer, regulators, employees, communities, and interest groups who have a common stake in protecting the earth from pollution and in limiting the exploitation of earth's limited natural resources. Manufacturers recognize that being environmentally responsible also offers competitive advantage to the firm. Hence the Handbook of Environmentally Conscious Manufacturing is written as a state-of-the-art reference to environmentally conscious manufacturing (ECM). The chapter authors were carefully selected. All the chapter authors have done extensive research and / or practice work in the world of Ecology and/or cover all the major topics: Environmentally Conscious Manufacturing. There are specific chapters to deal with sustainable manufacturing, recycling, eco-labelling, life cycle assessment, and ISO 14000 series of standards, as well as decision-making aspects of Environmentally Conscious Manufacturing. Decision-oriented topics on supply chain, decision models, quality initiative, environmental costing and decision support systems are also covered. The influence of ECM on marketing imperative is also covered. The Handbook is the most comprehensive treatment of Environmentally Conscious Manufacturing available to-date. It is the definitive, state-of-the-art reference to ECM and its applications to today's manufacturing firms.

This book presents a collection of studies on current best practices for delivering sustainable development policies within supply chains. It critiques the limitations of existing business theory and practice on sustainable supply chain management, and discusses opportunities for new conceptual models for businesses to engage with Sustainable Development Goals (SDGs). It examines how businesses can work towards implementing Sustainable Development Goals in the contexts of entrepreneurial initiative, industry collaboration and regional development. SDGs renew the sustainable development agenda for global communities and ask businesses and organisations to reset their sustainable development policies. A strategy to embed sustainable development principles into business operations along the supply chain operations, which has been a conceptual and, in many instances, practitioner, business and industry achievement of the past decades, is not enough to shift the economic and social conditions of poor populations around the world. How would the global supply chains of the future look like? What social relations does it envisage? How will businesses and organisations engage with societies, environments and complex institutional contexts in emerging markets and developing countries, which are faced with issues of population growth, needed leaps in infrastructure provision, educational and health improvements, cultural and institutional shifts? The books challenges current approaches to sustainable supply chain practices guided by discussion on SDGs. It reviews implementation issues of existing sustainable development approaches, assesses the advancement of sustainable development strategies and examines the opportunities for global value chains to increase their positive social and environmental inputs in regions, communities and organisations. The book collects both conceptual and empirical studies set in a variety of business and organisational contexts, such as manufacturing, retail, procurement, cities and industrial parks. It contests the accepted axioms of sustainable practices in the global supply chains and proposes new models for organisations and production networks to engage with societies and address market and production effects on communities and institutions.

Sustainable Manufacturing examines the overall sustainability of a wide range of manufacturing processes and industrial systems. With chapters addressing machining, casting, additive and gear manufacturing processes; and hot topics such as remanufacturing, life cycle engineering, and recycling, this book is the most complete guide to this topic available. Drawing on experts in both academia and industry, coverage addresses theoretical developments and practical improvements from research and innovations. This unique book will advise readers on how to achieve sustainable manufacturing processes and systems, and further the clean and safe environment. This handbook is a part of the four volume set entitled Handbooks in Advanced Manufacturing. The other three address Advanced Machining and Finishing, Advanced Welding and Deforming, and Additive Manufacturing. Provides basic to advanced level information on various aspects of sustainable manufacturing Presents the strategies and techniques to achieve sustainability in numerous areas of manufacturing and industrial engineering such as environmentally benign machining, sustainable additive manufacturing, remanufacturing and recycling, sustainable supply chain, and life cycle engineering Combines contributions from experts in academia and industry with the latest research and case studies Explains how to attain a clean, green, and safe environment via sustainable manufacturing Presents recent developments and suggests future research directions

Non-renewable materials can no longer be disposed once humankind's ever increasing needs cannot be fulfilled anymore due to limited resources. Reuse and recycling become inevitable requirements for product and process design. Renewable resources must not be consumed in quantities higher than can be regained. New technologies have to be developed and applied for a Sustainable Product Development and Life Cycle Engineering to fulfill the needs of humankind, protecting public health, welfare, and environment. The 8th Global Conference on Sustainable Manufacturing brings together some of the world's leading experts to present a scientific conference in Abu Dhabi, one of the world's fastest growing economies and a global leader in the development of sustainable technologies. The conference will focus on 7 areas: Value adding by sustainable manufacturing in the UAE Potentials of renewables Education for sustainability engineering Green supply chain and transportation Microelectronics and resource efficiency Technology driven startups Sustainable products and manufacturing processes

Textile Industry and Environment

The Italian Flagship Initiative

Challenges, Solutions and Implementation Perspectives

International Perspectives on Socio-Economic Development in the Era of Globalization

Green Supply Chain

Green Production Strategies for Sustainability

This book will review the current status of the agriculture and agri-food sector in regard to green processing and provide strategies that can be used by the sector to enhance the use of environmentally-friendly technologies for production, processing. The book will look at the full spectrum from farm to fork beginning with chapters on life cycle analysis and environmental impact assessment of different agri-food sectors. This will be followed by reviews of current and novel on-farm practices that are more environmentally-friendly, technologies for food processing that reduce chemical and energy use and emissions as well as novel analytical techniques for R&D and QA which reduce solvent, chemical and energy consumption. Technologies for waste treatment, "reducing, reusing, recycling", and better water and energy stewardship will be reviewed. In addition, the last section of the book will attempt to look at technologies and processes that reduce the generation of process-induced toxins (e.g. trans fats, acrylamide, D-amino acids) and will address consumer perceptions about current and emerging technologies available to tackle these processing and environmental issues.

In this book, the relationship between the textile industry and the environment is examined from four different viewpoints. Recycling of spinning mill wastes, ozone usage that provides less chemical and water utilization, reuse of treated water in the dyeing processes, and approaches in the treatment of wastewaters of dyeing plants and finishing factories are solutions offered to reduce environmental pollution arising from textile production processes. Apart from this, energy management is also a subject that can be associated with the environment, and as a consequence, the possibility of utilizing textile materials to which phase change materials are applied, not only for comfort purposes but also as energy storage materials, means that technical textiles could be a solution for energy storage.

This book provides benchmarking tools on sustainable manufacturing and aims to spur eco-innovation through better understanding of innovation mechanisms.

Green Manufacturing: Fundamentals and Applications introduces the basic definitions and issues surrounding green manufacturing at the process,machine and system (including supply chain) levels. It also shows, by way of several examples from different industry sectors, the potential for substantial improvement and the paths to achieve the improvement. Additionally, this book discusses regulatory and government motivations for green manufacturing and outlines the path for making manufacturing more green as well as making production more sustainable. This book also: Discusses new engineering approaches for manufacturing and provides a path from traditional manufacturing to green manufacturing Addresses regulatory and economic issues surrounding green manufacturing Details new supply chains that need to be in place before going green Includes state-of-the-art case studies in the areas of automotive, semiconductor and medical areas as well as in the supply chain and packaging areas

Green Technologies in Food Production and Processing

An Itinerary Between Feelings and Technology

Sustainable Manufacturing?

Green Manufacturing

Making and Keeping New Industries in the United States

The integration of eco-friendly aspects, tools and solutions into a conventional supply chain leads to environmentally friendly global processes in the manufacturing and service industry. This book offers a selection of chapters that explain the impact of green supply chain solutions on value-making chains. The aim of this book is to help students at all levels as well as managers and researchers to understand and appreciate the impact, value and implementation of green supply chain solutions in the Industry 4.0 era.

This book presents the select proceedings of the International Conference on Advances in Sustainable Technologies (ICAST 2020), organized by Lovely Professional University, Punjab, India. This book caters to the industrial and production engineering aspects. It covers the industrial and production engineering areas such as sustainable manufacturing systems, decision sciences, supply chain management, Just in Time (JIT), logistics and supply chain management, rapid prototyping and reverse engineering, quality control and reliability, six sigma, smart manufacturing, time and motion study, six sigma, ergonomics, operations management, manufacturing management, metrology, manufacturing process optimization, machining and machine tools, casting, welding, and forming. This book will be useful for industry professionals and researchers working in the area of mechanical engineering, especially industrial and production engineering.

This book is open access under a CC BY 4.0 license. This book presents results relevant in the manufacturing research field, that are mainly aimed at closing the gap between the academic investigation and the industrial application, in collaboration with manufacturing companies. Several hardware and software prototypes represent the key outcome of the scientific contributions that can be grouped into five main areas, representing different perspectives of the factory domain:1) Evolutionary and reconfigurable factories to cope with dynamic production contexts characterized by evolving demand and technologies, products and processes.2) Factories for sustainable production, asking for energy efficiency, low environmental impact products and processes, new de-production logics, sustainable logistics.3) Factories for the People who need new kinds of interactions between production processes, machines, and human beings to offer a more comfortable and stimulating working environment.4) Factories for customized products that will be more and more tailored to the final user's needs and sold at cost-effective prices.5) High performance factories to yield the due production while minimizing the inefficiencies caused by failures, management problems, maintenance.This books is primarily targeted to academic researchers and industrial practitioners in the manufacturing domain.

An examination of the politics of green jobs that foresees a potential ideological shift away from neoliberalism toward "demoliberalism." Good Green Jobs in a Global Economy is the first book to explore the broad implications of the convergence of industrial and environmental policy in the United States. Under the banner of "green jobs," clean energy industries and labor, environmental, and antipoverty organizations have forged "blue-green" alliances and achieved some policy victories, most notably at the state and local levels. In this book, David Hess explores the politics of green energy and green jobs, linking the prospect of a green transition to tectonic shifts in the global economy. He argues that the relative decline in U.S. economic power sets the stage for an ideological shift, away from neoliberalism and toward "demoliberalism," a shift characterized by a more defensive posture with respect to trade and a more active industrial policy. After describing federal green energy initiatives in the first two years of the Obama administration, Hess turns his attention to the state and local levels, examining demand-side and supply-side support for green industry and local small business. He analyzes the successes and failures of green coalitions and the partisan patterns of support for green energy reform. This new piecemeal green industrial policy, Hess argues, signals a fundamental challenge to anti-interventionist beliefs about the relationship between the government and the economy.

Green Practices and Strategies in Supply Chain Management

Fundamentals and Applications

Advances in Mechanical and Materials Technology

An Augmented Approach

Advances in Industrial and Production Engineering

Sustainability and company performance

This book presents select papers from the International Conference on Energy, Material Sciences and Mechanical Engineering (EMSME) - 2020. The book covers the three core areas of energy, material sciences and mechanical engineering. The topics covered include non-conventional energy resources, energy harvesting, polymers, composites, 2D materials, systems engineering, materials engineering, micro-machining, renewable energy, industrial engineering and additive manufacturing. This book will be useful to researchers and professionals working in the areas of mechanical and industrial engineering, materials sciences, and energy technology.

In today's world, globalization bears intense interdependencies between countries, and the impact global business transactions have on society and economics is more palpable than ever. Despite this, many developing countries in the global market find themselves struggling to support perpetual population growth. These countries must find ways to attain sustainable development in the economic, social, and environmental sectors. International Perspectives on Socio-Economic Development in the Era of Globalization seeks to examine the existing variability of development in the global marketplace and to identify the catalysts responsible for this disparity of success. This title analyzes the economic frontiers, social norms, and infrastructural capabilities that factor into the socio-economic growth of the developing and under-developed world. This book will become a definitive text for policy makers, academics, students, and business executives.

This dissertation approaches the question of sustainability and its influence on company performance, with special focus on the manufacturing industry. In the contemporary production environment, manufacturing operations must take into account not only profit, but also environmental and social performance, in order to ensure the long-term development of the company. Companies have to decide whether they should allocate resources to environmental and social practices in order to improve their competitive advantage. Consequently, in decision-making processes concerning operations, it is important for companies to understand how to coordinate profit, people, and planet. The objective of this dissertation was to investigate the current situation regarding manufacturers' sustainable initiatives, and to explore the relationship between these sustainable practices and companies' performance, including financial performance, operational performance, innovation performance, environmental performance, and social performance. First of all, a structured literature review was conducted to identify sustainable factors considered to be important in the decision making of manufacturing operations. The findings were synthesized into a conceptual model, which was then adopted as the basis for designing the survey instrument used in this dissertation. Drawing on Global Reporting Initiative (GRI) reports, empirical research was performed to explore the relationship between environmental management practices and company performance. Interestingly, the findings showed that many environmental management practices had a strong positive impact on innovation performance. Sustainability disclosures and financial performance were further analyzed using extended data from the GRI reports. The results also showed that sustainability disclosure with respect to people, planet, and social performance had a positive correlation with company performance. In order to verify these research area and to verify these findings, a triangulation approach was adopted among middle and large sample companies in the Swedish manufacturing industry. The results indicated that the sustainable improving practices had a positive impact on company performance.

Intended for academics and students in the fields of economic development, sociology and economic geography both in South Africa and internationally, This work is also useful for the Development Studies, Development Economics, African Studies and Geography departments in universities in Europe and North America.

Green manufacturing has developed into an essential aspect of contemporary manufacturing practices, calling for environmentally friendly and sustainable techniques. Implementing successful green manufacturing processes not only improves business efficiency and competitiveness but also reduces harmful production in the environment. The Handbook of Research on Green Engineering Techniques for Modern Manufacturing provides emerging perspectives on the theoretical and practical aspects of green industrial concepts, such as green supply chain management and reverse logistics, for the sustainable utilization of resources and applications within manufacturing and engineering. Featuring coverage on a broad range of topics such as additive manufacturing, integrated manufacturing systems, and machine materials, this publication is ideally designed for engineers, environmental professionals, researchers, academicians, managers, policymakers, and graduate-level students seeking current research on recent and sustainable practices in manufacturing processes.

Good Green Jobs in a Global Economy

Green and Sustainable Manufacturing of Advanced Material

Perspectives, Approaches, and Tools

Sourcing to Support the Green Initiative

Sustainable Machining

The Case of South Africa and Ekhurhuleni

Organizations of all types are consistently working on new initiatives, product lines, and workflows as a way to remain competitive in the modern business environment. No matter the type of project at hand, employing the best methods for effective execution and timely completion of the task is essential to business success. Operations and Service Management: Concepts, Methodologies, Tools, and Applications is a comprehensive reference source for the latest research on business operations and production processes. It examines the need for a customer focus and highlights a range of pertinent topics such as financial performance measures, human resource development, and business analytics. This multi-volume book is ideally designed for managers, professionals, students, researchers, and academics interested in operations and service management.

This book comprises the select proceedings of the 2nd International Conference on Future Learning Aspects of Mechanical Engineering (FLAME) 2020. In particular, this volume discusses different topics of industrial and production engineering such as sustainable manufacturing processes, logistics, Industry 4.0 practices, circular economy, lean six sigma, agile manufacturing, additive manufacturing, IoT and Big Data in manufacturing, 3D printing, simulation, manufacturing management and automation, surface roughness, multi-objective optimization and modelling for production processes, developments in casting, welding, machining, and machine tools. The contents of this book will be useful for researchers as well as industry professionals.

Green Manufacturing Initiative (GMI): The initiative provides a conduit between the university and industry to facilitate cooperative research programs of mutual interest to support green (sustainable) goals and efforts. In addition to the operational savings that greener practices can bring, emerging market demands and governmental regulations are making the move to sustainable manufacturing a necessity for success. The funding supports collaborative activities among universities such as the University of Michigan, Michigan State University and Purdue University and among 40 companies to enhance economic and workforce development and provide the potential of technology transfer. WMU participants in the GMI activities included 20 faculty, over 25 students and many staff from across the College of Engineering and Applied Sciences; the College of Arts and Sciences' departments of Chemistry, Physics, Biology and Geology; the College of Business; the Environmental Research Institute; and the Environmental Studies Program. Many outside organizations also contribute to the GMI's success, including Southwest Michigan First; The Right Place of Grand Rapids, MI; Michigan Department of Environmental Quality; the Michigan Department of Energy, Labor and Economic Growth; and the Michigan Manufacturers Technical Center.

Intended for academics and students in the fields of economic development, sociology and economic geography both in South Africa and internationally, This work is also useful for the Development Studies, Development Economics, African Studies and Geography departments in universities in Europe and North America.

Sustainable Manufacturing for Industry 4.0

Concepts, Methodologies, Tools, and Applications

Select Proceedings of EMSME 2020

Evidence from the manufacturing industry

Urban Industry

Fashion Sustainability and Economic Development

Here is a refreshing look at how American cities are leading the way toward greener, cleaner, and more sustainable forms of economic development. In Emerald Cities, Joan Fitzgerald shows how in the absence of a comprehensive national policy, cities like Chicago, New York, Portland, San Francisco, and Seattle have taken the lead in addressing the interrelated environmental problems of global warming, pollution, energy dependence, and social justice. Cities are major sources of pollution but because of their population density, reliance on public transportation, and other factors, Fitzgerald argues that they are uniquely suited to promote and benefit from green economic development. For cities facing worsening budget constraints, investing in high-paying green jobs in renewable energy technology, construction, manufacturing, recycling, and other fields will solve two problems at once, sparking economic growth while at the same time dramatically improving quality of life. Fitzgerald also examines how investing in green research and technology may help to revitalize older industrial cities and offers examples of cities that don't make the top-ten green lists such as Toledo and Cleveland, Ohio and Syracuse, New York. And for cities wishing to emulate those already engaged in developing greener economic practices, Fitzgerald shows which strategies will be most effective according to each city's size, economic history, geography, and other unique circumstances. But cities cannot act alone, and Fitzgerald analyzes the role of state and national government policy in helping cities create the next wave of clean technology growth. Lucid, forward-looking, and guided by a level-headed optimism that clearly distinguishes between genuine progress and exaggerated claims, Emerald Cities points the way toward a sustainable future for the American city.

Green Production Engineering and Management is an interdisciplinary collection of the latest advances from academia and industry on the management of production engineering in a green and responsible way. Background theory, methods, tools and techniques, and case study examples are all combined to make a complete guide for researchers, engineers, and managers. The interdisciplinary approach taken by this book allows a holistic understanding of a complex problem, helping readers with management backgrounds to better appreciate production engineering issues and vice versa. Themes such as social responsibility, green manufacturing, and productivity management are all tackled together, helping the reader see how they are all linked in the industrial environment, and how new advances in one field could lead to benefits in others. Through the interdisciplinary exchange of principles, strategies, models, methodologies, and applications, this book hopes to uncover new ways to manage, think, and understand organizations, making them more strategic and competitive in the markets where they are or which they seek to occupy in the near future. Includes case studies from industry, illustrating how the advances discussed can be applied in the real world. Covers the environmental regulations relevant to green production and will help readers find better ways to meet them. Draws on research from several different disciplines to help readers discover innovative solutions to complex problems.

This edited volume presents the research results of the Collaborative Research Center 1026 "Sustainable manufacturing - shaping global value creation". The book aims at providing a reference guide of sustainable manufacturing for researchers, describing methodologies for development of sustainable manufacturing solutions. The volume is structured in four chapters covering the following topics: sustainable manufacturing technology, sustainable product development, and sustainable production networks and systematic change towards sustainable manufacturing. The target audience comprises both researchers and practitioners in the field of sustainable manufacturing, but the book may also be beneficial for graduate students.

This book provides an overview on current sustainable machining. Its chapters cover the concept in economic, social and environmental dimensions. It provides the reader with proper ways to handle several pollutants produced during the machining process. The book is useful on both undergraduate and postgraduate levels and it is of interest to all those working with manufacturing and machining technology.

Waste Management as Economic Industry Towards Circular Economy

Advances in Sustainable Manufacturing

Select Proceedings of ICAST 2020

Hearing Before the Subcommittee on Commerce, Trade, and Consumer Protection of the Committee on Energy and Commerce, House of Representatives, One Hundred Eleventh Congress, First Session, October 7, 2009

Skills Development for Sustainable Manufacturing

Eco-Innovation in Industry Enabling Green Growth

Sustainable MachiningSpringer

Industry 4.0 promises tremendous opportunities for industries to go green by leveraging virtual physical systems and internet driven technologies for a competitive advantage and set the platform for the factory of the future and smart manufacturing. The book provides measures that can be adopted by practicing design engineers, to develop products that will be sustainable in all stages of its life cycle. It helps organizations in implementation of sustainable manufacturing practices and formulation of critical strategies in their transition towards Industry 4.0., and the book will provide insights on ways of deploying these practices in correlation with the environmental benefits mapped to support the practicing managers and stakeholders. Features Assists in the understanding of the shifting paradigm in manufacturing sector towards smart and sustainable practices Showcases contemporary technologies and their insurgence in existing industries Focuses on need, applications, and implementation framework for industry 4.0 Encapsulates all that one has to learn about sustainability and its transformation in Industry 4.0 Real time case studies are presented

Sustainable development is a globally recognized mandate and it includes green or environment-friendly manufacturing practices. Such practices orchestrate with the self-healing and self-replenishing capability of natural ecosystems. Green manufacturing encompasses synthesis, processing, fabrication, and process optimization, but also testing, performance evaluation and reliability. The book shall serve as a comprehensive and authoritative resource on sustainable manufacturing of ceramics, metals and their composites. It is designed to capture the diversity and unity of methods and approaches to materials processing, manufacturing, testing and evaluation across disciplines and length scales. Each chapter incorporates in-depth technical information without compromising the delicate link between factual data and fundamental concepts or between theory and practice. Green and sustainable materials processing and manufacturing is designed as a key enabler of sustainable development. A one-stop compendium of new research and technology of green manufacturing of metals, ceramics and their composites In-depth cutting-edge treatment of synthesis, processing, fabrication, process optimization, testing, performance evaluation and reliability which are of critical importance to green manufacturing Stimulates fresh thinking and exchange of ideas and information on approaches to green materials processing across disciplines

The CIRP Encyclopedia covers the state-of-art of advanced technologies, methods and models for production, production engineering and logistics. While the technological and operational aspects are in the focus, economical aspects are addressed too. The entries for a wide variety of terms were reviewed by the CIRP-Community, representing the highest standards in research. Thus, the content is not only evaluated internationally on a high scientific level but also reflects very recent developments.

Handbook of Environmentally Conscious Manufacturing

Growing U.S. Trade in Green Technology

Competitiveness and Sustainability

Green Production Engineering and Management

Handbook of Research on Green Engineering Techniques for Modern Manufacturing

CIRP Encyclopedia of Production Engineering

When generating electronic products, manufacturing enterprises are producing pollution and waste that is harmful to the environment. As a result of this increasing event, green production has become a valuable research topic. Green Production Strategies for Sustainability is an essential reference source for the latest empirical research and relevant theoretical frameworks on creating profit through environmentally friendly operating processes. Including coverage on a range of topics such as corporate social responsibility, environmental performance, and green supply chain, this book is ideally designed for managers, professionals, and researchers seeking current research on green production use in sustainability.

Fashion is a lot more than providing an answer to primary needs. It is a way of communication, of distinction, of proclaiming a unique taste and expressing the belonging to a group. Sometimes to an exclusive group. Currently, the fashion industry is moving towards hyperspace, to a multidimensional world that is springing from the integration of smart textiles and wearable technologies. It is far beyond aesthetics. New properties of smart textiles let designers experiment with astonishing forms and expressions. There are also surprising contrasts and challenges: a new life for

We look at green supply chain management from the vantage point of the triple bottom line: environmental, economic, and social. There are many sustainability decisions that can be made on which we have an incredible impact. Usually, managers have the opportunity to make decisions in five areas of the supply chain: plan, source, make, deliver, and return. Nowadays, consumers care more about where and how the products are produced and delivered, what they are made of, and who made them. Regulatory bodies are continuously creating pressure on firms to adopt eco-friendly practices in their businesses for better environmental sustainability. As a result, firms have just two choices: to adopt green and/or eco-friendly practices in their supply chain operations to fulfill their customers' and regulatory bodies' requirement or not to adopt green practices and lose their business position and potential customers.

This book provides a stage-by-stage integration of lean and green manufacturing paradigms to achieve environmental and economic benefits. The book includes chapters on conceptual development for incorporating the lean and green paradigm, and methods, tools and techniques for developing and integrating lean manufacturing. Several case studies which demonstrate the benefits of integrating lean and green manufacturing techniques are also covered here. The contents of this book are expected to support researchers and practitioners in the implementation of integrated lean and green manufacturing technologies.

Lean and Green Manufacturing

Functional Textiles and Clothing

Factories of the Future

Towards Eco-Efficiency and Business Performance

Select Proceedings of FLAME 2020

Recent Trends in Industrial and Production Engineering

This book features in-depth and thorough coverage of Minimum Impact Mill Technologies which can meet the environmental challenges of the pulp and paper industry and also discusses Mills and Fiberlines that encompass “State-of-the-Art” technology and management practices. The minimum impact mill does not mean “zero effluent”, nor is it exclusive to one bleaching concept. It is a much bigger concept which means that significant progress must be made in the following areas: Water Management, Internal Chemical Management, Energy Management, Control and Discharge of Non-Process Elements and Removal of Hazardous Pollutants. At the moment, there is no bleached kraft pulp mill operating with zero effluent. With the rise in environmental awareness due to the lobbying by environmental organizations and with increased government regulation there is now a trend towards sustainability in the pulp and paper industry. Sustainable pulp and paper manufacturing requires a holistic view of the manufacturing process. During the last decade, there have been revolutionary technical developments in pulping, bleaching and chemical recovery technology. These developments have made it possible to further reduce loads in effluents and airborne emissions. Thus, there has been a strong progress towards minimum impact mills in the pulp and paper industry. The minimum-impact mill is a holistic manufacturing concept that encompasses environmental management systems, compliance with environmental laws and regulations and manufacturing technologies.

The “green” or environmental sustainability movement has taken hold throughout the world. Its staying power is confirmed by that fact that environmental emphasis in organizations did not decrease during the recent global recession, but rather increased. However, since most organizations rely heavily on their supply base for providing components, materials, and services that become part of their final products, organizations must revisit their sourcing processes and choices to have a real impact on the environment. This book begins with an introduction to the idea of sustainability and to the concept of what it means to source to support an organization’s green initiatives, and why this is important from a holistic, lifecycle perspective. The initial chapters will also provide a point of view of how green sourcing fits into the organization’s entire portfolio of sustainability initiatives. Examples of industries and associations that lead the way in green sourcing will be presented. In addition, best practices in green sourcing will be discussed. The book also provides a perspective on how organizations can encourage and support their suppliers in pursuing green initiatives, and what types of initiatives provide a good starting point.

This textbook and reference fills a critical gap in literature on the comprehensive environmental impacts of industrial organizations. Nineteen chapters examine individual industrial sectors inherent “potential to pollute.” The text goes on to analyze new technologies and practices for transforming environmentally degrading effects of industry, and shows how managers can navigate these changes and move their organizations towards long-term environmental sustainability.

This book highlights the latest advances in waste management, resource recovery and resource circulation in various countries, with a special emphasis on India. It leads the way towards a sustainable circular economy developing local economy and enhances the sustainability of the energy sector as a whole by holistically addressing waste management. Waste management is a major problem around the globe; effective waste disposal is one of the most plugging issues faced by municipalities. Yet waste can also serve as a major source of energy rather than a disposable material. The book discusses various upstream and downstream aspects of waste management systems, e.g. conversion processes and collection methods, that are needed in order to make waste management systems into an effective industry and move closer to a circular economy. It also provides information on management tools for analysis and decision support. All chapters included here are based on high-quality research papers presented at the conference IconSWM 2018.

Green Chemistry and Sustainability in Pulp and Paper Industry

Operations and Service Management: Concepts, Methodologies, Tools, and Applications

Enabling Green Growth